Help-seeking behaviour for emotional or behavioural problems among Australian adolescents: the role of socio-demographic characteristics and mental health problems

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DECLARATION

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university and that, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

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ABSTRACT

This thesis describes the relationship between the socio-demographic characteristics and level of mental health problems experienced by young adolescents and three different stages of help-seeking through which adolescents may progress when seeking professional help for self-perceived emotional or behavioural problems: (i) Problem recognition; (ii) Perception of a need for professional help for problems; (iii) Having received the help they needed for these problems. The thesis provides new information about help-seeking by separately examining the relationship between the key predictor variables and each of these different stages of help-seeking.

Participants were 5,634 adolescents recruited for the *beyondblue* Schools Research Initiative. Adolescents completed measures of help-seeking behaviour, several measures of mental health problems (emotional and behavioural difficulties, depression and anxiety) and several measures of psychosocial functioning (interpersonal skills, constructive problem solving and perceived levels of social support).

Forty percent of all adolescents perceived that they had experienced emotional or behavioural problems in the previous six months and 18% perceived they had more of these problems than their peers. Eight percent of all adolescents perceived a need for professional help with their problems. Only 3% of all adolescents reported receiving the help they needed for their problems, despite perceiving a need for professional help.

Adolescents with higher levels of mental health problems were more likely to perceive they had emotional or behavioural problems, more problems than their peers and a need for professional help with these problems beyond that explained by their levels of psychosocial functioning. Perceiving emotional or behavioural problems was more common among

females compared to males, adolescents from a non-English speaking background compared to those from an English speaking background, and among adolescents from families where parents did not live together compared to those from families with parents living together. Adolescents from families with separated or divorced parents were more likely to perceive they had more problems than their peers and a need for professional help with their problems compared to those from families with parents living together. These associations were maintained after adjusting for adolescents‟ levels of mental health problems.

Socio-demographic characteristics and level of mental health problems explained little variability in the extent to which adolescents reported that they received the help they needed. However, results of subsidiary analyses revealed that adolescents with higher levels of constructive problem solving skills and perceived levels of family support were more likely to report they had received help.

These results highlight a need for intervention programs aimed at increasing adolescents‟ ability to recognise when they have emotional or behavioural problems and the point at which these problems require professional help, for example, by increasing levels of emotional competence and mental health literacy. These programs should also equip adolescents with resources to assist them in seeking professional help (e.g. problem solving skills and interpersonal skills) for their emotional or behavioural problems.

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My warmest thanks go to the adolescents who participated in this study. I hope this research serves to raise awareness of the difficulties that young people face when seeking professional help for emotional or behavioural problems.

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CHAPTER 1: INTRODUCTION

Overview

Approximately 13% to 19% of adolescents from Western countries experience mental health problems (Fergusson, Horwood, & Lynskey, 1993; Sawyer et al., 2000; Sawyer, Miller-Lewis, & Clark, 2007; Zwaanswijk, Van der Ende, Verhaak, Bensing, & Verhulst, 2003). Despite the benefits of receiving professional help (Kazdin, 2000; Weisz, Weiss, Han, Granger, & Morton, 1995), the majority of adolescents who experience mental health problems do not attend professional services or seek professional help (Saunders, Resnick, Hoberman, & Blum, 1994; Sawyer et al., 2000; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003; Zwaanswijk, Verhaak, Bensing, Van der Ende, & Verhulst, 2003). There is a need for further investigation to identify why only a minority of adolescents with mental health problems attend services or seek professional help.

A challenge for research investigating adolescent help-seeking behaviour for mental health problems is the absence of an agreed theoretical model of adolescent help-seeking behaviour. As there is no unifying conceptualisation or theory of adolescent help-seeking behaviour, it has been conceptualised and measured in different ways, often resulting in inconsistent findings across studies (Carlton & Deane, 2000; Deane, Wilson, & Ciarrochi, 2001; Gasquet, Chavance, Ledoux, & Choquet, 1997; Raviv, Sills, Raviv, & Wilansky, 2000; Rickwood & Braithwaite, 1994; Santor, Pouling, LeBlanc, & Kusumakar, 2006; Saunders et al., 1994; Sears, 2004).

Many studies that have examined adolescent help-seeking behaviour have treated it as a one-step process based on service attendance or on adolescents‟ or parents‟ reports of whether the adolescent sought professional help (Barker & Adelman, 1994; Boldero &

Fallon, 1995; Gasquet et al., 1997; Santor et al., 2006; Schonert-Reichl & Muller, 1996). Although these studies are able to describe characteristics of adolescents who do or do not seek professional help or attend services, they offer little insight into adolescents who may be at the initial stage of help-seeking. In contrast, the conceptualisation of help-seeking behaviour as a series of stages focuses on the process that individuals go through when seeking professional help, rather than focussing on the rates at which adolescents attend services or seek professional help (Cauce et al., 2002; Sears, 2004; Srebnik, Cauce, & Baydar, 1996; Zwaanswijk, Verhaak et al., 2003). The conceptualisation of help-seeking as a process warrants further attention; as Cauce et al. suggest: what is needed is "a focus on *help-seeking*, rather than simply *help getting*" (p.44). To date, only a few studies have conceptualised adolescent help-seeking behaviour as a series of stages through which adolescents progress when seeking professional help (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). This thesis has conceptualised help-seeking behaviour to consist of three primary stages derived from the available literature, which are thought to reflect the process adolescents go through when seeking professional help. These are: recognising emotional or behavioural problems; perceiving a need for professional help with such problems; and then receiving this help (Andersen, 1995; Andersen & Newman, 1973; Cauce et al., 2002; Kessler, Brown, & Broman, 1981; Logan & King, 2001; Rickwood, Deane, Wilson, & Ciarrochi, 2005; Srebnik et al., 1996; Verhulst & Koot, 1992; Zwaanswijk, Verhaak et al., 2003).

Examining the stages associated with help-seeking behaviour provides insight into why only a minority of adolescents with problems seek professional help or attend professional services. A range of factors has been found to be associated with different patterns of adolescent help-seeking. For example, adolescents" demographic characteristics, level of mental health problems and level of social support have been found to be associated with

different patterns of help-seeking behaviour (Barker & Adelman, 1994; Carlton & Deane, 2000; Gasquet et al., 1997; Saunders et al., 1994; Sears, 2004; Sheffield, Fiorenza, & Sofronoff, 2004; Verhulst & Van der Ende, 1997). However, to date, few studies that have examined the factors associated with adolescent help-seeking for mental health problems have conceptualised adolescent help-seeking behaviour as a staged process (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). Moreover, no such studies have been conducted in Australia. The aim of the present study is to examine the factors associated with different stages of adolescent help-seeking behaviour among a sample of Australian adolescents.

Definition of help-seeking terminology

This thesis focuses on adolescents aged 12 to 18 years. Help-seeking behaviour for emotional or behavioural problems pertains to the behaviour of actively seeking help from informal or formal (professional) sources of help for the purpose of resolving emotional, behavioural or mental health problems. However, the focus of this thesis is adolescent help-seeking from professional sources of help. Unless otherwise specified, for brevity and clarity of expression, adolescent help-seeking behaviour for emotional or behavioural problems is referred to as „adolescent help-seeking" throughout this thesis.

Work in this thesis assumes that adolescent help-seeking from professional sources of help is comprised of several stages, based on previous models and studies of help-seeking (Andersen, 1995; Andersen & Newman, 1973; Cauce et al., 2002; Kessler et al., 1981; Logan & King, 2001; Rickwood et al., 2005; Srebnik et al., 1996; Verhulst & Koot, 1992; Zwaanswijk, Verhaak et al., 2003). These stages are shown in Figure 1.1 and consist of *problem recognition*, *perceiving a need for professional help* and *receiving the help that*

was needed. A general sequential progression through the stages is assumed, from problem recognition through to receiving help (see Figure 1.1).

In this model *Problem recognition* pertains to adolescents‟ perceptions of whether they had emotional or behavioural problems, and *Perceiving a need for professional help* pertains to adolescents‟ perceptions of whether they needed professional help for their problems.

Receiving the help that was needed in Figure 1.1 pertains to whether adolescents felt they had received the help they perceived themselves to need from a professional source (e.g., a health service), as reported in stage two of the model. This reference is based on acknowledgement by the adolescents in question that they themselves feel they have received help for a self-perceived emotional or behavioural problem for which they had recognised their own need for a professional or formal level of help. For simplicity, throughout this thesis the term used for this stage is "receiving the help that was needed", although it must be remembered that this is always in the context of the adolescents‟ self-perception of need and not external (i.e., families, friends or defined by a clinician or diagnostic assessment) perceptions of need. Adolescents are used as primary informants as this thesis focuses on their experience of the stages comprising the help-seeking process.

This thesis also examines the relationship between a number of independent variables (gender, parental status, language spoken at home, parental employment status and levels of mental health problems) and the extent to which adolescents endorse each help-seeking stage. For example, the thesis describes the extent to which adolescents of different gender perceive themselves to have emotional or behavioural problems, perceive they need professional help for these problems, and report having received the help they perceived to be needed.

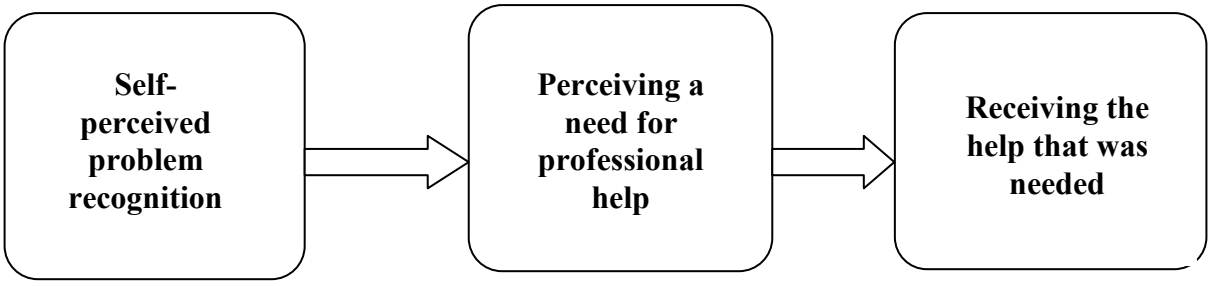

*Figure 1.1.*The fundamental stages of adolescent help-seeking employed by this study

Previous studies of adolescent help-seeking have utilised an array of indicators to assess this behaviour. Therefore, it is important to understand the difference between these various elements and definitions of help-seeking and the terms that different studies have used to describe them. Several methods have been used to assess whether adolescents have emotional or behavioural problems and problems for which they need professional help. One commonly used approach is to assume that adolescents have emotional or behavioural problems when they score above a recommended cut-off score on a standard behaviour checklist (Kodjo & Auinger, 2004; Sawyer et al., 2000; Sawyer & Patton, 2000). An alternative approach is to assume that adolescents have emotional or behavioural problems when they are identified by a clinician as having symptoms that meet the criteria for a diagnosis described in the DSM-IV (Sawyer et al., 2000). However, it cannot be assumed that adolescents who score above a cut-off on a behaviour checklist or who are diagnosed by a clinician as having a mental disorder will necessarily perceive themselves to have problems. Nor can it be assumed that they will consider themselves to need help from either formal or informal sources. There is evidence that a significant proportion of adolescents identified as meeting these two criteria for having mental health problems will not perceive themselves to have problems requiring professional help (Rickwood & Braithwaite, 1994; Sawyer et al., 2001; Sawyer et al., 2007; Zwaanswijk, Van der Ende et

al., 2003). It is possible that this may, in part, explain low levels of service utilisation amongst adolescents with mental health problems (Sawyer et al., 2001; Zwaanswijk, Van der Ende et al., 2003).

An alternative approach has been to focus on adolescents‟ subjective perception of whether they had problems (emotional, behavioural, mental health and/or physical problems) and also perceived a need for professional help with these problems (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). The merits of assessing adolescents‟ self-perceived problems and self-perceived needs are discussed in the detail in the body of this thesis. However, essentially, help-seeking is unlikely to begin until a need for help has been recognised (Cauce et al., 2002; Srebnik et al., 1996).

A commonly used indicator of help-seeking behaviour is the rate at which adolescents attend services. Rate of service attendance is most often used by epidemiological studies and is usually obtained from service registries, or from adolescents and parents, and describes the proportion of adolescents who have attended a service. Other studies of adolescent help-seeking have assessed help-seeking behaviour by ascertaining adolescents‟ reports of whether they have sought help for problems and, in some cases, from where they have sought help (Barker & Adelman, 1994; Boldero & Fallon, 1995; Fallon & Bowles, 2001; Rickwood & Braithwaite, 1994). However, examining the rate at which adolescents attend a service assesses only one source of help used by adolescents and does not guarantee that appropriate and effective help was obtained. Furthermore, assessing the rate at which adolescents seek help does not ascertain whether the adolescents felt that appropriate or effective help was received.

Other studies conducted in the help-seeking area have focused on adolescents‟ willingness or their intentions to seek help for a particular problem as an indicator of help-seeking

(Cauce et al., 2002; Deane et al., 2001; Raviv et al., 2000; Sheffield et al., 2004). While informative, studying adolescents‟ intentions does not directly assess their actual help-seeking behaviour.

No previous studies have assessed whether adolescents who perceived themselves to need professional help actually believed that they received the help they sought for their self-perceived emotional or behavioural problems as a final stage of help-seeking. Thus, the conceptualisation of help-seeking in this study assesses the final stage of help-seeking by assessing adolescents‟ reports of receiving the help they needed.

To maintain consistency and clarity across the studies that are cited in the present literature review, different approaches used to describe adolescent help-seeking are categorised according to these different definitions (see Table 1.1).

Table 1.1
Definitions of help-seeking terminology used in this thesis

Help-seeking term	Informant/Source	Definition
Service attendance	Registries Adolescents Parents	Rates of service attendance. May also include the receipt of a referral for specialised mental health services (e.g. from their GP)
Help sought from professional sources or other sources	Adolescent Parent	Report whether adolescents sought help from formal or informal sources
Received help	Adolescent	Report whether help was received from a professional or another source of help (e.g. an informal source)
Perceived need for professional help	Adolescent Parent	Report whether the adolescent needed professional help
Problem Recognition	Adolescent Parent	Report whether the adolescent had an emotional or behavioural problem

Note. When each help-seeking term is referred to, the informant/source that was used will be specified.

Chapter structure

The structure of the introduction to this thesis is shown in Table 1.2. Within the adolescent help-seeking literature, there are some key studies that have assessed many aspects of help-seeking behaviour and have therefore been drawn on repeatedly throughout this literature review. To avoid repetition, the details of each of these key studies are only described when they are first cited in the literature review. When each study is subsequently described the reader is directed to Table 1.3, which provides for each of these studies (where appropriate and if this information was provided):

- the size and age range of the sample;
- the source of the sample;
- the method used to assess help-seeking behaviour; and
- other measures used to assess factors associated with help-seeking behaviour (where appropriate).

Table 1.2

Structure of the introduction and literature review

Section	Description
Adolescent mental health problems	This provides a brief background about the nature and prevalence of mental health problems, the continuation of these problems into adulthood, the burden these problems pose for adolescents and rates of mental health service use among adolescents.
Conceptualisations of adolescent help-seeking and approaches to assessment	This section reviews definitions of adolescent help-seeking, the difficulties encountered when attempting to assess adolescent help-seeking, the key approaches and conceptualisations that have guided the assessment of adolescent help-seeking, and the advantages and disadvantages to each of these approaches.
Part I: Broad patterns of adolescent help-seeking	This section reports the broad patterns of help-seeking that have been found by studies. This includes • The rate at which adolescents seek help • Adolescents‟ preference for different sources of help • Adolescents‟ increased willingness and likelihood for seeking help for severe problems rather than minor problems • Commonly cited barriers and facilitators
Part II: The factors associated with adolescent help-seeking	This section reviews factors associated with adolescent help-seeking including: • Socio-demographic characteristics (gender, age, socio-economic status, ethnicity and parental and family characteristics) • Adolescents‟ levels of mental health problems • Psychosocial factors
Part III: The present study	This section describes the present study in the context of the previously reviewed literature, including the aims of this study and the hypothesised relationships.

Table 1.3
Key studies of help-seeking

Authors	Year	*n*	Sample/Subjects/Informants	Help-seeking assessment goal and measure used	Other variables investigated of relevance to this study
Wintre & Crowley	1993	247	Canada - School based study Adolescents - Aged 13 to 18 years (mean age 14 years) Adolescent self-report	*Adolescents' help-seeking intentions* To assess adolescents" help-seeking intentions, adolescents were presented with three generic problem scenarios and asked whom they would go to for help for an interpersonal problem, an interpersonal problem with a peer & an interpersonal problem with family. Choices of help were: a familiar adult, an adult expert, a familiar peer or peer expert.	Socio-demographic characteristics - Gender - Age
Barker & Adelman	1994	471	United States of America (USA) - School based Adolescents from ethnic minority groups - Mean age 17.7 years Adolescent self-report	*Help sought from professionals* To assess whether help was sought from professional sources of help, adolescents were asked to indicate if they sought help from a list of sources of professional help and also indicated the frequency of use of each source of help (school-based clinic, therapist or counsellor outside of school, school counsellor, social worker, clergy, medical personnel, outside clinic or health centre and "special helpers" relevant to the Latino community, e.g., healers and spiritual counsellors).	Psychological distress - Adapted version of the 58-item Hopkins Symptoms Checklist (HSCL) (Derogatis, Lipman, Rickels, Uhelenhuth, & Covi, 1974): Participants were regarded as experiencing a high level of psychological distress by having a mean score of 3 to 4 (on a 4-point scale) on at least one HSCL subscale (somatisation, obsessive-compulsive, interpersonal sensitivity, anxiety and depression). Social support (perceived availability and satisfaction with informal social support) - Assessed with items adapted from the Perceived Social Support Friends and Family Scales (Procidano & Heller, 1983).
Rickwood & Braithwaite	1994	715	Australia - School based Adolescents - Aged 16 to 19 years (mean age 17.4 years) Adolescent self report	*Help sought from professionals and informal sources* To assess whether adolescents had sought help, adolescents were presented with two items ascertaining whether they had sought help from a friend, family member and a professional source (family doctor, mental health service, educational help service) in the last 12 weeks for a personal problem (defined as being worried, depressed or upset about something).	Socio-demographic characteristics -Gender Mental health status -Assessed using the 12-item General Health Questionnaire (Goldberg, 1972).

Authors	Year	*n*	Sample/Subjects/Informants	Help-seeking assessment goal and measure used	Other variables investigated of relevance to this study
Saunders et al.	1994	17,143	USA - Metropolitan school based sample Adolescents - Aged 13 to 18+ years, no mean age given (77% aged 14 to 17 years) Adolescent self-report	*Need for help, help sought from professionals and informal sources* To assess the professional help that adolescents had sought, they were asked whether they had any serious personal, emotional, behavioural or mental health problems they felt they needed help with during the past year, with a choice of the following response options: - I have had few or no personal problems - I have had (or have now) severe problems but have not felt I needed professional help - Yes, but I did not seek professional help - Yes, and I did seek professional help To assess the informal help that adolescents had sought and also their willingness to seek help from different sources of help, they were asked: -Whether they discussed their problems with anyone; and - Whom they would go to first for help for a problem with i) depression or ii) family.	Socio-demographic characteristics - Gender - Age - SES - Parent Education - Parent Marital Status Emotional Adjustment - Emotional Distress scale: derived from the National Center for Health Statistics (1977) - Suicidal Ideation :1 item of the Beck Depression Inventory (BDI; Beck et al., 1961)
Boldero & Fallon	1995	1,013	Australia - School based and sample of convenience (acquaintances of graduate students) Adolescents - Age range: 11 to 18 years (mean age 14.5 years) Adolescent self-report	*Help sought from professionals and informal sources* To assess whether adolescents had sought help, they were asked to indicate if they had asked for help (and from whom they sought help) with a problem that caused them considerable stress in the previous 6 months. Their selected problem was categorised into one of four categories by the researchers, which were: problems with health, interpersonal relationships, family, or education.	Socio-demographic characteristics - Gender - Age (School Year level)
Schonert-Reichl & Muller	1996	221	Canada - School based Adolescents - Age range :13- 18 yrs (mean age 15 years) Adolescent self report	*Help sought from professionals and informal sources* To assess whether adolescents had sought help, a measure adapted from Offer, Howard, Schonert and Ostrov (1991) ascertained from adolescents whether they had sought help from mothers, fathers, friends or professionals for an emotional or personal problem.	Socio-demographic characteristics - Gender - Age

Authors	Year	*n*	Sample/Subjects/Informants	Help-seeking assessment goal and measure used	Other variables investigated of relevance to this study
Gasquet et al.	1997	3,287	France - School based Adolescents - Aged 12 to 20 years Adolescent self-report	*Service attendance* To assess whether adolescents had consulted a professional for help with depression, adolescents were asked if they had consulted a physician and/or nurse for depression during the year	Socio-demographic characteristics - Gender - Age - SES - Parents‟ marital status Emotional Distress - Depressive Symptom Scale (DSS) (Kandel & Davies, 1982, 1986) - Suicidal ideation, concentration and self-criticism
Kuhl, Jarkon-Horlick, & Morrissey	1997	280	USA - School based Adolescents - Mean age 15.7 years Adolescent self-report	*Barriers to help-seeking* To assess barriers to help-seeking, the Barriers to Adolescents Seeking Help (BASH) was devised by the authors of this study based on previous literature. - The BASH consisted of 37 items that reflected the following barriers: affordability, alienation, confidentiality, viewed family as sufficient to help, knowledge of resources, locus of control, viewed peers as sufficient help, perception of the therapist, self-awareness, self-perception, self-sufficiency, stigma, time availability, usefulness of therapy.	Socio-demographic characteristics - Gender - SES - Ethnicity (Caucasian, Asian American, Hispanic, African American)
Verhulst & Van der Ende	1997	2,227	Netherlands - Population based sample Children and adolescents - Aged 4 to 18 years Parent self-report	*Problem recognition, unmet need for professional help and service attendance* To assess parent-perceived problem recognition, parent-perceived „unmet need‟ for professional help and parent-reported service attendance, parents were asked: - whether they perceived emotional or behavioural problems in children or adolescents; - whether they perceived a need for help for their children/adolescents although they had not obtained it; and - whether the child/adolescent received a referral for specialised mental health services.	Parental factors - parental status, educational level, occupational level, change in parent co-habitational status, number of children under 18 years of age and whether parent had received mental health services. Emotional or behavioural problems - Child Behaviour Checklist (CBCL) (Achenbach, 1991a) Family Functioning -Mc Master Family Assessment Device (FAD) (Epstein, Baldwin & Bishop, 1983).

Authors	Year	*n*	Sample/Subjects/Informants	Help-seeking assessment goal and measure used	Other variables investigated of relevance to this study
Laitinen-Krispin et al.	1999	3,525	Netherlands - School based sample Children and adolescents - Aged 10 to 12 years (mean age at initial assessment was 10.9 years) Parent self report	*Service attendance* To assess service attendance information of was obtained from the psychiatric case register (Rotterdam Region). Children and adolescents were considered to have attended a service if they had at least one contact with a mental health service in the region within a five year period.	Parental status Problem behaviour and competency - CBCL (Achenbach, 1991a).
Carlton & Deane	2000	221	New Zealand Adolescents - Aged 14 to 18 years (mean age 15.63 years) Adolescent self report	*Help-seeking intentions* To assess adolescents‟ help-seeking intentions for suicidal thoughts and personal-emotional problems -participants were asked how likely it was they would seek professional psychological help from a psychologist or counsellor if they were to experience a personal-emotional problem or had suicidal thoughts.	Socio-demographic characteristics - Gender Psychological Symptoms & Distress - Hopkins Symptom Check List-21 (HSCL-21) (Green et al.,1998) Suicidal ideation - Suicidal Ideation Questionnaire (SIQ) (W. M. Reynolds, 1988) Attitudes towards help-seeking - Attitudes towards seeking professional psychological help scale (ATSPPHS) (Fischer & Turner, 1970) - Thoughts About Psychotherapy Survey (TAPS) (Kushner & Sher, 1989)
Raviv et al.	2000	512	Israel - School based Adolescents - Mean age 15.8 years Adolescent self-report	*Help-seeking intentions* To assess adolescents‟ willingness to seek help/help-seeking intentions, adolescents were presented with two problem scenarios: one relating to a minor romantic separation problem and the other to a severe emotional problem. Adolescents received either a self-referral version or „referral of other‟ version. Adolescents were asked to indicate their willingness to seek help (either for themselves or someone else) from friends, parents, psychologist, school counsellor and teacher.	Socio-demographic characteristics - Gender

Authors	Year	*n*	Sample/Subjects/Informants	Help-seeking assessment goal and measure used	Other variables investigated of relevance to this study
Barnes, Ikeda & Kresnow	2001	666	Adolescents and adults (aged 13 to 34 years) Self-report Contrasted Suicide case patients (n=153), i.e., patients who presented to one of three hospitals for treatment after a nearly lethal suicide attempt with randomly selected control patients (n=513)	*Help sought from professional and informal sources* To assess help sought, adolescents were asked if they had sought help from any consultant, a professional consultant, a family member or a friend for a health or emotional problem, in the 30 days prior to their suicide attempt (for suicide case patients) or the interview (for the control group) and, if so, was suicide raised.	Prior suicide ideation - Contrasted suicide case patients with a control group Suicide attempts - Contrasted those who had attempted suicide with those who had not
Deane et al.	2001	320	Australia - University based (psychology undergraduates) Young adults - Mean age 20.6 years - Sample consisted of 232 females and 70 males Self report	*Help-seeking intentions* To assess adolescents‟ intentions to seek help from professional sources of help, the General Help-seeking Questionnaire (GHSQ) was developed for this study. The GHSQ asked participants whom they would go to for help with a personal-emotional problem, an anxiety-depression problem, or suicidal thoughts.	Socio-demographic characteristics - Gender Suicidal Ideation -Suicidal Ideation Questionnaire (Reynolds, 1988) Hopelessness - Beck Hopelessness Scale (BHS) (Beck, Weissman, Lester & Tresler, 1974)
Fallon & Bowles	2001	196	Australia - School based Adolescents - Three groups of adolescents from school years/grades 7, 9 and 12, mean ages were 12.36, 14.40 and 16.43, respectively. Adolescent self-report	*Help sought from professional and informal sources* To assess help sought, adolescents were asked to identify a personal problem (from a list of 12 problems) that had „bothered them‟ in the previous six months and to indicate whether they had sought help for their problems. Adolescents were also asked about problem characteristics: the perceived seriousness of the problem, the intimacy of the problem, the stigma attached to it and the degree to which factors beyond or under their control had caused the problem.	Socio-demographic characteristics - Gender - Age

Authors	Year	*n*	Sample/Subjects/Informants	Help-seeking assessment goal and measure used	Other variables investigated of relevance to this study
Gould, Munfakh, Lubell, Kleinman, & Parker	2002	219	USA - School based Adolescents - Aged 13 to 19 years (mean age 15.7 years) Adolescent self-report	*Help sought from professional and informal sources, and service attendance* To assess whether adolescents had sought help, the Help-seeking Utilization Questionnaire was used, which was a modification of a measure devised by Offer et al. (1991) to assess adolescents‟ help-seeking behaviour. The Help-seeking Utilisation Questionnaire consisted of 80 items that assessed adolescent‟s use and perceptions of various kinds of treatment services, and help sought from both formal and informal sources (including the internet) during the previous year. Utilisation questions were asked in the context of when adolescents felt “very upset, sad, stressed or angry”.	Socio-demographic characteristics - Gender Depression -Assessed with Beck Hopelessness Scale (BHS) (Beck et al., 1974)
Kataoka, Zhang & Wells	2002	7,898	USA - National Survey of American Families Children and adolescents - Aged 6 to 17 years Self-report for nominated adult respondent in each household, or emancipated minors	*Demonstrated symptomatology, but had not attended a service* Symptomatology was assessed by children obtaining a score above a cut-off of 3 on the Mental Health Indicator (Ehrle & Moore, 1999). This was comprised of selected items of the CBCL. To assess service attendance, adults were asked whether children and adolescents had received any mental health services in the past 12 months.	Socio-demographic characteristics - Ethnicity: Adult respondent reported race of each child, which were categorised as Caucasian, African American, Hispanic or other.
Zwaanswijk, Van der Ende et al.	2003	1,120	Netherlands - Population based sample Adolescents - Aged 11 to 18 years (mean age not provided) Adolescent self report	*Problem recognition, unmet need for help and service attendance* To assess adolescents‟ self-perceived problem recognition, unmet need for professional help and service attendance, adolescents were asked: - whether they perceived themselves to have emotional or behavioural problems; -whether they perceived themselves to have worse emotional and behavioural problems than other adolescents - whether they perceived a need for help for their problems although they had not obtained it; and - whether they received a referral for specialised mental health services.	Socio-demographic characteristics - Gender - Age - Ethnicity: Dutch vs Non-Caucasian or Mediterranean - SES (Parental education level and occupational level) Mental health problems - Assessed with Youth Self Report (YSR) (Achenbach, 1991b)

Authors	Year	*n*	Sample/Subjects/Informants	Help-seeking assessment goal and measure used	Other variables investigated of relevance to this study
Ezpeleta, Granero, De La Olsa, Domenech, & Guillamon	2003	380	Spain - 285 Psychiatric outpatients & 85 Paediatric patients Children & adolescents - Aged 7 to 17 years Parent self-report & adolescent self-report	*Problem recognition and service attendance* Problem recognition and service attendance were determined with three items that ascertained both parents‟ and children‟s perceptions of whether the child had any problems with which they needed help, and parents‟ perceptions of children‟s service attendance (consulted with a professional e.g. counsellor, psychologist, doctor or any other professional person).	Impairment - Children‟s Global Assessment Scale (CGAS) (Shaffer et al., 1983), a uni-dimensional scale that summarised the child‟s level of functioning in a single score. Psychiatric Diagnoses - Diagnostic Interview for Children and Adolescents-Revised (DICA-R) (Reich, Shayka & Taibleson, 1991)
Kodjo & Auinger	2004	3,936	USA - Participants of Wave 1 and Wave 2 of the National Longitudinal Study of Adolescent Health (n=13,750), and who scored in the top third of an emotional distress scale devised by Resnick, Bearman and Blum, 1997. Adolescents - Aged 11 to 21 years Adolescent self report	*Received professional psychological help* To assess whether adolescents received professional psychological help, adolescents were asked if they had received any psychological or emotional counselling in the past year.	Socio-demographic characteristics - Ethnicity: Categorised as African American, Hispanic or Caucasian -Urban area Barriers to health care - Assessed by 10 items with yes or no response Suicidality - Suicidal thoughts, gestures and attempts (specific assessment method not mentioned)
Sears	2004	644	Canada - School based (rural areas only) Adolescents - Aged 12 to 19 years (mean age 15.26 years)	*Problem recognition, need for professional help, and help sought* To assess these help-seeking factors, adolescents were asked whether they had experienced any serious problems (emotional, behavioural or physical) in the past year; adolescents were provided with the following options: i) I have had few or no problems; ii) I have had some problems, but I did not feel I needed professional help; iii) I have had some problems, but I did not seek professional help although I thought I needed it; and iv) I have had some problems and I did seek professional help.	Socio-demographic characteristics - Gender - Age - Parental status - Parental employment status Emotional Adjustment - BDI (Beck & Steer, 1993) - State Trait Anxiety Inventory (STAI) (Spielberger, 1983) - Self-esteem using the 10-item Rosenberg scale (Rosenberg, 1965) Behavioural Adjustment - Adolescents‟ frequency of involvement in substance abuse, school misconduct and antisocial behaviour, adapted from Brown et al. (1996) and Maggs et al. (1995).

Authors	Year	*n*	Sample/Subjects/Informants	Help-seeking assessment goal and measure used	Other variables investigated of relevance to this study
Sheffield et al.	2004	254	Australia - School based Adolescents - Aged 15 to 17 years (mean age 16 years) Adolescent self-report	*Help-seeking intentions* To assess adolescents" help-seeking intentions participants were asked if they were to experience a mental illness or a personal, emotional or behavioural problem in the next 12 months, how likely it was they would seek help from a list of various sources of help. Sources of help were: friends, school counsellor, psychologist, psychiatrist, doctor, church, parents or other family members, teacher, telephone crisis hotline and other.	Socio-demographic characteristics - Gender Help-seeking attitudes -Opinions about Mental Illness scale (OMI) (Cohen & Streuning, 1962) Perceived barriers to Help-seeking - Assessed with a questionnaire which asked participants to indicate what would stop them from seeking help Psychological Distress -Depression Anxiety Distress Scale (DASS-21) (Lovibond & Lovibond, 1995) Degree of Social Support -Assessed with one item that ascertained how much support adolescents received from people they went to when they wanted to talk about any problems (from the potential source list)
Wilson, Rickwood & Deane	2007		Australia Self-report	*Help-seeking intentions* In all three studies, help-seeking intentions were assessed with the GHSQ (Deane et al., 2001). *Quality of prior professional help* Participants were asked if they had ever seen a mental health professional (e.g. counsellor, psychologist, psychiatrist) to get help for personal problems and, if so, they were asked to rate the helpfulness of the visits on a 5-point scale.	Depression - Study 1: Centre for Epidemiologic Studies Depression Scale (CESD) (Radloff, 1977) -Study 2 & 3: Beck Depression Inventory-II (BDI-II) (Beck, Steer & Brown, 1996)
Study 1		1184	Adolescent - Aged 11 to 17 (mean age 13.6 years)		
Study 2		313	Adolescent - Aged 12 to 18 (mean age 15.5 years)		
Study 3		269	Young people - Aged 17 to 24 (mean age 19.2 years)		

Adolescent mental health problems

Adolescence is a significant developmental period marked by considerable change in social, emotional, physical and cognitive functioning (Evans et al., 2005; Schonert-Reichl & Muller, 1996). Adolescents experience substantial change in their roles and interpersonal relationships. For example, they separate from their parents and become more independent, they establish peer relationships and increase identification with peers and they also form intimate relationships (Simmons, Burgeson, Carton-Ford, & Blyth, 1987). They also often experience a significant change in their environment as they transition from primary school to secondary school (Simmons & Blyth, 1987). Adolescence has also been identified as a period when stressful events may occur more frequently (Newcomb, Huba, & Bentler, 1981; Simmons et al., 1987). Adolescents report more negative life events and experience a stronger negative affect to these events, compared to younger children (Larson & Ham, 1993). While many adolescents transition through this developmental period with little difficulty (Offer et al., 1991), the cumulative effect of these significant life changes and events can have a negative impact on some adolescents (Simmons & Blyth, 1987; Simmons et al., 1987). Adolescence is a vulnerable period of development (Schonert-Reichl & Muller, 1996) and it is a key time when mental disorders and health risk behaviours are likely to emerge (Collishaw, Maughan, Goodman, & Pickles, 2004; Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Ferdinand, Stijnen, & Verhulst, 1999; Kessler et al., 2005).

Costello, Egger and Angold (2005) reported the median prevalence estimate of functionally impairing child and adolescent mental disorders as 12%, although estimates vary considerably across studies (Collishaw et al., 2004; Costello et al., 2005; Sawyer et al., 2001; Sawyer et al., 2007; Zwaanswijk, Van der Ende et al., 2003). The Australian

National Mental Health Survey (2001) reported that 13% to 19% of Australian adolescents (aged 13 to17 years; *n*=1,490) had scores in the clinical range of the parent report of the Child Behaviour Check List (CBCL) total problems scale (Achenbach, 1991a) or the Youth Self-Report (YSR) total problems scale (Achenbach, 1991b). Boyd, Gullone, Kostanski, and Ollendick (2000) found that among an Australian school based sample of adolescents (aged 11 to 18 years; *n*=1,299), 14% of the sample were experiencing a significant level of depression as assessed by scoring above the recommended cut-off on the Reynolds Adolescent Depression Scale (RADS; Reynolds, 1986) and 13% were experiencing a significant level of anxiety as assessed by the Revised Children‟s Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1985).

Studies conducted in countries other than Australia have found comparable levels of mental health problems present in adolescents. For example, Fergusson, Horwood, Ridder and Beautrais (2005) found approximately 18% of adolescents recruited as part of the Christchurch Health Study (New Zealand) were classified as having Major Depressive Disorder (MDD) and a further 7% were classified as having sub-threshold depression. Zwaanswijk, Van der Ende et al. (2003) reported that approximately 19% of adolescents (aged 11 to 18 years) from a Dutch national sample had a significant level of mental health problems as assessed by scoring in the abnormal range on the YSR (Achenbach, 1991b).

These studies demonstrate that a substantial proportion of adolescents experience mental health problems. Intervening during adolescence is important, particularly in light of increasing evidence that many lifetime psychiatric disorders have their onset during childhood or adolescence (Costello et al., 2005). Left untreated, mental health problems that onset during adolescence may become entrenched and continue into adulthood. For example, Ferdinand, Stijnen, Verhulst and Van der Reijden (1999) found that specific

CBCL scale scores[1] of adolescents aged 11 to16 years had low to moderate correlations with Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R; American Psychiatric Association [APA], 1987) symptomatology in young adulthood. Similarly, a study conducted by Hofstra, Van der Ende and Verhulst (2000) reported that 41% of Dutch children and adolescents aged 4 to 18 years who scored in the abnormal range on the CBCL at the initial assessment, also scored in the abnormal range on the Young Adult Behaviour Checklist (YABCL) (Achenbach, 1997) at a 14-year follow up. Fergusson et al. (2005) reported that in a sample of adolescents aged 17 to 18 years (*n*=1265), receiving a diagnosis of Major Depressive Disorder (MDD) was significantly associated with depressive symptoms, major depression, treatment for depression, anxiety disorder, treatment for anxiety disorder, suicidal ideation and suicide attempts at age 21 and 25. Costello et al. (2003) assessed three cohorts of children (*n*=1,420) from 11 counties in North Carolina up to eight times between 1993 and 2000. These children were aged 9, 11 and 13 years at the beginning of the study and were assessed for psychiatric disorder using the Child and Adolescent Psychiatric Assessment interview (Angold et al., 1995). Results indicated that children with a history of psychiatric disorder were three times more likely to have a diagnosis at any subsequent wave compared to children with no disorder. In an examination of the lifetime prevalence and age of onset of anxiety disorders, mood disorders, impulse-control disorders and substance disorders (from the Diagnostic and Statistical Manual of Mental Disorders IV [DSM-IV]) (American Psychiatric Association, 1994), Kessler et al. (2005) reported that half of all lifetime cases had their onset by the age of 14 years and three quarters by the age of 24 years.

The mental disorders that commonly onset during adolescence (e.g., major depressive disorder and Anxiety disorder) are among those ranked highest in the World Health

[1] Withdrawn, Anxious/Depressed, Somatic Complaints, Social Problems and Thought Problems.

Organization‟s (WHO) estimates of the global burden of disease as assessed with the Disability-Adjusted Life Years (DALYs; Australian Institute of Health and Welfare [AIHW], 2007). In 2003, mental disorders were reported to comprise half of the disease burden (assessed with DALYs) for young Australians aged 15 to 24 years, with anxiety and depression found as the leading causes of burden (AIHW, 2007).

Children and adolescents with mental health problems are likely to benefit from receiving treatment (Kazdin, 1990), as indicated by two meta-analyses of the child psychotherapy literature (Casey & Berman, 1985; Weisz, Weiss, Alicke, & Klotz, 1987). The meta-analysis conducted by Casey and Berman included 75 studies published between 1952 to 1983 examining the effect of receiving psychological treatment (e.g., psychodynamic, client centred, behavioural therapies and cognitive behavioural treatments) for children and adolescents aged 3 to 15 years with a wide range of mental health problems. They found that children and adolescents who received therapy had better outcomes than children and adolescents who did not receive therapy.

Consistent with these findings, the results of a meta-analysis conducted by Weisz et al. (1987) of 100 studies of children and adolescents aged 4 to 18 years reported children and adolescents benefited from receiving treatment and that benefits at follow up (approximately 5 to 6 months after treatment) were comparable to the benefits found at post treatment. Furthermore, a study of help-seeking by parents on behalf of children and adolescents aged 3 to 15 years (n=1,037) with behaviour problems assessed with the Rutter Child Scale A and B (Rutter, Tizzard, & Whitmore, 1970) found that attending professional services was associated with better outcomes for children and adolescents up to five years after children had attended services (Feehan, McGee, & Stanton, 1993). Despite the reported benefits of obtaining professional help (Feehan et al., 1993; Kazdin,

2000; Weisz et al., 1995), adolescents with mental health problems rarely attend services (Rickwood & Braithwaite, 1994; Sawyer et al., 2001; Sawyer et al., 2007; Zwaanswijk, Van der Ende et al., 2003).

Service attendance for mental health problems

There is substantial evidence that many adolescents who meet the criteria for psychiatric disorder do not attend services (Rickwood & Braithwaite, 1994; Sawyer et al., 2001; Sawyer et al., 2007; Zwaanswijk, Van der Ende et al., 2003). For example, in a nationally representative sample of Australian adolescents, only 31% of adolescents who scored above the recommend cut-off score on the parent report of the CBCL Total Problems scale and only 20% of adolescents who scored above the recommended cut-off score on the YSR Total Problems scale had attended a service to obtain professional help for emotional or behavioural problems in the preceding six months (Sawyer et al., 2007). Zwaanswijk, Van der Ende et al. (2003) found that of the 209 Dutch adolescents aged 11 to 18 years who had scored above the recommended cut-off on the YSR Total Problems scale, only 8% reported they had been referred for mental health services. The proportions reported by these studies differ, possibly due to differences in service provision in the countries in which the studies were conducted and methodological differences between the studies, i.e., one assessed that rate at which adolescents" attended services and the other assessed the rate at which adolescents were referred to services. Nonetheless, these studies demonstrate there is a large discrepancy between the proportion of adolescents who are experiencing mental health problems and those who receive professional help or attend services, or are referred to mental health services (Sawyer et al., 2001; Sawyer et al., 2007; Verhulst & Van der Ende, 1997; Zwaanswijk, Van der Ende et al., 2003). A better understanding of adolescent

help seeking and the factors that are associated with adolescent help seeking is needed to provide insight into why only a minority of adolescents attend services.

Conceptualisations of adolescent help-seeking and approaches to assessment

Research into adolescent help seeking is made difficult by the lack of a consistent theory or definition of adolescent help seeking to guide investigation and assessment. Few researchers in this area have endeavoured to define adolescent help-seeking behaviour for mental health problems (Rickwood et al., 2005; Srebnik et al., 1996). Rickwood et al. defined help-seeking behaviour as "actively seeking help from other people" (p.4), which can be sought from "informal" or "formal" sources. Informal sources of help included friends and family, whereas formal or professional sources included those who have a recognised role and appropriate training in providing help and advice (e.g., mental health and health professionals, teachers, youth workers and clergy). Rickwood et al. also noted that adolescent help seeking does not require face to face contact, but includes help-seeking from sources such as the internet, posters and pamphlets.

Srebnik et al. (1996) defined adolescent help seeking for mental health problems as "seeking assistance from mental health services, other formal services, or informal support sources for the purpose of resolving emotional or behavioural problems"(p.210). They defined children"s help-seeking behaviour as efforts to obtain help made either by children themselves or by their parents on behalf of their children. This highlights another difficulty associated with adolescent help-seeking behaviour research, i.e., the possible role that parents may play in seeking help on their adolescents" behalf.

A limitation with parent reports of adolescent help seeking is that the increasing autonomy and independence of adolescents may limit parents" knowledge of adolescents" mental

health problems and their help-seeking and modify their levels of involvement. While parents may play an important role in facilitating adolescents‟ access to care (Logan & King, 2001), the subjective perception of adolescents and their own experience is likely a key element in initiating the help-seeking behaviour process. Parents may detect changes in adolescents‟ external behaviour and a marked mood disturbance; however, internalising problems that manifest in subtle mood and behavioural changes may be less often noticed by parents or teachers. This is supported by Cohen, Kasen, Brook and Streuning (1991), who found there was a higher level of consultation between parents and mental health professionals for adolescents with diagnoses of Conduct Disorder (CD) and Oppositional Defiant Disorder (ODD) compared to the other DSM-III-R mental disorder diagnoses. Given the nature of externalising disorders, it is likely that adolescents with ODD or CD were more disruptive and therefore more frequently recognised by parents as having problems than adolescents with symptoms of internalising disorders. If adolescents‟ mental health problems are not observable by significant others (e.g., parents or other adults), adolescents may be less likely to be receive assistance in seeking help. In these situations, adolescents‟ ability and willingness to recognise and report problems to others is a key element in initiating the help-seeking process.

Sawyer and Patton (2000) identified adolescents‟ subjective perception as important to the help-seeking process. They suggest that many studies have defined adolescents “in need” as being those with symptoms that meet diagnostic criteria for mental disorders (i.e., those defined in the DSM-IV). However, many childhood mental health problems lie on a continuum; therefore, this approach of categorising children as either having “a disorder” versus “no disorder” does not accurately describe the full extent of childhood mental health problems. Stallard (1993) suggested that the use of symptom checklists to identify children with problems may neglect individuals with severe problems in one specific area who only

score highly on a small number of items and do not obtain an overall score high enough to meet recommended cut-off scores. Furthermore, the presence of symptoms that meet diagnostic criteria for mental disorder or scoring above a recommended cut-off on a screening tool does not necessarily indicate that parents or adolescents believe there is a need for professional help. As such, even when symptoms are present they may not seek professional help until such a need is recognised. By defining the existence of problems and need for help on the basis of whether adolescents meet diagnostic criteria for mental health problems, studies may overlook the subjective perception of need and exclude those individuals who may consider themselves to be in need, but whose problems do not meet a formal diagnostic criteria. It seems unlikely that help-seeking will begin until there has been some acknowledgement by the adolescent that a problem exists for which formal or informal help may assist.

Adolescents‟ subjective assessment of the extent and nature of their problems, their perceived need for help and their appraisal of the potential benefits of formal and informal help are all important parts of the help-seeking process. However, as shown in the following review, many studies do not consider these factors in their assessment of adolescents‟ help-seeking behaviour.

Assessing adolescent help-seeking

Studies that have examined adolescent help-seeking have relied on a range of different indicators to assess help-seeking. These have included:

i)the assessment of help-seeking as a one-step process by examining the rate at which adolescents seek help or attend services (Barker & Adelman, 1994; Barnes et al.,

2001; Boldero & Fallon, 1995; Fallon & Bowles, 2001; Rickwood & Braithwaite, 1994; Schonert-Reichl & Muller, 1996);

ii) the assessment of adolescents‟ help-seeking intentions and willingness to seek help (Carlton & Deane, 2000; Deane et al., 2001; Raviv et al., 2000); and

iii) the assessment of adolescents‟ participation in stages of help-seeking behaviour (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003).

The following section describes each of these approaches and the advantages and disadvantages of each approach. The reader is reminded that, to avoid repetition, details of each of the key studies in this review are only described when they are first cited in the literature review. When each study is subsequently described the reader is directed to Table 1.3, which provides detailed information on the sample and the methods used to assess help seeking behaviour and other measures used in each of these studies.

Adolescent help-seeking assessed as intention or willingness to seek help

Adolescents‟ intentions and willingness to obtain help are commonly used as an indication of adolescents‟ help-seeking patterns. However, studies that use intentions as an indication of behaviour rely on the assumption that there is a strong association between intentions and behaviour. According to the Theory of Planned Behaviour (Ajzen, 1991), an extension of the Theory of Reasoned Action (Fishbein & Ajzen, 1975), a key determinant of behaviour is a person‟s behavioural intention. In this context, intentions are considered as a function of attitude towards performing the behaviour, the perceived norms governing the performance of the behaviour and the individual‟s self efficacy. Fishbein (2000) later postulated an integrative model (IM) of behavioural prediction. Whilst this model still regarded intention as the primary predictor of behaviour, it recognises that intentions are

not the sole determinant of behaviour and considered other factors, e.g., lack of skills or abilities and/or environmental restraints; factors that may prevent intentions from transferring into action.

An advantage of studying intentions is that it permits the assessment of help-seeking intentions among adolescents who may not have experienced mental health problems. Furthermore, even among adolescents who have experienced mental health problems, the problems that adolescents experience greatly differ both in the type of problem and the severity of problems. When assessing intentions, researchers can describe the nature of the specific problems to adolescents and ask what they would do if they experienced the particular problem, thus gauging the possible responses of a large number of adolescents to the same problem.

A limitation of this approach is that studies have found only small to moderate associations between help-seeking intentions and behaviour. For example, Raviv et al. (2000) examined the association between Israeli adolescents‟ (mean age of 15.8 years; *n*=512) help-seeking intentions for minor and severe problems from friends, parents, psychologist, counsellor and teacher with their past help-seeking behaviour from these same sources of help. While they found a significant correlation between help-seeking intentions and past help-seeking behaviour for both problem types and all sources of help, Spearman rank correlations ranged from weak to moderate (r_s=0.12 - 0.45). Correlations were found to be higher for friends (r_s=0.32 - 0.44) and parents (r_s=0.25 -0.45) and quite low for psychologists (r_s=0.13 - 0.18).

Wilson, Deane, Ciarrochi and Rickwood (2005) similarly sought to validate the General Help Seeking Questionnaire (Deane et al., 2001) by examining the associations between Australian adolescents‟ help-seeking intentions (*n*=218; mean age of 16 years) for

personal-emotional problems and suicidal thoughts with their future help-seeking behaviour over a three-week period. They found only low to moderate correlations between help-seeking intentions and future help-seeking behaviour for personal-emotional problems (r=.10 to r=.48) and suicidal thoughts (r=.04 to r=.26).

While assessing adolescents‟ help-seeking intentions may provide a valuable insight into possible future behaviour, these intentions are only an indicator and not a direct assessment of actual behaviour. Furthermore, despite the many advantages of assessing behavioural intentions, the approach of describing problems when assessing intentions means that adolescents have been told that a problem exists, rather than coming to their own realisation they have emotional or behavioural problems from the symptoms they experience. However, the initial awareness and recognition of problems is an important part of the help-seeking process that needs to be examined in its natural state (Cauce et al., 2002; Srebnik et al., 1996; Zwaanswijk, Verhaak et al., 2003).

Assessment of adolescent help seeking as a one-step process

Many studies have conceptualised help seeking as a one-step process using one behavioural indicator to assess help seeking. Indicators have included the rate at which adolescents seek help from different sources, such as professionals and informal sources (Barnes et al., 2001; Boldero & Fallon, 1995; Fallon & Bowles, 2001; Schonert-Reichl & Muller, 1996), and the rate at which adolescents attend services (Gasquet et al., 1997; Gould et al., 2002; Kodjo & Auinger, 2004; Laitinen-Krispijn, Van der Ende, Wierdsma, & Verhulst, 1999).

While these studies provide useful information about the characteristics of adolescents who do or do not attend services or seek help from informal or professional sources, seeking help and attending services is only one part of the help-seeking process (Cauce et al., 2002;

Saunders et al., 1994; Sears, 2004; Srebnik et al., 1996; Zwaanswijk, Van der Ende et al., 2003). Contrasting adolescents who sought help or attended services with those who did not provides little insight into the overall process of help-seeking for mental health problems, as it bypasses adolescents who may be at the initial stages of help-seeking. Furthermore, seeking help does not necessarily indicate that help was actually received.

Srebnik et al. (1996) noted that it is fundamental to understand the process by which children and adolescents seek and obtain mental health services, later described by Logan and King (2001) as a „process-oriented model of service seeking" (p.319). Help-seeking models that have conceptualised adolescent help seeking in stages and the studies that have assessed help-seeking based on these conceptualisations will be described in the next section.

Adolescent help-seeking as stages of behaviour

While many conceptual models of adolescent help seeking have been postulated (Andersen, 1995; Andersen & Newman, 1973; Cauce et al., 2002; Kessler et al., 1981; Logan & King, 2001; Rickwood et al., 2005; Srebnik et al., 1996; Verhulst & Koot, 1992; Zwaanswijk, Verhaak et al., 2003), only a few studies have based their assessment of help-seeking on a process-orientated conceptualisation, that is, stages adolescents may progress through when seeking professional help (Ezpeleta et al., 2003; Saunders et al., 1994; Sears, 2004; Verhulst & Van der Ende, 1997; Zwaanswijk, Van der Ende et al., 2003). Furthermore, even fewer have focused exclusively on adolescents' subjective perceptions of their help-seeking behaviour (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003).

Conceptual models of help-seeking behaviour have attempted to encapsulate the process through which children and adolescents progress when seeking help for mental health problems (Andersen, 1995; Andersen & Newman, 1973; Cauce et al., 2002; Kessler et al., 1981; Logan & King, 2001; Rickwood et al., 2005; Srebnik et al., 1996; Verhulst & Koot, 1992; Zwaanswijk, Verhaak et al., 2003). The conceptualisation of help-seeking behaviour as a process assumes that help-seeking begins when there is awareness and acknowledgment that a problem exists, thus the process begins before adolescents have their first contact with mental health services (Cauce et al., 2002). This initial stage of the help-seeking process is bypassed by studies that assess help-seeking by assessing service attendance or whether help was sought from various sources. Once adolescents have recognised they have problems, they likely appraise the severity of their problems and make a decision about whether professional help is warranted.

To date, conceptual process models of adolescent help seeking have not been empirically tested and are only descriptive and not a representation of an actual temporal process (Andersen, 1995; Andersen & Newman, 1973; Cauce et al., 2002; Kessler et al., 1981; Logan & King, 2001; Rickwood et al., 2005; Srebnik et al., 1996; Verhulst & Koot, 1992; Zwaanswijk, Verhaak et al., 2003). Nonetheless, such models provide a useful framework for understanding and assessing adolescent help seeking, although to date, few studies have based their assessment of adolescent help seeking on these models.

Much of the current work in the field of help-seeking has been adapted and developed from a model originally developed by Andersen in the late 1960s (Andersen, 1995; Andersen & Newman, 1973; Cauce et al., 2002; Srebnik et al., 1996). Andersen‟s Socio-Behavioural model was devised to explain why families use health services, however his subsequent work shifted the focus to the individual.

The model suggests use of health services is a function of an individual‟s:

i) Predisposition to use services (Predisposing Characteristics);

ii) Factors that enable or hinder use (Enabling Factors); and

iii) Need for Care (Perceived need and Evaluated need).

The *Predisposing Characteristics* within the context of this model were biological factors (e.g., age and gender), social structure (factors that affect the ability to cope with problems and to obtain resources to deal with these problems and health of the physical environment such as ethnicity, education and occupation) and health beliefs (the attitudes, values and knowledge that people have about health and health services). The *Enabling Factors* consisted of community and personal or family factors such as social relationships, availability of facilities and whether individuals had the means to obtain such facilities (e.g., income and health insurance are indicators of these factors). Need for Care consisted of both a perceived need (an individual‟s subjective perception of need) and an evaluated need (the clinician or expert‟s objective evaluation of need). Andersen emphasised the role of perceived need in his model. He acknowledged that the way in which individuals view their own health and functional state, in addition to how they personally experience symptoms of illness, has a marked effect on whether they appraise their problems as warranting professional help. Evaluated need represents a professional and objective judgement about people‟s health status and their need for medical care.

This work has been adapted in subsequent research examining children‟s help-seeking. For example, Srebnik et al. (1996) postulated a pathway model of children‟s help seeking and service utilisation for emotional and behavioural problems based on Goldsmith, Jackson and Hough‟s (1988) reformulation of Andersen and Newman‟s work and previous work by

Pescosolido (1992). This model focussed more on the process of seeking help for both children and adolescents. The basic stages of the model described by Srebnik et al. (1996) were:

i) Problem Recognition;

ii) Decision to seek help; and

iii) Use of support network and service utilisation patterns.

Srebnik et al. (1996) postulated a general progression of the model, beginning with problem recognition, moving to the decision to seek help and then the use of informal or formal sources of help (service attendance). Consistent with previous researchers (Andersen & Newman, 1973; Goldsmith et al., 1988), Srebnik et al. suggested that progression through these stages was influenced by various factors conceptualised as Illness Profile Variables, Predisposing Characteristics and Barriers/Facilitators.

Within the context of their model, *Illness Profile* described clinically assessed need identified by a clinician or a diagnostic tool, subjectively perceived need, and family characteristics (such as structural and relational characteristics). *Predisposing Characteristics* were described as influencing adolescents" readiness to seek help and consisted of demographic variables (age, gender, ethnicity), socio-cultural values/beliefs, coping strategies, help-seeking desirability and religious orientation. *Barriers/Facilitators* consisted of community and social networks, economic factors, actual service characteristics and existing policy. Srebnik et al. (1996) noted the need for further research into the interplay between these factors, given the likelihood of correlations between the factors and the possibility that they exert influence at more than one point of the model.

In Cauce et al.‟s (2002) later revision of the model, the basic direction of progression through the help-seeking stages remained (problem recognition to decision to seek help to service selection); however, Cauce et al. acknowledged that help-seeking rarely occurred in such a sequential manner. In addition, they expanded the model to take into account the influence of ethnicity, culture and context as influencing factors.

Saunders et al. (1994) and Sears (2004) conceptualised adolescents‟ help-seeking behaviour based on previous work that Kessler et al. (1981) had conducted with adults. These authors‟ stages of adolescent help-seeking behaviour consisted of:

i) Recognition of an emotional or behavioural problem;

ii) Decision that professional help was needed; and

iii) Seeking professional help.

The model of help-seeking adapted by Saunders et al. (1994) and Sears (2004) differed from that of previous researchers (Cauce et al., 2002; Srebnik et al., 1996), as the final stage did not focus on service attendance and use of informal sources, but on whether adolescents sought professional help.

In contrast to the previously described conceptualisations of adolescent help seeking that have focussed on adolescents‟ subjective perception of problems and need for help (Srebnik et al., 1996; Cauce et al., 2002; Saunders et al., 1994; Sears, 2004), Zwaanswijk, Verhaak et al. (2003) based their work on that of Verhulst and Koot (1992) and focused on parents‟ attempts to obtain help on behalf of their children. The model had a strong focus on the role of the family doctor as the gateway to accessing mental health care, as general

practice is a common entry point to mental health care in the United Kingdom and Netherlands (Zwaanswijk, Van der ende, Verhaak, Bensing, & Verhulst, 2005).

Zwaanswijk, Verhaak et al. (2003) conceptualised help-seeking for child and adolescent psychopathology as consisting of four levels:

i) Parental recognition of problems and subsequent decision to consult a GP;

ii) Recognition of problems by the GP;

iii) The GP"s decision to refer the child/adolescent to psychiatric care; and

iv) Referral to inpatient psychiatric care.

The types of problem and severity of problems experienced by children were identified as influences on problem recognition by parents and family doctors. Awareness of problem, distress threshold, personality, psychopathology, attitudes and beliefs, education level, support from extended family and psychosocial family stress were identified as parent and family influences on parental problem recognition. In addition, child characteristics such as gender and age were considered to exert influence on parental recognition.

Although there were differences in the focus of this model compared to the previously mentioned models of help-seeking, i.e., a focus on parents" and GPs" perceptions versus a focus on adolescents" perceptions, each of these models share the common features of a stage of problem recognition, a stage of appraisal (a decision is made about whether help is needed) and a stage of obtaining and receiving professional help.

Rickwood et al. (2005) have suggested that most models of help-seeking behaviour are descriptive rather than explanatory as they describe the pathways to services, but do not

explain why people attain services via different pathways. They also suggested that most models have a major focus on the social and economic factors that affect access to services and pay less attention to micro-level influences such as individual and psychological factors. To address this issue, Rickwood et al. conceptualised help-seeking behaviour as a social transaction: the process of actively seeking out and using social relationships to help with mental health problems. From this, they developed a process model of help seeking that consisted of four stages:

i) Awareness of symptoms and appraisal of having a problem that may require intervention;

ii) Expression of symptoms and need for support (articulating the symptoms experienced and the need that was felt to others);

iii) Availability of sources of help; and

iv) An individual‟s willingness to seek out and disclose to sources.

The first stage of this model is analogous to the first and second stages of the earlier models (Cauce et al., 2002; Kessler et al., 1981; Srebnik et al., 1996; Zwaanswijk, Verhaak et al., 2003). It focuses on problem recognition or awareness and whether help is warranted (appraisal of the problem). The next stage focuses on the conceptualisation of help-seeking behaviour as a social transaction: an individual‟s ability to communicate their symptoms and need to others. The next stage of the model focuses on external factors (the availability of sources of help) and the final stage focuses on the individual‟s willingness to seek out help and disclose to that source.

Within the context of this model, the factors considered to influence help-seeking were those that affect individuals‟ ability to express and articulate problems to others and those that affect their willingness to disclose to other people. From a review of the help-seeking literature, Rickwood et al. (2005) identified lack of emotional competence, negative attitudes and beliefs about seeking professional help and help-negation[2] as barriers to seeking help. Conversely, emotional competence, social influences/established social relationships, positive attitudes, past experience and mental health literacy were cited as facilitators to seeking help.

In general, the conceptualisation of adolescent help seeking as stages of behaviour allows a more in depth examination of adolescents who may be at different stages of help-seeking and the factors that may be associated with their progression through these stages. However, to date, few empirical studies have examined adolescent help seeking conceptualised as a series of stages (Ezpeleta et al., 2003; Saunders et al., 1994; Sears, 2004; Verhulst & Van der Ende, 1997; Zwaanswijk, Van der Ende et al., 2003) and even fewer have focussed on adolescents‟ perceptions of their problems and their need for help (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003).

Given that studies of adolescent help seeking have used a number of different indicators to assess help-seeking (e.g., service attendance, help-seeking intentions, help sought), they are often assessing different elements of adolescent help seeking, which may have led to inconsistent findings. Despite these differences, some consistent patterns of adolescent help seeking can be identified from the literature. The following section reports these patterns of adolescent help seeking in two parts. First, the overall broad patterns of help-seeking are

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[2] “Help-negation” was defined as in Rudd, Joiner and Rajab (1995) as “the refusal to accept or access available helping resources as a likely function or manifestation of patient hopelessness, pessimism and cynicism regarding the efficacy of treatment” (p.499).

reported. For example, the rate at which adolescents perceived they had emotional and behavioural problems and/or a need for professional help and the rate at which adolescents have sought help and attended services are reported. In addition, adolescents‟ preferences for different sources of help and their preference for seeking help for different types of problems are reported. The commonly cited barriers and facilitators to adolescent help seeking are also reported. Second, results of studies that have examined specific associations between adolescents‟ socio-demographic, psychological and psychosocial characteristics with different indicators of help-seeking behaviour are described. The reader is reminded that the details of each of the key studies in this review are only described when they are first cited in the literature review and more detailed information on the sample and the methods used to assess help seeking behaviour and other measures used in each of these studies is available from Table 1.3.

Part I: Broad patterns of help-seeking behaviour

Rates of help-seeking behaviour

While adolescents commonly report that they have a wide range of problems, only a small proportion report seeking help for their problems (Boldero & Fallon, 1995; Fallon & Bowles, 2001). For example, Boldero and Fallon (1995) found that while Australian adolescents aged 11 to 18 years (n=1,013) reported that they had a range of problems that had caused them considerable distress in the past six months[3], less than half reported that they had sought help. Consistent with these results, Fallon and Bowles (2001) found that only 58% of Australian adolescents (n=196)[4] had sought help for a range of problems[5], that

[3] i.e., problems with family (25.5%), interpersonal problems (19.5%), health problems (18.1%) and education issues (16.7%).
[4] The mean age of adolescents in this study ranged from 12.4 years to 16.4 years for three different groups of adolescents in the study.

had "bothered them" in the previous six months. It appears that perceiving the presence of problems is not always a sufficient prompt to seek professional help.

Studies that have assessed help seeking as a series of stages have found that, even when adolescents perceived themselves to have problems *and* a need professional help for their problems, they have rarely sought help and/or attended services (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). For example, Saunders et al. examined American adolescents" help-seeking (*n*=17,143; aged 13 to 18 years) from professional sources. They asked adolescents if they had any serious personal, emotional, behavioural or mental health problems for which they felt they needed help during the past year. Table 1.4 shows the proportion of adolescents who endorsed each available option.

Table 1.4
The help-seeking behaviour of adolescents aged 13 to 18 years

Response to help-seeking question	Percentage of adolescents who endorsed each option (*n*=17,143)	
I have had few or no personal problems	75%	
I have had (or have now) severe problems but have not felt I needed professional help	12%	
Yes, but I did not seek professional help	7%	} 13% perceived a need for professional help
Yes, and I did seek professional help	6%	

Note. Adapted from Saunders et al. (1994).

Overall, 25% of adolescents from this study reported they had experienced serious personal, emotional, behavioural or mental health problems and 13% identified a need for professional help with these problems. However, despite recognising a need for professional help, less than half of these (6%) reported they had sought professional help.

[5] i.e., family problems (35%), relationship problems (19%), health problems (18%), education problems (15%) and financial-legal problems (13%).

Sears (2004) examined Canadian adolescents' (*n*=644; aged 12 to 18 years) help-seeking behaviour by asking whether they had any serious emotional, behavioural, or physical problems in the past year. The percentages of adolescents who endorsed each option for this question are shown in Table 1.5.

Table 1.5
The help-seeking behaviour of adolescents aged 12 to 18 years

Response to help-seeking question	Percentage of adolescents who endorsed each option (*n*=644)	
I have had few or no problems	53%	
I have had some problems, but I did not feel I needed professional help	32%	
I have had some problems, but I did not seek professional help although I thought I needed it	8%	} 15% perceived a need for professional help
I have had some problems and I did seek professional help	7%	

Note. Adapted from Sears (2004).

It is evident from Table 1.5 that 47% of adolescents reported having "serious problems" in the past year and 15% perceived a need for professional help with their problems, however, only 7% had actually sought professional help. These results largely replicated findings of Saunders et al. (1994), with the exception of problem perception, which was higher in the study conducted by Sears (2004). This is likely due to the inclusion of physical problems in Sears' measure in addition to emotional and behavioural problems, as the measure employed by Saunders et al. assessed adolescents' perceptions they had emotional, behavioural or mental health problems only.

Zwaanswijk, Van der Ende et al. (2003) examined Dutch adolescents' (aged 11 to 18 years; *n*=1,220) perceptions of help-seeking using several stages of behaviour. These stages generally reflected similar stages of behaviour to those in the studies of Saunders et al. (1994) and Sears (2004) with the exception of the final stage. Sears and Saunders et al. both assessed adolescents' reports of whether they sought professional help, whereas Zwaanswijk, Van der Ende et al. assessed adolescents' reports of whether they received a referral for specialised mental health services, although they did not assess from whom the referral was received. The percentages of adolescents who endorsed each of the help-seeking behaviours are available from Table 1.6.

Table 1.6
The help-seeking behaviour of adolescents aged 11 to 18 years

Help-seeking behaviours assessed by the study	Percentage of adolescents who endorsed each option (*n*=1220)
Having an emotional or behavioural problem	38%
Having problems more serious than other adolescents' problems	11%
Need for professional help without having obtained it (self-perceived unmet need)	4%
Receiving a referral for specialised mental health services	3%

Note. Adapted from Zwaanswijk, Van der Ende et al. (2003).

Among the 38% of adolescents who perceived they had an emotional or behavioural problem, only 6% reported they had been referred for specialised mental health services. Furthermore, among the 11% of adolescents who reported having an emotional or behavioural problem that they perceived as worse than other adolescents, 18% reported they received a referral for specialised mental health services. These results suggest that the adolescents who perceived their problems as more severe than their peers were more likely

to receive a referral for mental health services. Although the proportion of adolescents who reported experiencing problems (emotional, behavioural, mental health or physical) ranged from 25% to 47% across the three studies, likely reflecting methodological differences and differences in assessment, it is still noteworthy that one quarter to almost a half of adolescents reported they had problems.

The percentage of adolescents who received a referral for specialised mental health services was slightly lower than the proportions of adolescents who reported they sought professional help in the studies conducted by Saunders et al. (1994) and Sears (2004). As previously mentioned, Saunders et al. and Sears assessed whether adolescents sought professional help, whereas Zwaanswijk, Van der Ende et al. assessed whether adolescents received a referral for specialised mental health services, which likely accounts for these differences in results. There are limitations to both of these approaches in the assessment of whether adolescents successfully attained or received effective help. The assessment of whether adolescents received a referral for mental health services cannot determine whether the adolescent actually attended services and it also restricts the assessment of help- seeking to one particular source. Conversely, the assessment of whether adolescents sought professional help also cannot determine if appropriate help was received by the adolescent, or from where the help had been sought. Despite the limitations of these approaches, the results of these studies show that adolescents‟ self-perceived problem recognition and perceiving a need for professional help does not necessarily translate into seeking professional help or receiving a referral for mental health services; and only a small proportion of adolescents seek professional help or receive a referral to mental health services despite the acknowledgement of problems and/or the need for professional help.

Adolescents' preference for specific sources of help

Results from several studies of help-seeking intentions indicate that adolescents have a greater willingness to seek help from their peers compared to other sources of help, such as adults or professional sources of help. Wintre and Crowley (1993) found that Canadian adolescents aged 13 to 18 years (*n*=247) reported a preference to consult a familiar peer or peer expert rather than a familiar adult or adult expert for help with impersonal problems, interpersonal problems with peers and interpersonal problems with parents. Consistent with these findings, Raviv et al. (2000) reported that friends were the preferred source of help for adolescents, rather than parents, psychologists, school counsellors and teachers, for a minor hypothetical problem and a severe hypothetical problem. Furthermore, they found this pattern was consistent for adolescents" willingness to seek help for themselves and also for their willingness to refer others for help. Deane et al. (2001) similarly found that young Australian adults (*n*=320; mean age = 20.6 years) were most likely to seek help from friends for personal-emotional problems, anxiety-depression problems and suicidal thoughts, as compared to other sources of help.

Consistent with these studies of adolescents" help-seeking intentions, the results of several studies indicate that adolescents: i) more often seek help from informal sources than professional sources; and ii) more often seek help from friends than all other sources. For example, Rickwood and Braithwaite (1994) found that among the 68% of Australian adolescents (*n*=715; mean age = 17.4 years) in their sample that reported they had sought help for a psychological problem within the last 12 weeks, only 14% reported seeking help from a professional source (family doctor, mental health service or educational help service); whereas 86% reported seeking help from an informal social network (friend or family). Boldero and Fallon (1995) found that among the adolescents who reported they

had problems that had caused them considerable distress in the past six months, adolescents sought help from friends (40%) and parents (35%) more often than they had sought help from a doctor, counsellor or teacher (11% to 12%). Schonert-Reichl and Muller (1996) found among their sample of 231 adolescents aged 13 to 18 years that adolescents had often sought help for an emotional or personal problem within the last year from more than one source of help. However, most often they had sought help from friends (81%), followed by mothers (59%), professionals[6] (44%) and then fathers (35%). Gould et al. (2002) found that 18% of adolescents used the internet as a means to seek help when they felt „very upset, sad, stressed or angry". This proportion was comparable to the proportion who reported they sought help from a mental health professional (21%) or school counsellor (22%). However, each of these proportions was significantly lower than the proportion of adolescents who sought help from informal sources of help, e.g., friends (91%), siblings (61%) and teachers (30%).

It is noteworthy that the proportion of adolescents seeking help from professionals greatly differed between these studies (Boldero & Fallon, 1995; Gould et al., 2002; Rickwood, 1995; Schonert-Reichl & Muller, 1996). This is largely due to differences in the professional sources of help assessed by each study. For example, Schonert-Reichl and Muller assessed adolescents" help-seeking from a broad range of services (e.g., clergy, the police or a team coach), which explains the large proportion of adolescents (41%) who reported they had received professional help found by this study. In contrast, other studies that found approximately 10% to 20% of adolescents sought help from professionals assessed adolescents" help seeking from a more limited range of professional sources

[6] Professionals included teacher, school counsellor, school psychologist, team coach, principal/vice principal, adolescent counselling agency, alcohol or drug abuse program, crisis hotline, social worker, psychologist, psychiatrist, minister/priest/rabbi and police.

(Barker & Adelman, 1994; Boldero & Fallon, 1995; Rickwood & Braithwaite, 1994).

Despite the methodological differences between these studies, adolescents‟ preference for seeking help from friends over other sources of help was consistently found across studies. These results are consistent with many of the social changes and changes in interpersonal relationships that occur during the developmental period of adolescence. During this period, adolescents develop strong interpersonal relationships and increase their identification with their peers; at the same time, they are less involved with their parents and increase their independence and autonomy (Simmons & Blyth, 1987; Simmons et al., 1987).

A concern with this pattern of behaviour is that adolescents‟ peers are generally not equipped to deal with problems of a severe psychological nature. For example, Kelly, Jorm & Rodgers (2006) found that only 23% of an Australian sample of adolescents (*n*=1,137) reported they would engage an adult (e.g., parent, teacher or school counsellor) to help with a friend who was experiencing a range of symptoms (reflective of either conduct disorder or depression). Furthermore, 53% reported that positive social support was the only action they would engage in to help their friend and approximately 20% reported they would take no appropriate actions to assist their friend. Therefore, these results suggest that seeking assistance from peers is unlikely to result in the receipt of appropriate help.

Severity of problems and help-seeking

Although it may seem self-evident, another pattern of help-seeking that has consistently been found is that adolescents have a greater willingness to seek help for severe problems compared to less severe problems or minor problems (Carlton & Deane, 2000; Deane et al., 2001; Raviv et al., 2000). For example, Carlton and Deane found that in a school based

sample of New Zealand adolescents (*n*=221) aged 14 to18 years (mean age 15.63), adolescents were significantly more likely to seek help (from both informal and formal sources of help) for suicidal thoughts than for a personal-emotional problem. Furthermore, Deane et al. found that adolescents were more likely to seek help from mental health professionals and telephone help-lines for suicidal ideation, compared to the other types of problems (anxious-depressed or personal-emotional problems). Raviv et al. found that, overall, adolescents were more willing to seek help for themselves and also to refer someone else for help from professional and informal sources for a severe problem than a minor problem.

In contrast to the aforementioned studies (Carlton & Deane, 2000; Deane et al., 2001; Raviv et al., 2000), Boldero and Fallon (1995) found that help-seeking did not vary with adolescents‟ perceptions of problem characteristics, such as perceived seriousness of the problem, stigma attached to the problem, perceived intimacy of the problem and perceived locus of control of the problem. In a later study, Fallon and Bowles (2001) found that neither problem type (e.g., a personal problem with family, relationships, health, education and financial-legal problems) nor problem characteristics (adolescents‟ perceived seriousness of the problem, stigma attached to the problem, perceived intimacy of the problem and locus of control of the problem) were associated with help-seeking behaviour.

The inconsistency in these results may be due to differences in assessment between these studies. For example, the severity of problems that were assessed ranged from minor personal-emotional problems (e.g., simple relationship issues) (Boldero & Fallon, 1995; Fallon & Bowles, 2001) to severe emotional problems (e.g., suicidal ideation) (Carlton & Deane, 2000; Deane et al., 2001; Raviv et al., 2000). In addition to these differences in measurement, it must also be recognised that although adolescents may believe that they

would seek help for more severe problems (as assessed by their reported help seeking intentions), when they experience severe problems they may not actually behave as they stated in their intentions.

Barriers to and facilitators of adolescent help-seeking

As previously reported, only a relatively small proportion of adolescents who perceive themselves to have problems also perceive a need for professional help and seek professional help or attend services (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). Thus, an important area of research has been to identify the barriers that may impact on adolescents‟ likelihood of attending services or seeking professional help. For example, Kuhl et al. (1997) assessed the extent to which adolescents agreed with 13 barriers encountered when seeking professional help, derived from previous help-seeking literature. The most frequently reported barriers were: perceiving family as sufficient to help, perceiving peers as sufficient to help and perceiving that they could deal with problems themselves. Sawyer et al. (2000), in their study of a nationally representative sample of Australian adolescents aged 13 to 17 years (n=1,490), examined the reason for which those who demonstrated a significant level of mental health problems had not sought professional help, despite scoring in the clinical range of the CBCL (Achenbach, 1991a). The most commonly reported reason (38%) for not seeking professional help was that adolescents preferred to manage problems alone. The perception of oneself as sufficient to deal with problems is characteristic of adolescence as independence asserts itself and they prepare to separate from parents (Simmons & Blyth, 1987; Simmons et al., 1987). Furthermore, the perception that family and peers may be sufficient sources of help is consistent with adolescents‟ preference for seeking help from informal sources over professional sources of help (Boldero & Fallon, 1995; Deane et al., 2001; Gould et al.,

2002; Raviv et al., 2000; Rickwood, 1995; Schonert-Reichl & Muller, 1996; Wintre & Crowley, 1993).

Adolescents may be reluctant to seek professional help because they perceive there is a stigma associated with seeking and receiving professional help. Raviv et al. (2000) found that adolescents were more likely to refer someone else to help than seek help for themselves for both minor and severe problems and this pattern was evident for any source of help (informal and professional sources). It appears from these results that adolescents demonstrate a reluctance to seek help for themselves for problems for which they recognise others need help. Raviv et al. suggested that this may be due to a perceived "threat to self"" (Nadler, 1986), such that seeking help incurs psychological costs, e.g., it may induce feelings of need, inferiority and incompetence. Sawyer et al. (2000) also reported that 14% of adolescents who met the criteria for mental health problems but had not sought professional help reported they had not sought help as they were afraid of what people would think.

Additional barriers to help-seeking for adolescents may be that they have difficulty recognising the point at which their problems are severe enough that they require professional help and they may not have knowledge of the sources of help available to them nor how to access them. The term "Mental Health Literacy" was coined by Jorm et al. (1997) to describe this knowledge. Mental Health Literacy pertains to the „„knowledge and beliefs about mental disorders which aid their recognition, management or prevention. Mental health literacy includes the ability to recognize specific disorders, knowing how to seek mental health information, knowledge of risk factors and causes, of self- treatments, and of professional help available; and attitudes that promote recognition and appropriate help-seeking""(p. 182).

The results of a study of adolescents‟ mental health literacy conducted by Burns and Rapee (2006) indicated that adolescents aged 15 to 17 years (*n*=202) demonstrated varying ability to recognise symptoms of depression. The "Friend in need questionnaire" was used to ascertain adolescents‟ responses to five vignettes: two of these vignettes depicted teenagers with five different symptoms of depression, with only one mentioning obvious symptoms of depression (e.g., suicidal intent and feelings of worthlessness). The other three vignettes described young people going through normal life crises, such as being „dropped‟ by a boyfriend. They found that 68% of adolescents recognised the teenager was experiencing depression in the vignette that mentioned obvious symptoms of depression; however, only 34% recognised the teenager was experiencing depression in the vignette that did not include these obvious symptoms of depression. While nearly all (93%) adolescents in this study realised that help was needed for teenagers from either of the two depression vignettes, the sources of help they recommended varied considerably. A positive finding was that 58% reported they would recommend help from a school counsellor; however, only 10% recommended help from a professional, 6% from a psychologist, 4% from a psychiatrist and 2% from a GP. While it is a positive finding that a significant proportion would recommend help from a school counsellor and this may be a step towards attaining help, Issakidis and Andrews (2002) suggest that mental health professionals are more likely to deliver empirically validated treatments for mental health problems compared to medical practitioners or generic counsellors.

Other studies have found that adolescents have limited knowledge as to where to seek help for mental health problems (Kuhl et al., 1997; Sawyer et al., 2000). This lack of knowledge was reported as a barrier to seeking professional help (Kuhl et al.). Furthermore, Sawyer et al. reported that 17% of adolescents who met the criteria for mental health problems but

who had not sought professional help reported that not knowing where to get help was the reason for not seeking professional help.

Having low levels of emotional competence has also been found to act as a barrier to seeking help (Ciarrochi, Deane, Wilson, & Rickwood, 2002; Ciarrochi, Wilson, Deane, & Rickwood, 2003). Ciarrochi et al. (2003) defined emotional competence (or intelligence) as "the ability to identify and describe emotions, the ability to understand emotions and the ability to manage emotions in an effective and non-defensive manner" (p.104) based on previous definitions. Two studies have investigated the role of emotional competence in relation to adolescents' willingness to seek help for emotional and behavioural problems. The first study, conducted by Ciarrochi et al. (2002) with a sample of 137 adolescents aged 16 to 17 years found that adolescents who were low in emotional competence were less likely to seek help from informal sources (e.g., parents, friends, teachers or pastor); however, they were not less likely to seek help from formal sources (e.g., mental health professional, phone help line, doctor/GP). However, a later study conducted by these same researchers (Ciarrochi et al., 2003) among a sample of 217 adolescents (mean age of 14.4 years) found that those who were low in emotional competence were less likely to seek help from informal sources for emotional problems and suicidal ideation and from some formal sources (mental health professionals, doctors, teachers and priests) for suicidal ideation.

It is worth noting that many factors that impede adolescents' help-seeking behaviour exist at one extreme of a continuum, but they may also act as a facilitator at the other end of the continuum, as suggested by Rickwood et al. (2005). Identifying the barriers and facilitators to help-seeking can aid our understanding of the process of help-seeking behaviour and provide insight into how and why adolescents progress differently through these stages. In

addition to these reported barriers, a number of socio-demographic, psychological and psychosocial characteristics have also been found to be associated with seeking help. The following section provides a review of studies that have examined factors associated with indicators of adolescent help seeking.

Part II: Factors associated with adolescent help-seeking

Help-seeking models consistently suggest that adolescents‟ progression through the stages of help-seeking is affected by several factors and that it is possible that these are differentially associated with attaining each stage of help-seeking (Andersen & Newman, 1973; Cauce et al., 2002; Rickwood et al., 2005; Srebnik et al., 1996). The following factors are suggested as being associated with different stages of adolescent help seeking:

i) Socio-demographic factors such as age, gender and ethnicity (Andersen, 1995; Cauce et al., 2002; Srebnik et al., 1996);

ii) Coping and relational factors such as adolescents‟ ability to cope with problems and to communicate problems to others, social networks/structure and social relationships (Andersen, 1995; Cauce et al., 2002; Rickwood et al., 2005; Srebnik et al., 1996).

iii) The characteristics of the illnesses or problems for which help was being sought (Andersen, 1995; Andersen & Newman, 1973; Srebnik et al., 1996; Zwaanswijk, Verhaak et al., 2003).

The studies that have examined the factors associated with adolescent help seeking have used varying conceptualisations and measurement of help-seeking behaviour (Srebnik et al., 1996). For example, studies have examined adolescents‟ self-perceived problem

recognition and need for professional help, adolescents‟ and parents‟ reports of whether adolescents have sought professional help, service attendance and adolescents‟ help-seeking intentions. This varying focus may have contributed to inconsistencies in findings. For example, there are likely to be differences in reports of service attendance or seeking professional help when comparing a group of adolescents who perceive a need for professional help (e.g., Saunders et al., 1994) with a community sample of adolescents (e.g., Gasquet et al., 1997).

While the main focus of this thesis is to examine the factors associated with adolescent help seeking at different stages, only a few studies have conceptualised help-seeking in this way (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). Therefore, the following section also includes studies that have examined factors associated with adolescents‟ help-seeking intentions, service attendance and help sought, despite the apparent methodological differences between studies. These studies still suggest possible associations that may also be evident with stages of adolescent help-seeking behaviour.

As mentioned previously, to avoid repetition, the details of studies, including the sample size, age range, help-seeking measures and measures employed to assess factors associated with help-seeking behaviour are shown in Table 1.3, which can be referred to for this information.

Gender

Studies conducted with adults, adolescents and children have shown that females demonstrate more positive attitudes than males towards seeking help for psychological problems (Barnett et al., 1990; Garland & Zigler, 1994; Kessler et al., 1981). Consistent with these studies, gender (being female) has been linked to adolescents‟ increased

willingness to seek help and a greater participation in help-seeking behaviours, e.g., problem recognition, perceiving a need for professional help and seeking professional help (Carlton & Deane, 2000; Gasquet et al., 1997; Saunders et al., 1994; Schonert-Reichl & Muller, 1996; Sears, 2004; Sheffield et al., 2004; Zwaanswijk, Van der Ende et al., 2003).

One explanation for this gender difference is that female adolescents may have higher levels of emotional competence than males (Ciarrochi et al., 2003; Rickwood et al., 2005) and, therefore, may be better at identifying symptoms of distress as emotional or behavioural problems than males. For example, Ciarrochi et al. found that among a sample of 217 adolescents (mean age of 14.4 years), males had lower levels of emotional competence (assessed by the self-report emotional competence questionnaire; Schutte et al., 1998) than females. The same study found adolescents low in emotional competence were less likely to seek help from informal sources for emotional problems and suicidal ideation and from some professional sources (mental health professionals, doctors, teachers and priests) for suicidal ideation. Therefore, the gender differences found in help-seeking may be due to gender differences in levels of emotional competence.

The gender difference in help-seeking may also be attributable to adolescents conforming to social norms and gender roles/stereotypes from family, friends and media, i.e., that help seeking is considered as a dependent and interpersonal behaviour that is more characteristic of females (Archer, 1996; Cauce et al., 2002; Stefic & Lorr, 1974). Therefore, adolescents of both genders may feel it is more acceptable for females to seek help and, consequently, females may feel more comfortable reporting problems and seeking help than males (Archer, 1996). This was demonstrated in a study conducted by Raviv et al. (2000). They found female adolescents were more willing than male adolescents to refer both themselves and others for help with minor romantic separation problems and severe emotional

problems. Furthermore, all adolescents were more willing to refer females than males for help. Thus, adolescents may conform to gender roles/stereotypes with their greater acceptance for females to obtain help for problems than males.

It has also been suggested that the gender difference in help-seeking exists predominantly in problem recognition (Kessler et al., 1981). While only a few studies have examined the relationship between gender and different help-seeking stages (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003), each of these have found a gender difference only in the earlier stages of help seeking, namely in problem recognition and perceiving a need for professional help. For example, Saunders et al. found that while 51% of their sample was female, females comprised 65% of those who perceived problems, showing that that problem perception was greater for females (although this difference was not examined for statistical significance). In addition, Saunders et al. also reported that a greater proportion of females (53%) perceived a need for professional help than males (45%); however, there was no significant association found between gender and seeking professional help.

Consistent with these results, Zwaanswijk, Van der Ende et al. (2003) reported that females were significantly more likely than males to perceive themselves as having more serious emotional or behavioural problems than their peers, but were not more likely to report that they received a referral for specialised mental health services. Zwaanswijk, Van der Ende et al. also found that females were more likely to perceive themselves to have an unmet need for professional help than males. This is likely explained by the finding that females had higher levels of problem perception, yet similar proportions of males and females received a referral to mental health services.

Consistent with findings of the two aforementioned studies, Sears (2004) found that although female adolescents were significantly more likely than males to report that they had experienced a serious emotional, behavioural or physical problem, they were not more likely to seek professional help. However, in contrast to that found by Saunders et al., females and males were equally likely to perceive a need for professional help. While results of these studies differ slightly, they suggest that gender may be more strongly associated with earlier stages of help seeking (problem recognition and perceiving a need for professional help) and not the latter stage (seeking professional help). Gender also showed no association with receiving a referral for specialised mental health services, which is likely to be an outcome of seeking help.

In contrast to these studies, those that have assessed adolescent help seeking as more of a one-step process have found that gender was associated with adolescents‟ use of professional sources of help and service attendance (Gasquet et al., 1997; Schonert-Reichl & Muller, 1996). For example, Schonert-Reichl and Muller found that female adolescents were more likely than males to report that they had asked professionals for help for an emotional or personal problem during the previous 12 months. They also found females were more likely than males to report that they had asked friends and mothers for help for an emotional or personal problem during the previous 12 months, suggesting that females may be more likely than males to seek help from informal sources in addition to professional sources of help. Consistent with these results, Gasquet et al. (1997) reported that females were more likely than males to report they had consulted a physician (GP, specialist or school doctor) or nurse for depression. The results of both of these studies indicate that gender was associated with receiving professional help for a personal or emotional problem or depression. The differences between the results of these studies and with the findings of previously described studies that examined the association between

gender with stages of help-seeking behaviour (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003) may be due to differences in the assessment of help-seeking behaviour. For example, Saunders et al. and Sears assessed adolescents' reports that they sought professional help only among adolescents who had perceived problems and perceived a need for professional help, whereas Gasquet et al. (1997) and Schonert-Reichl and Muller (1996) assessed adolescents' reports they sought professional help and attended services among all adolescents.

Gender differences in help-seeking have also been found in adolescents' willingness to seek help. Carlton and Deane (2000) reported that gender was one of six factors[7] that explained 22% of the variability in adolescents' intentions to seek help from a psychologist or counsellor for a personal-emotional problem and 23% of the variability in their intentions to seek help from a psychologist or counsellor for suicidal thinking, such that females reported greater intentions to seek help than males. Consistent with these findings, Sheffield et al. (2004) found female adolescents were more likely than males to indicate they would seek help if they experienced either a mental illness or a personal, emotional, or behavioural problem in the next 12 months. The association between gender and a willingness to seek help was present for both formal (professional) and informal sources of help. Sheffield et al. also reported that females displayed significantly less pejorative attitudes toward and a greater knowledge of mental illness compared to males, indicating that the association between gender and adolescent help seeking occurs on many levels. This may also contribute to the gender difference in help seeking, for example, adolescent females may seek help more often than males as they have a greater knowledge of the signs

[7] The five other factors are prior help-seeking behaviour, attitudes towards help-seeking, thoughts about help-seeking, psychological symptoms and suicidal ideation.

of mental illness and can more easily recognise mental health problems (i.e., a higher mental health literacy).

It has been suggested that females may be more likely to participate in help-seeking behaviour because they experience a greater level of problems (Gove, 1978). However, the results of several studies have showed that the association between gender and help-seeking persisted even when adjustment was made for level of mental health problems (Gasquet et al., 1997; Saunders et al., 1994; Zwaanswijk, Van der Ende et al., 2003). For example, Zwaanswijk, Van der Ende et al. found that females were still significantly more likely than males to report that they had more problems than peers and an unmet need for professional help when adjustment was made for levels of mental health symptoms assessed with the Youth Self Report (YSR; Achenbach, 1991b). Consistent with these results, Saunders et al. found that gender was one of the four significant predictors of perceiving a need for professional help, after adjusting for other variables including emotional adjustment and suicidal ideation. Gasquet et al. found the association between being female and consultation for depression remained statistically significant after adjusting for a range of other variables, including level of depression and suicidal ideation.

In summary, females have shown a greater willingness to seek help and have also shown higher levels of problem recognition, perceived need for professional help and higher rates of attendance at services than males. The suggestion by both Kessler et al. (1981) and Saunders et al. (1994) that gender may have a stronger association with the earlier stages of help-seeking behaviour rather than the latter stages of obtaining professional help or attending mental health services warrants further consideration. Furthermore, the effects of gender differences in adolescents‟ levels of mental health symptoms should also be considered when examining the effect of gender on help seeking behaviour.

Age

The few studies that have assessed the association between adolescents‟ age and each stage of help-seeking have yielded inconsistent results. For example, Saunders et al. (1994) found that adolescents of different ages did not differ in their likelihood of perceiving a need for professional help or in their reports that they sought professional help. However, Zwaanswijk, Van der Ende et al. (2003) and Sears (2004) found that older adolescents aged 15 to 18 years were more likely to perceive they had worse emotional or behavioural problems than their peers and were also more likely to perceive an unmet need for professional help, compared to younger adolescents aged 11 to 14 years. However, they found no age difference in the likelihood of receiving a referral for mental health services. In contrast, Sears found no significant association between age and adolescents‟ perceptions of having emotional, behavioural or physical problems or their perceptions that they needed professional help with their problems; however, they found older adolescents (senior high school) were significantly more likely to have reported they sought professional help than younger adolescents (junior high school). While the specific age ranges of the adolescents who were in junior and senior high school were not reported in this study, the results indicated that older adolescents were more likely to have sought professional help.

The mixed findings of these three studies are likely due to differences in the assessment of help-seeking employed by each study and the different age groups that were compared by each study. Other studies that have assessed adolescent help seeking as a one-step process have also found older adolescents are more likely to have obtained help than younger adolescents. For example, Schonert-Reichl and Muller (1996) found that 15 to18 year old adolescents sought help more often from mothers, fathers, friends and professionals than

13 to 14 year olds. Gasquet et al. (1997) found that older adolescents aged 15 to 20 years consulted for depression more often than younger adolescents aged 12 to 15 years.

The associations that have been found between adolescents‟ age and the frequency with which they seek professional help have been found to persist beyond that accounted for by their levels of mental health symptoms. For example, Zwaanswijk, Van der Ende et al. (2003) found the significant association between adolescents‟ age and their perceptions that they had more problems than peers persisted after adjusting for mental health problems (YSR scores; Achenbach, 1991b). Furthermore, Gasquet et al. (1997) found the association between age and service attendance persisted after adjusting for level of depression and suicidal ideation.

Given the difference in results and methodological differences across studies, it is difficult to determine the exact nature of the relationship between adolescents‟ age and the likelihood of participation in each stage of help-seeking. However, taken together, the results of these studies indicate that help-seeking behaviour is likely to differ with age beyond that accounted for by levels of mental health problems. These results are consistent with the developmental period of adolescence, during which a child‟s independence and autonomy increases. It is therefore reasonable to assume that older adolescents are more likely to take responsibility for their own health and problems and thus seek help for such problems than younger adolescents. This is facilitated as older adolescents may also attend services or obtain help without their parents‟ knowledge, increasing their independence and separation from parents. In summary, while results differ across studies, there is evidence that older adolescents were more likely to participate in help-seeking behaviour than younger adolescents.

Economic factors

Economic factors such as socio-economic status (SES), income and insurance have been conceptualised to affect help-seeking behaviour and, more specifically, mental health service utilisation (Andersen & Newman, 1973; Srebnik et al., 1996). The suggested role of SES in adolescents‟ help seeking has been based on the supposition that adolescents from certain SES backgrounds have greater access to health insurance (Srebnik et al., 1996). Srebnik et al. suggested that the relationship between SES and service attendance is curvilinear, such that children from very low SES backgrounds are likely to have access to government health assistance and children from high SES backgrounds are likely to have private health. As a result, children from middle SES backgrounds may be the least likely to attend services. However, this relationship is context dependent, as the health system and government assistance provided in each country differs. This poses a major challenge for assessment in this area, as it is difficult to draw comparisons across studies that have been conducted in different countries. Furthermore, SES is a very difficult construct to assess and studies to date have employed various indicators of SES.

The results of a study conducted with adolescents and young adults aged 12 to 21 years (n=760) in the USA indicated that adolescents and young adults from middle-income families were less like to have had contact with mental health services than adolescents from lower-income and higher-income families (P. Cohen & Hesselbart, 1993). These results support the suggestion of Srebnik et al. (1996) that the association between SES and service use is curvilinear. In contrast, Saunders et al. (1994) found that a sample of adolescents from middle to upper-middle class families and lower-working class families in the USA were equally likely to report a need for professional help with their emotional, behavioural or mental health problems, but those from the upper-middle class families

were more likely to report that they had sought professional help than those from lower-working class families. These results suggest adolescents from higher SES were more likely to seek professional help for their problems than those from lower SES.

In contrast to studies conducted in the USA, those conducted in other countries have found no association between SES and help seeking or service use. For example, Gasquet et al. (1997) did not find SES to be significantly associated with consultation with a nurse and/or doctor for depression in their study of French adolescents. They attributed this result to the French health care system which provides universal coverage and significant reimbursement of medical fees. Consistent with these findings, Zwaanswijk, Van der Ende et al. (2003) reported that parents‟ occupation level was not associated with adolescents‟ self-perceived need for help, their self-perceived unmet need for help or whether they received a referral for mental health services. This study was conducted in the Netherlands and it was noted that the Dutch health system has no financial constraints to receiving professional help. Consistent with the findings of these studies, Sears‟ 2004 study of a sample of Canadian adolescents also found that parents‟ occupation and education level were not significantly associated with adolescents‟ reports that they had serious emotional, behavioural or physical problems, they had a need for professional help or they had sought professional help. This may have been due to methodological differences in the studies or, alternatively, there may be few financial constraints to obtaining professional help in Canada, although this was not suggested by the authors of the study.

The results from a study by Sawyer et al. (2007) that examined a random sample of Australian adolescents aged13 to 17 years (*n*=1,490) indicated that household income and parent education were not significantly associated with adolescents‟ rates of service attendance (e.g., visiting a school counsellor or a health service) within the last six months.

However, the results of an earlier study conducted by Sawyer et al. (2001) that focused on parental reports of service attendance for both children and adolescents aged 4 to 17 years (*n*=4,509) indicated that the cost of services was perceived by parents as a barrier to seeking professional help. The parents in this study reported that two of the major obstacles to obtaining help for children"s emotional and behavioural problems were the cost of attending services and long waiting lists. Therefore, these results indicate that financial barriers and the nature of the health care system (i.e. long waiting lists) may impact on children"s and adolescents" service use for emotional and behavioural problems in Australia.

In summary, a major difficulty with examining the association between adolescent help-seeking behaviour and SES, as well as other economic factors, is that this association is likely to be influenced by national health systems. An additional difficulty is that there are differences in the conceptualisation of help-seeking behaviour across studies and there is also an array of economic factors that may potentially influence adolescent help seeking behaviour (e.g., SES, household income, parents" education and occupation status). Economic factors are commonly cited in theoretical models of help-seeking behaviour and have been shown to have some impact on accessibility of services and care in some countries. However, results of studies examining the relationship between economic factors and help-seeking behaviour may not be extendable to other countries and should be interpreted with caution.

Ethnicity and culture

The difference between race, ethnicity and culture is intangible and these terms are often used interchangeably. However, an attempt at providing brief definitions of these terms is warranted to assist in understanding the limitations of the research conducted in this area.

Race generally refers to the biological descent of a person and is therefore most often used to refer to biological markers and not defined by nationality (Cauce et al., 2002; McKenzie & Crowcroft, 1994). In contrast to the biological origin of race, both ethnicity and culture are socially determined constructs (McKenzie & Crowcroft, 1994). *Ethnicity* is commonly used to refer to groups that are common in nationality, culture, or language (Bentancourt & Lopez, 1993); however, is often assessed based on a combination of biological and social factors (McKenzie & Crowcroft, 1994). *Culture* is a social construct and pertains to the shared behaviour and attitudes of a specific social group. The difficulty in research is that culture is generally not defined or assessed beyond ethnicity or race, therefore it is difficult to distinguish between the separate effects of race, ethnicity and culture on help-seeking or service use (Cauce et al., 2002). Most of the studies that have been conducted in this area have assessed ethnicity by determining adolescents‟ race.

Cauce et al. (2002) conceptualised ethnicity and culture to influence all aspects of help-seeking in their model (i.e., problem recognition, decision to seek help and selection of services). They suggest that some cultures may be more accepting of psychological symptoms as normal behaviour, whereas other cultures have a propensity to identify symptoms as actual psychological problems. Cauce et al. also suggested ethnicity and culture influence the decision to seek help, by influencing the way adolescents cope with problems and their attitudes toward seeking help. For example, some cultures advocate dealing with problems independently and consider help-seeking as weak or shameful, while others may encourage adolescents to avoid thinking about or dwelling on problems (Cauce et al., 2002; Srebnik et al., 1996). Finally, Cauce et al. suggested that ethnicity and culture may influence the help that is sought through social norms and social networks. For example, when seeking help from a professional source is not congruent with the social norms and networks of the cultural group, individuals may be discouraged from accessing

professional help. Conversely, if seeking help from a professional source is congruent with the social norms and networks of the cultural group, this may encourage help seeking behaviour.

Despite the strong theoretical arguments for the links between ethnicity and culture and help-seeking, few studies have empirically assessed the strength of the associations between ethnicity and culture and adolescent help seeking (Cauce et al., 2002; Rickwood, Deane & Wilson, 2007). This lack of studies may be due to the difficulty associated with this area of research. For example, help-seeking behaviour may differ across ethnic groups and cultures. This poses a major challenge for studies conducted in multi-cultural countries with many sub-cultures and ethnic groups (Cauce et al.). The majority of studies has focused on contrasting two specific ethnic groups and/or has grouped more than one ethnic minority together. Although ethnic minority groups are likely to differ from the majority in different ways, some help-seeking and service attendance patterns are discernible.

The results of several studies conducted in the USA show that adolescents from minority ethnic groups are less likely to seek help. For example, Kataoka et al. (2002) examined ethnic disparities in children‟s and adolescents‟ unmet need in a national survey of children and adolescents aged 6 to 17 years in the USA (*n*=21,824). They found that the proportion of Hispanic children who demonstrated a significant level of mental health problems (Ehrle & Moore, 1999) but had not attended any mental health services for help in the past 12 months was higher (88%) than the proportion of Caucasian children who also had a significant level of mental health problems but did not attend any mental health services for help (76%). The significance of the association persisted after adjusting for other demographic characteristics (including SES). This raises another important issue when examining the impact of ethnicity on help seeking. As noted by Cauce et al. (2002), it is

difficult to separate the effects of culture and SES, especially in countries when there is a large degree of overlap between the two.

Consistent with the results of the study conducted by Kataoka et al. (2002), Kodjo and Auinger (2004) also found a significantly smaller proportion of emotionally distressed African American adolescents (8%) reported receiving psychological counselling than emotionally distressed Caucasian adolescents (19%) and Hispanic adolescents (16%). Furthermore, results of a study conducted by Kuhl et al. (1997) suggested that adolescents from some ethnic minority backgrounds encounter more barriers to help-seeking. They found ethnicity (Caucasian, Asian-American, Hispanic or African American) was significantly associated with adolescents‟ scores on the Barriers to Adolescents Seeking Help questionnaire (BASH; Kuhl et al., 1997). They suggested this was due to the Asian-American adolescents in the sample (70%) had scores in the highest third of the BASH score distribution. Thus, the results of this study suggest these adolescents more often encountered barriers[8] to seeking help.

Results of other studies that have assessed the impact of race on adolescents‟ engagement in different stages of help-seeking have found contrasting results. For example, Saunders et al. (1994) found race (Caucasian versus non-Caucasian participants) was not significantly associated with perceiving a need for professional help or seeking professional help. This may have been because Caucasian participants were compared with all non-Caucasian participants and therefore, several ethnic minorities were likely grouped together in this study. A further interesting finding of this study is the significant interaction that was found between race and SES, such that adolescents from a non-Caucasian and lower SES

[8] e.g. affordability, alienation, confidentiality, regarding family as sufficient to help, knowledge of resources, locus of control, regarding peers as sufficient, perception of therapist, self awareness, self-perception, self-sufficiency, stigma, time availability and usefulness of therapy.

background were the least likely to obtain help, and Caucasian adolescents from a middle or upper class SES background were the most likely to obtain help. This result is consistent with the suggestion of Cauce et al. (2002) that it is sometimes difficult to separate the effects of culture and SES.

In contrast to the direction of the relationships found by the previously mentioned studies, Zwaanswijk, Van der Ende et al. (2003) found adolescents with non-Caucasian or Mediterranean parents were more likely to have received a referral for specialised mental health services than those with Caucasian/Dutch parents, among a sample of Dutch adolescents. The difference in the direction of the relationship that was found by Zwaanswijk, Van der Ende et al. may be due to the small number of adolescents that were from an ethnic minority background in the study (*n*=81). As a result the sample may not have been representative of this ethnic minority group. It may also have been due to the contextual differences between the countries in which studies were conducted, e.g., Zwaanswijk, Van der Ende et al. conducted their study in the Netherlands whereas the other studies were conducted in the USA. This result confirms the need to exercise caution when comparing the results from different countries and also the results of studies conducted with different ethnicities in different countries. Furthermore, the results of the study conducted by Zwaanswijk, Van der Ende et al. indicate the significance of the association between ethnicity and receiving a referral did not persist when adjustment was made for other factors, including adolescents‟ levels of mental health problems (YSR total problems score). Therefore, the significant association found between ethnicity and receiving a referral for mental health services may have been due to higher levels of mental health problems among the adolescents from an ethnic minority background. These results highlight the importance of adjusting for the effects of differences in adolescents‟ levels of

mental health symptoms by their ethnic status when examining the effect of adolescents‟ ethnic status on their help seeking behaviour

In summary, while the comparisons made between these studies should be interpreted with some caution, the results suggest that adolescents from ethnic minority groups may be less likely to engage in help-seeking behaviour or obtain help and may also encounter more barriers to seeking help. The inclusion of ethnicity and culture in many models of help seeking, and the theoretical rationale provided for the link between culture and ethnicity, suggests that the role of ethnicity and culture in help seeking is important and warrants further investigation.

Parental and family characteristics

While the main focus of this thesis is adolescents‟ subjective perception of their help-seeking behaviour, parents are potentially important agents in facilitating their children‟s help-seeking behaviour. Family and parental factors may influence adolescent help seeking directly as well as indirectly through the impact they have on adolescents‟ mental health problems. For example, adolescents from families with a history of problems, with poor family functioning or who have experienced parental separation, divorce or a family upheaval, may be more likely to have a higher level of mental health problems due to their family situations and may, therefore, be more likely to participate in help-seeking behaviour. Alternatively, family and parental factors may influence adolescent help-seeking behaviour through the impact they have on parents‟ perceptions of adolescents‟ mental health problems (Srebnik et al., 1996). Family situations such as separation or divorce, family conflict/poor functioning and family upheaval, may sensitise parents to signs of emotional and behavioural problems in adolescents, e.g., changes in behaviour or mood, and they may, therefore, be more likely to facilitate adolescents to help. Conversely,

it may also be that parents who experience substantial burden are less aware of psychological problems in their adolescents because they are distracted or preoccupied by separation or divorce, family conflict/poor functioning, family upheaval, the number of siblings in family and parental work commitments (Cauce et al., 2002). As a result, parents dealing with these situations may be less likely to notice that an adolescent is experiencing problems and, therefore, less likely to facilitate adolescents to care (Srebnik et al., 1996; Cauce et al., 2002).

It is difficult to compare the results of studies that have assessed the relationship between parental status and adolescent help seeking, as studies have used different methods to assess parental status and help-seeking. Although findings vary between studies, likely due to the differences in the assessment methods used across studies, several studies have found a link between parental status and adolescents‟ attainment of specific stages of help-seeking. For example, the results of Sears‟ study (2004) indicated that adolescents who were living with someone other than a parent were more likely to report serious emotional, behavioural or physical problems compared to those in either a one or two parent family. Sears additionally found that adolescents who lived with someone other than their parents did not differ in their likelihood of perceiving a need for professional help or seeking professional help from those who lived with at least one parent. Zwaanswijk, Van der Ende et al. (2003) assessed parental status differently from Sears (2004), by contrasting adolescents from one-parent families with those from other family situations. They found adolescents from one-parent families were significantly more likely to report that they had problems that were worse than their peers and more likely to report that they had received a referral for specialised mental health services, compared to adolescents from other parental situations. Saunders et al. (1994) examined the relationship between adolescents‟ parental status and their participation in stages of help-seeking, by contrasting adolescents with

parents who were still married with those who had parents who were separated or divorced. They found that parental status was not significantly associated with perceiving a need for professional help; however, they found adolescents with parents who were still married were less likely to have sought professional help, compared to those whose parents were separated or divorced.

Studies that have not assessed help-seeking in stages have also found a relationship between parental status and adolescents‟ reports they sought professional help and attended services. For example, Barker and Adelman (1994) found that adolescents from single-parent homes were significantly more likely to have sought help from professional sources than those with another parental status. Latinen-Krispjin et al. (1999) similarly found that young adolescents aged 10 to 12 years who were from a one-parent family were more likely to attend mental health services compared to those from a two-parent family, even after adjusting for gender and adolescents‟ levels of mental health problems (CBCL).

While the assessment of parental status differed between studies, they each assessed a parental situation that may have involved family conflict, separation or upheaval. For example, adolescents from one-parent families may have recently endured a negative life event, such as a parental divorce or separation, or death of a parent. Furthermore, children who did not live with either of their parents may have also experienced negative life experiences such as the death of a parent or parents or removal to foster care. Adolescents from families where parents were separated or divorced may have recently experienced the separation or family conflict. Taken together, the results of these studies suggest that adolescents from parental situations that may have involved family conflict, separation or upheaval were more likely to engage in different stages of help-seeking.

While these negative life events may have contributed to relationships found through increasing adolescents‟ risk of mental health symptoms, Zwaanswijk, Van der Ende et al. (2003) additionally found that the association between parental status and adolescents‟ perceptions that they had problems that were worse than their peers, and their reports of receiving a referral to mental health services, held even when parental status was entered with other variables, including change in family composition and adolescents‟ levels of mental health problems. Therefore, these results indicated this finding was not solely due to family upheaval that may have been associated with adolescents‟ parental situation, or the possibility that adolescents from a one-parent family experienced a higher level of mental health symptoms. An alternative explanation is that these negative life events may have sensitised adolescents to perceiving themselves to have problems and also to have problems that were worse than their peers. Furthermore, adolescents from such parental situations may have felt more comfortable reporting they had emotional, behavioural, mental health or physical problems as they may have perceived their family situation provided them with an external justification for having such problems. It is probable that parents/caregivers may also be more sensitive to behavioural or emotional change in adolescents who recently endured a parental separation or divorce, or the death of a parent or family upheaval. Therefore, parents of adolescents from these situations may have been more likely to facilitate and support them to seek professional help and thus also to receive a referral for mental health services.

In addition to examining the relationship between parental status and adolescent help seeking, two studies have demonstrated a link between family functioning and change in family composition with help-seeking. Both of these studies were based on the same sample; however, one used parent reports of children and adolescents‟ behaviour (Verhulst & Van der Ende, 1997) and the other used adolescents‟ self-reports (Zwaanswijk, Van der

Ende et al., 2003). Verhulst and Van der Ende (1997) found that, even after adjusting for children and adolescents‟ level of mental health problems, the parents of children and adolescents with poor family functioning and those who had experienced a change in family composition were significantly more likely to report their children received a referral to a specialised mental health services. Zwaanswijk, Van der Ende et al. (2003) also found that, even after adjusting for adolescents‟ level of mental health problems, those who had experienced a change in family composition were significantly more likely to report that they had problems that were worse than their peers and had received a referral to specialised mental health services. The results of these studies indicate that family functioning was associated with parents‟ reports of help seeking, irrespective of children or adolescents‟ levels of mental problems. Furthermore, change in family composition was associated with both parents‟ and adolescents‟ reports of their help-seeking behaviour, irrespective of adolescents‟ levels of mental health problems.

These studies also investigated whether the number of siblings in the family was associated with children and adolescents‟ help-seeking behaviour. However, only Verhulst and Van der Ende (1997) found there was a significant association between number of siblings in the family and children and adolescents‟ help-seeking behaviour. The results of Verhulst and Van der Ende‟s study indicated that parents of children and adolescents with a greater number of siblings under 18 years old were less likely to perceive a problem in their children; however, this did not result in a lesser likelihood of receiving a referral to mental health services. In contrast to these findings, Zwaanswijk, Van der Ende et al. (2003) found there was no significant association between the number of children under 18 years old in the family and adolescents‟ help-seeking behaviour. The difference in results between these two studies is likely due to the informant used in each study (parental report versus adolescent report). It is possible that having a greater number of children in the family is

more likely to impact parents‟ perceptions of problems than adolescents‟ perceptions of problems. Verhulst and Van der Ende suggested that parents with more than one child have a point of reference by which they can compare their children‟s problems (i.e., siblings), whereas parents of a single child do not have this point of reference and may be more likely to perceive problems in their child as requiring intervention. Alternatively, parents of more than one child may experience more restrictions on their time and attention and this may impair their ability or capacity to recognise when their children are experiencing problems. Comparing the results of these two studies highlights the differences in adolescents‟ and parents‟ perceptions of adolescent behaviour. It also illustrates the difficulty associated with obtaining an accurate picture of the factors that are associated with adolescent help seeking.

Together, these studies provide evidence that family and parental characteristics are associated with adolescent help seeking, irrespective of adolescents‟ level of mental health problems. Despite differences in the assessment of parental and family characteristics and the methodological differences between the studies, the results of these studies suggest that family and parental factors may play an important role in adolescent help seeking.

Adolescents' mental health problems

Most models of adolescent help seeking hypothesise that adolescents‟ levels of mental health problems (or psychological distress) is related to an increase in adolescents‟ help-seeking behaviour (Andersen, 1995; Andersen & Newman, 1973; Srebnik et al., 1996; Zwaanswijk, Verhaak et al., 2003). While relationships of this nature have been found (Barnes et al., 2001; Gasquet et al., 1997; Laitinen-Krispijn et al., 1999; Zwaanswijk, Van der Ende et al., 2003), it is clear that the association is not as straight-forward as it seems for some mental health symptoms. For example, studies have found that as suicidal

ideation increases, the help-seeking behaviour of adolescents and young people may decrease (Carlton & Deane, 2000; Deane et al., 2001; Saunders et al., 1994; Sears, 2004).

Carlton and Deane (2000) found that adolescents‟ suicidal ideation and psychological symptoms and distress were among six factors that accounted for a 23% variation to seeking help for suicidal thinking[9]. Suicidal ideation, prior help-seeking behaviour and adolescents‟ attitudes were the only unique predictors of intentions to seek help for suicidal thinking. The relationship between suicidal ideation and intention to seek help for suicidal thinking was such that as suicidal ideation increased, help-seeking intentions for suicidal thoughts decreased. However, it was also interesting that the results of this study indicated that higher levels of mental health problems (assessed with the HSCL-21; Green et al., 1998) were significantly associated with increased help-seeking intentions. Thus it appears from these results that only levels of suicidal ideation may have had a negative association with adolescents‟ help-seeking intentions.

Carlton and Deane (2000) suggested that this negative association found between higher levels of suicidal ideation and decreased help-seeking intentions may be indicative of *help-negation*. *Help-negation* was defined by Rudd, Joiner and Rajab (1995) as "the refusal to accept or access available helping resources as a likely function or manifestation of patient hopelessness, pessimism and cynicism regarding the efficacy of treatment" (p.499). Historically, this effect has predominantly been found in samples of adults in suicidal crisis (Carlton & Deane, 2000); however, as evidenced by the results of other studies, help negation may not be restricted to those experiencing clinical levels of suicidal ideation and

[9] Other variables were gender, prior help seeking, attitudes towards seeking professional psychological help (ATSPPHS) (Fischer & Turner, 1970) and adolescents‟ thoughts about psychotherapy (TAPS) (Kushner & Sher, 1989).

may also occur with mental health problems other than suicidal ideation (Barnes et al., 2001; Carlton & Deane, 2000; Saunders et al., 1994; Sears, 2004).

Deane et al. (2001) explored among a sample of young adults (80% of participants were less than 21 years of age) the possibility that individuals with suicidal ideation may not seek help because they feel hopeless or because of their prior help-seeking experience. Deane et al. found that higher suicidal ideation (assessed with the SIQ; Reynolds, 1988) was associated with lower intentions to seek help (assessed with the GHSQ) for suicidal thoughts from *all sources* of help and also with help-seeking from friends and family for non-suicidal problems. Higher suicidal ideation was also associated with *not* seeking help from anyone for both suicidal and non-suicidal problems. Suicidal ideation remained negatively associated with help-seeking intentions from all sources when analyses were conducted adjusting for hopelessness (assessed with the BHS; Beck et al., 1974) along with prior help-seeking experiences. Therefore, while these results are suggestive of help negation, results also suggest the association between higher suicidal ideation with not seeking help was not explained by hopelessness.

Wilson et al. (2007) examined whether the help negation effect was evident for other types of mental health problems apart from suicidal ideation. They examined the relationships between adolescents‟ and young peoples‟ depressive symptoms and help-seeking intentions for a personal-emotional problem (assessed with the GHSQ). They examined this relationship among two separate samples of adolescents, aged 11 to 17 years and 12 to 18 years, and a sample of young adults aged 17 to 24 years. Levels of depression were assessed utilising either the BDI-II (Beck et al., 1996) or the CESD (Radloff, 1977) for each of these samples. Across the three samples, they consistently found that, as depression levels increased: i) adolescents‟ and young peoples‟ intentions to seek help from their

parents decreased; and ii) their intentions to seek help from „no one" increased. While those with higher levels of depression were not found to have lower intentions to seek professional mental health care, Wilson et al. attributed this to the overall low levels of intentions to seek help from this source.

Taken together, these studies suggest that help-seeking intentions for personal-emotional problems and suicidal thoughts from varying sources may be lower among adolescents with suicidal ideation and higher levels of depression. A similar negation effect has also been found in studies that have assessed the relationships between levels of mental health problems and adolescents' reports they sought professional help when examined among adolescents who attained previous stages of help-seeking (perceived themselves to have problems and a need for professional help). For example, Saunders et al. found that among adolescents who reported they had experienced emotional, behavioural or mental health problems, those with severe suicidal ideation were significantly more likely to perceive a need for professional help, but were less likely to report they had sought professional help, compared to those with less severe or no suicidal ideation. Saunders et al. (1994) suggested that adolescents with suicidal ideation are likely to experience co-morbid symptoms that may interfere with establishing a relationship with the therapist (e.g., conduct problems) and that these symptoms may operate in a similar way and interfere with seeking professional help. Interestingly, Saunders et al. also found there was no significant association between adolescents' levels of emotional distress and the likelihood they perceived a need for professional help or reported that they sought professional help. Therefore, it may be that once adolescents have progressed past the initial stages of help-seeking, only very severe problems such as suicidal ideation can differentiate between those who do and do not engage in the subsequent help seeking stages.

The results of Sears‟ study (2004) were consistent with those from the study conducted by Saunders et al. (1994). Sears found that adolescents who reported they had experienced serious emotional, behavioural or physical problems or perceived a need for professional help with these problems also reported higher levels of depressive symptoms (assessed with the BDI) and anxiety symptoms (assessed with the STAI) compared to adolescents who did not report serious problems or a need for professional help. However, adolescents who sought professional help did not differ from those who did not on levels of depression, but did report lower levels of anxiety. Sears suggested that adolescents who sought professional help may have reported lower levels of anxiety than those who had not sought professional help because of the positive effects of intervention. This explanation differed to Saunders et al., who suggested that suicidal symptoms or co-morbid symptoms may have interfered with adolescents‟ likelihood of seeking professional help. Both of these studies assessed help-seeking behaviour and mental health problems at one point in time; therefore, it cannot be determined whether adolescents‟ suicidal ideation or anxiety symptoms preceded their help seeking behaviour or whether their levels of symptoms were a result of help that had been sought.

A similar effect has been found among adolescents experiencing clinical levels of suicidal ideation in a study that assessed help-seeking as a one-step process. Barnes et al. (2001) examined the association between help-seeking and nearly lethal suicide attempts in a sample of adolescents and young adults (aged 13 to 34 years) by contrasting the help-seeking behaviour of suicide case-patients (patients who presented to hospitals after a nearly lethal suicide attempt) with a randomly selected control group. Overall, suicide case-patients were less likely to have sought help from any source (a professional consultant, a family member or a friend), but particularly a professional consultant, compared to the control group. Furthermore, participants who had attempted suicide (from either group)

were less likely to seek help from all sources (including clinicians and other professionals), compared to those who had not attempted suicide. Although this study did not focus on adolescents exclusively, it does show that suicidal individuals (including adolescents) were less likely to seek professional help. However, it should be noted that the participants of this study were experiencing clinical levels of suicidal ideation.

Other studies have found that higher levels of mental health problems are related to a greater likelihood of seeking professional help and service use. For example, Zwaanswijk, Van der Ende et al. (2003) found adolescents with higher levels of mental health problems were more likely to report that they had more severe mental health problems than other adolescents and also were more likely to report a self-perceived unmet need for professional help. However, Zwaanswijk, Van der Ende et al. also found that higher levels of mental health problems were related to a greater likelihood that adolescents reported receiving a referral for mental health services.

Furthermore, other studies that have assessed help-seeking as a one-step process have also found higher levels of mental health problems are related to higher rates of service attendance. For example, Laitinen-Krispin et al. (1999) found among a sample of adolescents that higher levels of general mental health problems (assessed with the CBCL subscales, total problems scale, internalising and externalising scales) were related to a greater likelihood of attending mental health services, based on records of use of mental health services in the region. Gasquet, Chavance, Ledoux, and Choquet (1997) also found among a sample of adolescents that higher levels of depression, suicidal ideation, self-criticism and difficulty in concentrating were related to a greater likelihood of service attendance (e.g., consulted for depression with a physician and/or nurse in the previous year).

Although stages of help seeking were assessed differently across studies, the positive associations that Zwaanswijk, Van der Ende et al. found between levels of mental health problems and earlier stages of help seeking assessed in their study are similar to those Saunders et al. (1994) and Sears (2004) found between levels of suicidal ideation, depression and anxiety levels and adolescents' engagement in the earlier stages of help seeking. However, the finding of the three studies by Gasquet et al., (1997), Laitinen-Krispin et al., (1999), and Zwaanswijk, Van der Ende et al., (2003) showing that higher levels of mental health problems and depression were related to a lower likelihood of service attendance or receiving a referral for mental health services are inconsistent with that found by Saunders et al. and Sears. These latter studies found that higher levels of suicidal ideation were related to a lower likelihood of seeking professional help (Saunders et al.) and adolescents who sought professional help had lower levels of anxiety than those who did not (Sears).

The mixed findings of these studies are likely due to methodological differences between the studies. For example, Saunders et al. (1994) and Sears (2004) assessed adolescents' reports they sought professional help among those who attained previous stages of help seeking. Thus, levels of suicidal ideation or anxiety may only be negatively associated with adolescents' reports they sought professional help when examined among adolescents who have recognised they have problems and a need for professional help. This negative association may not be apparent when examined among all adolescents. Another difference between the studies is that the type of mental health problems found to negate adolescents' help seeking intentions and the rates at which they seek professional help were specific internalising problems (suicidal ideation, depression and anxiety). Conversely, Laitinen-Krispin et al. (1999) and Zwaanswijk, Van der Ende et al. (2003) found higher levels of general mental health problems were most commonly related to an increased likelihood of

attending services and seeking professional help. Thus it is evident the nature of relationship between adolescents‟ levels of mental health problems and their help seeking-behaviour is undoubtedly complex. Despite the complexity of these findings, these studies provide some compelling evidence that having higher levels of some types of mental health problems may negate adolescents‟ involvement in specific aspects of help-seeking instead of prompting it as may be expected. This phenomenon requires further investigation.

The results of some studies have also suggested that internalising problems and externalising problems may have differential associations with stages of adolescent help seeking. Sears (2004) found that those adolescents who reported they had experienced serious emotional, behavioural or physical problems in the last year, and a need for professional help with these problems, reported lower levels of both emotional and behavioural adjustment. However, their levels of behavioural adjustment explained more variability in their perceptions they had serious problems in the last year than their levels of emotional adjustment (assessed by adolescents‟ levels of depression, anxiety and self esteem). In contrast, their levels of depression explained more variability in their perceptions that they needed professional help for their problems than any other type of problems. Sears (2004) additionally found that levels of emotional adjustment and behavioural adjustment explained little variability in adolescents‟ reports that they had sought professional help.

Sears suggested that adolescents‟ involvement in behaviours that pose risk to themselves or others (e.g., antisocial behaviour, substance abuse) may be more easily recognised as problematic, whereas it is much more difficult to define the point at which emotional distress (e.g., depression, anxiety, self-esteem) becomes problematic. However, the results of this study also indicate that, while emotional distress may not initially be perceived to be

as problematic as behavioural adjustment problems, adolescents may be more likely to recognise the severity of depressive symptoms by perceiving they required professional help for these problems, compared to all other types of problems. These results suggest depressive symptoms are an important prompt to perceiving a need for professional help.

Zwannswijk, Van der Ende et al. (2003) found that while levels of internalising problems assessed with the YSR internalising scale and externalising problems assessed with the YSR externalising scale were positively associated with adolescents‟ perceptions they had problems worse than their peers, only levels of externalising problems were positively associated with adolescents‟ reports they received a referral for specialised mental health services. However, only a small number (*n*=35) of adolescents reported they had received a referral for mental health problems in this study, which may have contributed to this non-significant result for levels of internalising problems.

The results of both of these studies (Sears, 2004; Zwaanswijk, Van der Ende et al., 2003) suggest that adolescents with any type of problem (internalising or externalising) are more likely to engage in earlier stages of help-seeking (problem recognition and perceiving a need for professional help), although Sears found some variability in the strength of the associations with the type of problems adolescents experienced, i.e., emotional or behavioural problems. Furthermore, whereas Sears found that little variability in adolescents‟ reports they sought professional help was explained by levels of emotional or behavioural adjustment problems, Zwaanswijk, Van der Ende et al. found only levels of externalising problems were significantly associated with receiving a referral for mental health services. The difference in the results of these studies is likely due to the methodological and assessment differences between these two studies. For example, adolescents‟ levels of externalising problems may be more noticeable by others as

problems that require professional help due to the externally noticeable behavioural symptoms and, therefore, adolescents with higher levels of externalising problems may be more likely to receive a referral for mental health services (as assessed by Zwaanswijk, Van der Ende et al.), but they may not be more likely to perceive a need for professional help or seek professional help for themselves (as assessed by Sears). Adolescents with higher levels of internalising problems are less likely to exhibit behaviours that are disruptive or easily noticeable and, therefore, may not elicit attention or cause disruption to warrant receiving a referral for mental health services.

In summary, the nature of relationships between adolescents‟ levels of mental health problems and adolescent help-seeking behaviour is unclear. There is evidence that different types of mental health problems may affect adolescent help-seeking behaviour in different ways. Further research is needed to disentangle the relationships between different mental health problems and all aspects of help-seeking behaviour.

Psychosocial factors

If help-seeking behaviour involves *actively seeking out* and *using social relationships*, as suggested by Rickwood et al. (2005), it is likely that adolescents require established social relationships or social support networks in order to facilitate help-seeking. Lack of social relationships, networks and support have been identified as barriers to help-seeking at one end of a continuum and good social relationships, networks and support have been identified as facilitators or enabling factors to help seeking at the other end (Andersen, 1995; Andersen & Newman, 1973; Rickwood et al., 2005; Srebnik et al., 1996).

Social support has been hypothesised to influence adolescent help seeking through social norms (Cauce et al., 2002). When social norms are not congruent with seeking help for

mental health problems from professional sources, an individual may be discouraged or prevented from seeking help (Cauce et al., 2002). This may be particularly true for the adolescent population who do not want to be regarded as different from their peers or flawed in some way. Conversely, when social norms are congruent with seeking help, an adolescent may be encouraged to seek professional help.

It has also been suggested that social support may hinder help-seeking from professional sources when adolescents perceive their social network as a sufficient source of help and therefore do not seek help from a professional. Kuhl et al. (1997) found the central barrier to adolescents seeking professional help was perceiving family, friends or one"s self as sufficient to deal with problems. This is worrisome given studies have shown adolescents" preference to seek help from peers over adults and professional sources of help (Deane et al., 2001; Raviv et al., 2000; Wintre & Crowley, 1993). Peers may not be equipped to provide the support or help required by adolescents experiencing severe problems. Professional help-seeking may similarly be hindered if the source of informal help considers themself as sufficient help and does not encourage or facilitate the adolescent to seek professional help.

Both Sheffield et al (2004) and Sears (2004) found that adolescents" levels of social support did not facilitate professional help-seeking behaviour and may have impeded it. For example, Sheffield et al. (2004) found that adolescents" reported degree of social support was not a significant predictor of willingness to seek help from formal sources of help; however, adolescents with higher levels of social support were more willing to seek help from informal sources. Consistent with these results, Sears (2004) found that adolescents who reported they had sought professional help were those who were less likely to talk to others (informal sources of help) when they had problems.

As mentioned, social support has also been hypothesised to facilitate help seeking (Cauce et al., 2002). For example, when social norms are consistent with seeking help for mental health problems from professional sources, individuals may be encouraged and facilitated to seek professional help. Saunders et al. (1994) found adolescents‟ use of informal sources of help was not associated with the likelihood that adolescents perceived a need for professional help with emotional and behavioural problems. However, adolescents who reported they used informal support (e.g., a family member or a friend) were twice as likely to report that they had sought professional help for a serious personal, emotional, behavioural or mental health problem, compared to those who had not used informal support. In addition adolescents‟ reports that they would seek help from a family member (as opposed to no one or a friend) for a problem with depression or a family problem were strongly associated with the rate at which they actually sought professional help. These results suggest that adolescents who would seek support from family are those who were also more likely to have sought professional help.

Barker and Adelman (1994) found an association between social support and help-seeking from professional sources for medical and psychological problems among adolescents from ethnic minority backgrounds. Perceived social support and social support received from „other important persons‟ assessed with items adapted from Perceived Social Support Friends and Family Scales (Procidano & Heller, 1983) were significantly positively associated with seeking help from a professional (school based clinic, therapist or counsellor outside the school, school counsellor, social worker, clergy, medical personnel, outside clinic or health centre and help from spiritual counsellors or healers). Schonert-Reichl and Muller (1996) also found that seeking help from mothers and friends was positively correlated with seeking help from professionals; however, seeking help from fathers was not associated with seeking help from professionals.

As mentioned, the direction of the relationship between social support and help-seeking is likely to be dependent on social norms and whether the social network encourages adolescents to seek professional help. The relationship between adolescents‟ perceived level of social support and stages of adolescent help seeking has not been investigated; however, it is possible that social support may only be significantly associated with specific stages of help-seeking behaviour for mental health problems. For example, social support may not be strongly related to the internal processes of problem recognition or perceiving a need for professional help and may only facilitate the external process of obtaining and receiving professional help for mental health problems. The role of social support in adolescent help seeking requires further investigation.

As suggested by Rickwood et al. (2005), help-seeking involves *actively seeking out* and *using social relationships.* In order to seek out and use social relationships to help with mental health problems, adolescents require adequate problem solving and coping skills and interpersonal skills. Accordingly, Rickwood et al. (2005) suggested that factors that influenced the process of adolescent help seeking were those that affect individuals‟ abilities to express and articulate problems to others. Similarly, Andersen‟s model (1995) cited adolescents‟ ability to obtain resources to deal with problems as factors that would influence help-seeking behaviour. Furthermore, models of help-seeking have also incorporated adolescents‟ coping strategies as associates of help-seeking (Andersen, 1995; Srebnik et al., 1996). No studies have been conducted examining the association between adolescents‟ interpersonal skills or problem solving and coping ability and their help-seeking behaviour, although these factors are likely to play a role in adolescent help seeking.

In addition to the likely associations between adolescents‟ help-seeking behaviour for mental health problems and their levels of social support, coping ability and problem solving and interpersonal skills, psychosocial factors have been found to be associated with levels of mental health problems (Lewinsohn, Lewinsohn, Gotlib, Seeley, & Allen, 1998; Lewinsohn et al., 1994; Sadowski & Kelley, 1993). For example, adolescents‟ coping skills have been identified as risk factors for depression (Lewinsohn et al., 1994), while self-rated social competence, social support from friends and family and positive problem solving have been identified as protective factors (Lewinsohn et al., 1994; Sadowski & Kelley, 1993). Therefore, it is likely that levels of mental health symptoms and psychosocial factors explain some common variance in adolescent help seeking. This should be considered when examining associations between adolescents‟ levels of mental health problems with stages of help-seeking and also between psychosocial factors with stages of help-seeking behaviour.

Summary of factors

This literature review identified factors found to be associated with adolescent help seeking. It is apparent from the review that results are often inconsistent across studies. These inconsistencies are likely due to the differences in the conceptualisation and measurement of adolescent help-seeking behaviour and also differences in the measurement of the factors associated with help seeking that were employed by these studies.

Only a few of these studies examined the association between key factors with each stage in the help-seeking process, i.e., the extent to which adolescents‟ perceived themselves to have problems or have problems that were worse than their peers‟ problems, perceived a need for professional help with their problems and sought help or attended services

(Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). The results of these few studies suggest factors may have a differential relationship with each stage of the help-seeking process (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). This could explain some of the variation and inconsistency in the results across studies, as studies have assessed different stages of the help-seeking behaviour process. The focus of this thesis is to examine adolescent help seeking within a stage framework and to examine the factors associated with each stage of adolescent help seeking.

The Present Study

Conceptualisation of help-seeking from professional sources

Adolescence is a time of increasing autonomy (Simmons & Blyth, 1987; Simmons et al., 1987) and it is likely adolescents‟ subjective perceptions are fundamental to initiating the help-seeking process. For example, parents may recognise that adolescents are experiencing problems if they exhibit externally observable symptoms but not notice the more subtle symptoms of internalising problems. They may also interpret some degree of antisocial behaviour or emotional instability as „normal behaviour‟ characteristic of the period of adolescence (Moffit, Caspi, Dickson, Silva, & Stanton, 1996). In such circumstances, adolescents must alert others of their problems and the likelihood they will receive professional help relies heavily on their ability and willingness to recognise and report emotional and behavioural problems. This study assesses adolescents‟ subjective experiences and focuses on their perceptions in the context of stages of the help-seeking process.

For this thesis, the conceptualisation of adolescent help seeking (from professional sources of help) was based on key stages of help-seeking behaviour derived from theoretical models of adolescent help seeking (Cauce et al., 2002; Srebnik et al., 1996; Zwaanswijk, Verhaak et al., 2003) and studies of adolescent help seeking for mental health problems (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Verhaak et al., 2003). While the operationalisation of the stages of help-seeking varied across these different theoretical models and studies, common elements of help-seeking behaviour can be identified. Typically, these are: problem recognition; perceiving a need for professional help; and seeking professional help. While the stages employed by the present study are based on these previous studies, they differ from these stages in that they aim to extend previous findings regarding the final stage of help-seeking. Thus, the definition of each stage of help-seeking employed by this study is described below.

Examining adolescents in the initial stages of help-seeking is important given that many adolescents with mental health problems do not seek professional help or attend services (Saunders et al., 1994; Sawyer et al., 2007; Sears, 2004; Verhulst & Van der Ende, 1997; Zwaanswijk, Van der Ende et al., 2003). Problem recognition has consistently emerged from the literature as an important step in the help-seeking process and it is reasonable to presume that help-seeking behaviour will not begin until a problem has been recognised (Cauce et al., 2002; Kessler et al., 1981; Rickwood et al., 2005; Saunders et al., 1994; Sears, 2004; Srebnik et al., 1996; Verhulst & Van der Ende, 1997; Zwaanswijk, Van der Ende et al., 2003; Zwaanswijk, Verhaak et al., 2003). The present review of help-seeking models and studies of adolescent help seeking suggests that problem recognition can originate from various sources. These include the adolescents‟ subjective recognition that they have problems (Cauce et al., 2002; Rickwood et al., 2005; Saunders et al., 1994; Sears, 2004; Srebnik et al., 1996; Zwaanswijk, Van der Ende et al., 2003), a family

doctor‟s and/or clinician‟s recognition of problems or parents‟ recognition of problems (Verhulst & Van der Ende, 1997; Zwaanswijk, Verhaak et al., 2003). The focus of this thesis is determining the factors that may influence adolescents‟ own perceptions of their problems and subsequent help seeking behaviour.

The perception that a problem exists is one element of problem recognition. Another element of problem recognition is the perceived severity of the problem. One method to assess perceived severity of problems is to ask adolescents or parents to gauge the severity of adolescents‟ problems compared to other adolescents‟ problems (Verhulst & Van der Ende, 1997; Zwaanswijk, Van der Ende et al., 2003). The few studies that have included adolescents‟ or parents‟ perceptions of problem severity have demonstrated that adolescents or their parents more often sought help from professional sources when the problems were perceived to be severe (Verhulst & Van der Ende, 1997; Zwaanswijk, Van der Ende et al., 2003).

Although adolescents may recognise they have a problem and also recognise the severity of their problems, they may decide they can cope with problems themselves or to seek help from an informal source. Cauce et al. (2002) suggest that a need for professional help may only be identified when adolescents realise their problems are unlikely to resolve without intervention. Adolescents‟ self-perceived need for professional help and the decision to seek professional help have been incorporated into models and studies of help-seeking behaviour (Cauce et al., 2002; Kessler et al., 1981; Rickwood et al., 2005; Saunders et al., 1994; Sears, 2004; Srebnik et al., 1996; Verhulst & Van der Ende, 1997).

Many adolescents who perceive themselves to have problems that require professional help do not attain the final stage of help-seeking (Saunders et al., 1994; Sears, 2004). The definition and assessment of the final stage of help-seeking has varied across studies. For

example, receiving a referral for mental health services, attending services or asking adolescents whether professional help was sought have each been used as an indication of whether adolescents obtained professional help. However, assessing the rate at which adolescents seek professional help (Saunders et al., 1994; Sears, 2004) does not necessarily indicate that appropriate help was received. Furthermore, attending services does not ascertain whether effective help was received or whether adolescents considered the help they received to have fulfilled their needs. The current study aims to extend findings of previous studies by assessing adolescents‟ perceptions of whether they actually received the help that they needed for their problems. Assessing the final stage of help-seeking in this way enables the determination of not only adolescents‟ perceptions of whether they received help, but also their perceptions of whether this help met their needs, i.e., that they received help appropriate to their need. This stage of help-seeking is therefore based on acknowledgement by the adolescents in question that they themselves feel they have received help for a self-perceived emotional or behavioural problem for which they had recognised their own need for a professional or formal level of help. For simplicity, throughout this thesis the term used is “receiving the help that was needed”, although it must be remembered that this is always in the context of the adolescents‟ self-perception of need and not external (i.e., families, friends or defined by a clinician or diagnostic assessment) perceptions of need.

In summary, this study employs three fundamental stages of help-seeking behaviour identified from the literature. These stages are: “problem recognition” (stage 1); “perceiving a need for professional help” (stage 2); and “receiving the help that was needed” (stage 3). As with the aforementioned models of help-seeking behaviour, the model of help-seeking used in this thesis is conceptual only and has not been empirically tested.

Overall study aims and research questions

This study has three primary aims:

Aim I: To examine adolescents‟ help-seeking behaviour within a conceptual model consisting of three primary stages: “problem recognition”; “perceiving a need for professional help”; and “receiving the help that was needed”.

Aim II: To determine the significance and the strength of associations between adolescents‟ levels of mental health symptoms and the likelihood they will: i) recognise themselves as having emotional or behavioural problems; ii) perceive a need for professional help with these problems; and iii) report receiving the help that was needed.

Aim III: To determine the significance and the strength of associations between socio-demographic characteristics and the likelihood adolescents will: i) recognise themselves as having emotional or behavioural problems; ii) perceive a need for professional help with these problems; and iii) report receiving the help that was needed.

The following section describes the associations that are examined in this study in order to investigate these aims. Given the many proposed associations in this study, hypotheses are informally described within the context of the literature in this section and are formally stated at the beginning of each of the results chapters as they are addressed.

It is important to note that each of the proposed associations with the help-seeking stages explored in this study is examined only among adolescents who attained the previous stage of help-seeking. That is, factors associated with perceiving a need for professional help are examined among adolescents who perceived they had emotional or behavioural problems and factors associated with adolescents‟ reports they received the help they needed are

examined among adolescents who perceived a need for professional help. This approach allows the identification of factors that may facilitate or hinder adolescents‟ progression to the next stage of help seeking.

Associations investigated in this study

Mental health symptoms

As noted in the present literature review, the exact nature of the relationship between adolescents‟ levels of mental health problems and their help-seeking behaviour is unclear. While adolescents with higher levels of mental health problems have been found to attend services more frequently (Laitinen-Krispijn et al., 1999; Zwaanswijk, Van der Ende et al., 2003), those with higher levels of suicidal ideation have demonstrated a decreased willingness to seek professional help for their problems (Carlton & Deane, 2000). Furthermore, the results of a study conducted by Saunders et al. (1994) suggested that adolescents with higher levels of suicidal ideation were more likely to perceive a need for professional help with their problems but were less likely to report they sought professional help.

This negative association has primarily been found between suicidal ideation and adolescents‟ help-seeking intentions and their reports they sought professional help (Barnes et al., 2001; Carlton & Deane, 2000; Deane et al., 2001; Saunders et al., 1994), although there is some evidence it may occur with other types of mental health problems. For example, Sears (2004) found adolescents who sought professional help had lower levels of anxiety than those who did not seek professional help. Furthermore, Wilson et al. (2007) found adolescents and young people with higher levels of depression had lower intentions to seek help for a personal emotional problem; however, only from parents and not from

professional sources of help. Therefore, it is not clear whether other types of mental health problems, besides suicidal ideation, are also negatively associated with the help-seeking process. This study aims to extend the findings of these previous studies by further investigating whether different types of mental health problems (other than suicidal ideation) are positively or negatively associated with adolescents‟ participation in each stage of help-seeking investigated in this study.

Studies that found higher levels of mental health problems (suicidal ideation or anxiety) were related to a decreased likelihood of adolescents reporting they sought professional help examined this relationship among adolescents who attained previous stages of help-seeking (Saunders et al., 1994; Sears, 2004). This study similarly examines the relationship between adolescents‟ levels of mental health problems with their attainment of the final stage of help-seeking among those who attained previous stages. As noted previously, this study differs to previous studies as it does not assess whether adolescents *sought* professional help as the final stage of help-seeking, but assesses whether those who perceived a need for professional help actually considered themselves to have *received* the help they needed, as seeking professional help does not necessarily mean that adequate help was received by the adolescent. Therefore, this study extends findings of previous studies by determining whether higher levels of mental health problems are negatively associated with adolescents‟ reports they had received the help they perceived themselves to need.

The literature review also suggested that levels of internalising and externalising problems may have differential associations with each stage of help seeking. The results of studies conducted by Sears (2004) and Zwaanswijk, Van der Ende et al. (2003) found that higher levels of any type of mental health problem, whether internalising or externalising in

nature, were significantly associated with adolescents‟ attainment of the earlier stages of help seeking, namely problem recognition and perceiving a need for professional help. However, Sears found that adolescents who reported they had serious problems in the last year differed from those who did not more on levels of externalising problems (substance abuse, school misconduct and antisocial behaviour) than on levels of internalising problems (depression, anxiety and self esteem). Sears also found that adolescents who perceived a need for professional help differed more from those who did not on levels of depressive symptoms than other types of problems. Furthermore, Zwaanswijk, Van der Ende et al. found that when both externalising problems and internalising problems were examined as predictors of receiving a referral for mental health services (adjusting for the effects of each other), adolescents with higher levels of externalising problems were significantly more likely to receive a referral for mental health services, but levels of internalising problems were not significantly associated with receiving a referral for mental health problems. This study further investigates the differential relationships that levels of internalising and externalising problems may have with each stage of help-seeking behaviour investigated in this study.

To determine the relationships between adolescents‟ levels of mental health problems and their attainment of each stage of help-seeking, three aspects of mental health were examined: i) adolescents‟ levels of total emotional and behavioural difficulties; ii) their levels of depression; and iii) their levels of anxiety. A broad measure of adolescents‟ levels of total emotional and behavioural difficulties was included to inform the relationship between levels of overall mental health problems and adolescents‟ attainment of each stage of help-seeking. In addition, the specific mental health problems of anxiety and depression were selected for inclusion as these are the most prevalent mental health problems in young people and are the leading causes of burden of disease among Australian young people

aged 15 to 24 years (AIHW, 2007). Furthermore, while negative relationships have most commonly been found between level of suicidal ideation and various indicators of help-seeking, negative associations have also been found between levels of depression and anxiety and adolescents‟ help-seeking intentions (Wilson et al., 2007) and their reports they sought professional help (Sears, 2004). Therefore, this study examined the relationships between adolescents‟ levels of total emotional and behavioural difficulties, depression and anxiety and their rates of participation in each stage of help seeking among those who attained the previous stage of help seeking.

Note that adolescents‟ levels of total emotional and behavioural difficulties, depression and anxiety are generically referred to as *levels of mental health problems* in this study for brevity of description, but referred to as their individual elements in specific analyses and whenever else appropriate. It is hypothesised that adolescents with higher levels of total emotional and behavioural difficulties, depression and anxiety will be more likely to participate in the earlier stages of help-seeking (i.e., problem recognition and perceiving a need for professional help with problems) but will be less likely to participate in the latter stage (report they had received the help they perceived themselves to need).

The current study also investigates whether internalising and externalising problems are differentially associated with adolescents‟ participation in each stage of help-seeking. To assess differences in help-seeking behaviour by levels of internalising and externalising problems, the associations between the individual subscales, which comprise the measure of total emotional and behavioural difficulties and each stage of help-seeking, will be examined. One of these subscales assesses emotional problems and three scales assess externalising problems (i.e., conduct problems, hyperactivity and peer problems). Therefore, comparing the variance explained in each stage of help-seeking by each of these

variables provides an indication of whether internalising or externalising problems is differentially associated with each stage of help-seeking. Based on the finding of Sears‟ study (2004), it is hypothesised that adolescents with higher levels of externalising problems will be more likely than those with higher levels of internalising problems to recognise they have emotional or behavioural problems or more problems than their peers. Also based on these findings (Sears), it is hypothesised that adolescents with higher levels of internalising problems will be more likely than those with higher levels of externalising problems to perceive they need professional help with their problems. The current study also hypothesised that adolescents with higher scores on measures of externalising problems will be more likely than those with higher levels of internalising problems to report that they had received the help they needed, based on results found by Zwaanswijk, Van der Ende et al. (2003).

As mentioned in the literature review, it is likely that adolescents‟ levels of mental health problems and psychosocial factors explain some common variance in their help-seeking behaviour. Therefore, the relationships found between adolescents‟ levels of total emotional and behavioural difficulties, depression and anxiety, with each stage of help-seeking behaviour will be examined, adjusting for psychosocial variables. This enables the determination of the unique variance that adolescents‟ levels mental health problems explain in help-seeking, independent of the variance shared with psychosocial variables.

Socio-demographic characteristics

It is evident from the present literature review that gender, ethnicity, parental employment and parental status (among other socio-demographic factors) have been significantly associated with many indicators of adolescent help seeking, although only a few studies have examined their association with individual stages of help-seeking (Saunders et al.,

1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). The results of these few studies suggest that socio-demographic factors may have differential associations with each stage of help-seeking, although results have varied across studies as evidenced by the previous literature review (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). This thesis investigates the strength and significance of the associations between selected socio-demographic characteristics (gender, language spoken at home, parental marital status and parental employment status) with each stage of adolescent help seeking.

The results of studies conducted by Sears (2002), Saunders et al. (1994) and Zwaanswijk, Van der Ende et al. (2003) suggest that gender may be more strongly associated with earlier stages of help-seeking behaviour (problem recognition and perceiving a need for professional help) rather than the latter stages of help seeking (likelihood of seeking professional help or receiving a referral for mental health services). Therefore, studies that have found that females were more likely than males to seek professional help and attend services (Schonert-Reichl & Muller, 1996; Gasquet et al., 1997) may have only found this association because they had not taken into account the gender difference in the earlier stages of help-seeking, namely problem recognition and perceiving a need for professional help. This study further investigates the association between gender and adolescents‟ attainment of each stage of help-seeking. It is hypothesised that females will be more likely than males to perceive they have emotional or behavioural problems and perceive a need for professional help, but they will not be more likely to report receiving the help they needed.

Despite the strong theoretical argument for the link between ethnicity and culture with help-seeking (Cauce et al., 2002), few studies have empirically assessed the strength of the

association between ethnicity and different stages of adolescent help seeking. Studies conducted in the USA have found that adolescents from an ethnic minority background were less likely to seek professional help or attend services and encountered more barriers to seeking professional help than those who were not from an ethnic minority background (Kataoka et al., 2002; Kuhl et al., 1997; Zhang, Snowden, & Sue, 1998). The role of ethnicity in Australian adolescents‟ participation in stages of help-seeking behaviour has not been assessed. This study did not ascertain the ethnicity of adolescents but ascertained the language they predominantly spoke at home. Therefore, the relationships between the language adolescents spoke at home and their attainment of each stage of help seeking are investigated in this study. It is hypothesised that in Australia, adolescents from non-English speaking backgrounds will be less likely to participate in each stage of help-seeking than adolescents from an English speaking background.

Results of numerous studies have indicated that adolescents from one-parent families or from families with divorced or separated parents were more likely to participate in each stage of help-seeking (Barker & Adelman, 1994; Laitinen-Krispijn et al., 1999; Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). Based on these previous findings, in this study it is hypothesised that adolescents from families where parents are not living together (e.g., separated or divorced, widowed, have never lived with parents) will be more likely to participate in each stage of help-seeking than adolescents with parents who live together.

Parents‟ paid employment status may also potentially influence adolescent help seeking behaviour through the effect it may have on parents‟ resources to assist adolescents when they experience mental health problems, for example, financial resources and time. While no previous studies have investigated the association between parental paid employment

status and stages of help-seeking among an Australian sample of adolescents, the directions of the hypothesised associations between mother‟s and father‟s paid employment status and adolescents‟ attainment of different stages of help-seeking are still suggested based on the effect that parental paid employment may have on available household income.

Sawyer et al. (2007) found that a significantly higher proportion of adolescents aged 13 to 17 who had mental health problems in the clinical range (assessed by the CBCL) were from families with lower incomes, compared to those who did not have problems in the clinical range. It is hypothesised that adolescents with mothers or fathers who are not in full time paid employment will be more likely than adolescents with mothers or fathers who are in full time paid employment to perceive they have emotional or behavioural problems, and need professional help for these problems, because they may experience a higher level of mental health problems. Furthermore, in an Australian study conducted by Sawyer et al. (2001), parents reported that the cost of services was one of the main barriers to attaining help for their children‟s mental health problems. Due to the financial restraint that may be encountered by families with parents who do not work in full time paid employment, it is hypothesised that adolescents with parents who are not in full time paid employment will be less likely to report they received the help they needed than adolescents with parents in full time paid employment.

As noted in the literature review, it is important to examine the association between socio-demographic characteristics and indicators of help seeking, adjusting for adolescents‟ levels of mental health problems (Gasquet et al., 1997; Laitinen-Krispijn et al., 1999; Saunders et al., 1994; Zwaanswijk, Van der Ende et al., 2003). This accounts for the possibility that the variation in adolescents‟ help-seeking behaviour by their socio-demographic characteristics may be influenced by adolescents‟ levels of mental health

problems and the relationship between their levels of mental health problems and each stage of help-seeking. Gender, family status, language spoken at home and parental paid employment status are all conceptualised to influence help-seeking beyond that explained by adolescents‟ levels of mental health problems through the possible influence of social norms and/or social stereotypes, or through externally governed factors such as financial constraint. Therefore, it is hypothesised that these associations will persist beyond that accounted for by adolescents‟ levels of mental health symptoms.

Chapter structure for the remainder of this thesis

The following chapter (Chapter 2) describes the methodology utilised for the present study. Chapter 3 describes the sample and the help-seeking behaviour of adolescents in this study. Chapters 4 to 10 examine the associations between adolescents‟ levels of mental health symptoms and socio-demographic characteristics with adolescents‟ attainment of each stage of help-seeking, and Chapter 11 provides an overall synthesis of the main findings of the study.

CHAPTER 2: METHOD

The data utilised for this study were collected for the baseline assessment of the *beyondblue* Schools Research Initiative (*bb*SRI). The *bb*SRI is a school-based depression initiative conducted across secondary schools in Queensland, Victoria and South Australia. The initiative was designed to reduce levels of depressive symptoms among adolescents commencing high school. Detailed information regarding the *bb*SRI can be obtained from the website (beyondblue, 2007b) and Sawyer et al. (2009). The initiative commenced in 2003 and finished at the end of 2007. The following chapter describes the methodology for the *bb*SRI relevant to the current study.

Ethics

Permission to contact schools and conduct the *bb*SRI was sought from the education systems of South Australia, Victoria and Queensland, as well as from ethics committees of each participating University team prior to the commencement of the study. In Queensland, formal permission was sought from the University of Queensland Behavioural and Social Sciences Ethical Review Committee, Education Queensland (the state education department) and the Catholic Education Office. In South Australia, formal permission was sought from The Department of Education and Children‟s Services (DECS). In Victoria, approval was sought from the Research Ethics in Human Research committee at the Royal Children‟s Hospital and the Department of Education and Training and Catholic Education Office.

Sample selection

For the *bb*SRI study, a matched-sample design was selected to allow for comparisons between intervention and control schools. However, the aim of the present study was to

investigate adolescent help seeking behaviour and not to evaluate the effects of the *beyondblue* intervention. Therefore, comparisons between intervention and control groups were not necessary to address the aims of the present study. Nonetheless, the matched-sample design did influence the criteria by which schools were selected (and subsequently matched) in the *bb*SRI and it is therefore relevant to describe the origin of this sample.

An adequate representation of schools from metropolitan and non-metropolitan areas was sought as well as a cross-section of government, Catholic and independent schools. Eligible schools were any government, Catholic or independent school from both metropolitan and non-metropolitan regions, with Year 8 enrolments of 100 or more students, across the three states. An invitation for an „expression of interest to participate" was sent to eligible schools in Queensland, South Australia and Victoria. Return of the expression of interest did not oblige a school to participate in the research initiative; rather, it was an indication of interest to gather further information and possibly negotiate participation. Once a school had responded to the expression of interest, a discussion was held with that school by project staff. Schools that accepted the invitation were informed of the need for randomisation and that professional and financial support to participate in the study would be available. One hundred and five schools accepted the invitation to participate in the study (62 in Victoria, 23 in South Australia and 20 in Queensland). In each state, schools wishing to participate were assigned to one of the following six categories:

a) Metropolitan state schools ranked in the top third of Socio-economic Status (SES)

b) Metropolitan state schools ranked in the middle third of SES

c) Metropolitan state schools ranked in the lower third of SES

d) Non-metropolitan state schools

e) Catholic School Sector

f) Independent School Sector

Ranking schools by social and educational disadvantage was achieved by using state-based indices for the participating states. In Queensland, schools were ranked using the Index of Relative Socio Economic Disadvantage (IRSED) that is employed by the Queensland state education department. The IRSED is an Australian Bureau of Statistics (ABS) measure of relative disadvantage devised from information collected at the 1996 census and constructed from information used to describe each Census Collection District. This information was predominantly based on employment/unemployment, income, education, family structure, housing characteristics, Aboriginality and English and language fluency.

In South Australia, schools were ranked utilising the Index of Educational Disadvantage. The Index of Educational Disadvantage was developed by DECS and was based on a combination of departmental and ABS data. It divides all DECS schools into one of seven categories of educational disadvantage based on four measures: parental income, parental education and occupation, Aboriginality and student mobility.

In Victoria, schools were grouped using the "like school groups" ranking system, developed by Victoria"s Department of Education and Training to allow for the composition of schools" student populations in assessment of academic performance. This ranking system categorises all Victorian schools into one of nine groups based on demographic information of students, including the main language spoken at home and the proportion who receive the Education Maintenance Allowance or Commonwealth Youth Allowance.

For each state, metropolitan schools were divided into three groups of equal size based on their rank, ensuring that the schools were spread across social and educational levels for each state. Schools from each category were matched on the basis of SES and total enrolment size. When the number of schools that expressed a desire to participate in the *bb*SRI exceeded the number of schools required, additional data describing the schools were used to identify pairs that were best matched on other key characteristics such as the male to female ratio of the school and reception/"prep" to Year 12 status.

Eight pairs of schools from SA and VIC and nine pairs from QLD were selected for participation in the study. The 50 participating schools consisted of 42 mixed-gender schools and 8 single-gender schools (six female only and two male only).

One member of each school pair was randomly assigned to the "intervention" or "comparison" group. Schools assigned to the intervention group went on to participate in all four components of the *beyondblue* intervention subsequent to the baseline assessment, whereas the comparison group received one minor component of the intervention only, namely "community forums". As baseline data were used in the current study, the details of the *beyondblue* intervention component are not described in this thesis but are available in Spence et al. (2005).

Informants

Data were collected from participating students, school staff, school leaders and *beyondblue* facilitators/staff. The current study utilised only student self-report data collected through the *beyondblue* student survey. Students" responses to the survey were confidential with one modification for the students from Queensland. The state-based ethics committee required the school guidance officer (or the school"s equivalent to this

role) to be notified if depression scores on the Centre for Epidemiological studies for Depression (CESD; Radloff, 1977) were above a cut-off of 30 (the CESD has a possible range of 0 to 60, with higher scores indicating higher levels of depression). A total of 98 students in the 9 Queensland intervention schools and 94 students in the 9 Queensland comparison schools had CESD scores above 30 and thus their schools were notified accordingly.

Response rates, parental and student consent

Parents and students were provided with information sheets prior to the commencement of the study. Active consent was obtained from both parents and students prior to student surveys being administered. Students received a small gift when they returned their parental consent forms whether consent was obtained or not.

Data were collected from 5,634 students from the 50 participating schools. The overall student response rate for completion of the survey was 64% (as a percentage of total enrolment for Year 8 students across all schools).

Procedure

Data were collected from students during one school lesson. Students were provided with verbal and written standardised instructions and completed the questionnaire under the guidance and instruction of a *beyondblue* facilitator with teacher support during June and July 2003. Only data from selected sections of the survey were used in the present study. A copy of the full survey can be viewed in Appendix A.

Measures

The measures used in the *bb*SRI were selected based on their psychometric properties, their previous use with adolescents and their brevity, due to the large number of constructs to be measured in the study and limited time given to complete the questionnaire. Where no suitable assessment tool was available, existing measures were modified or measures were designed specifically for the study. A pilot study was conducted with 207 adolescents to determine the readability of the questionnaire and also to determine some reliability and validity of these measures. The following section describes only the measures from the *bb*SRI student survey relevant to the present study. For more detailed information on the psychometric properties of these measures and all measures in the *bb*SRI and their psychometric properties, refer to Sawyer et al. (in press) and the *bb*SRI website (beyondblue, 2007a).

Help-seeking behaviour

The stages of help-seeking behaviour assessed in this study were: i) *Problem recognition;* ii) *Perceiving a need for professional help;* and iii) *Receiving the help that was needed*.

The reader is reminded that the final stage of help-seeking (Stage iii) is based on acknowledgement by the adolescents in question that they themselves feel they have received help for a self-perceived emotional or behavioural problem for which they had recognised their own need for professional help. For simplicity, the term used is "receiving the help that was needed", although it must be remembered that this is always in the context of the adolescents" self-perception of need and not external (i.e., families, friends or defined by a clinician or diagnostic assessment) perceptions of need.

These stages were assessed with items based on questions previously used in the National Mental Health Survey (Sawyer et al., 2000) and are similar to measures of adolescent help seeking that have been employed in other studies (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). These help-seeking behaviours were assessed with the following questions:

1. In the last 6 months, do you think you have had any emotional or behavioural problems?

   Possible responses: NO/YES

2. During that time, did you tend to have more emotional or behavioural problems than other boys/girls your age?

   Possible responses: NO/YES/NOT APPLICABLE

3. Do you think you need or needed professional help with these problems?

   Possible responses: NO/YES/NOT APPLICABLE

4. Did you receive the help you needed for these problems?

   Possible responses: NO/YES/NOT APPLICABLE

For the purpose of the present study, *problem recognition* was operationalised as a positive response to Question 1 or Question 2, which ascertained adolescents‟ subjective perception of whether they had experienced any emotional or behavioural problems or more of these problems than their peers. Adolescents‟ perception of the severity of their problems also comprised the stage of problem recognition and was operationalised as a positive response to Question 2, which ascertained whether adolescents perceived themselves to have more problems than their peers.

Perceiving a need for professional help was operationalised as a positive response to Question 3, which ascertained whether adolescents had perceived a need for professional

help with the emotional and behavioural problems they had experienced (from Question 1). The construct of *Receiving the help they needed* was operationalised as a positive response to Question 4 when adolescents had first recognised they had emotional or behavioural problems (as identified in Questions 1 and 2) and a need for professional help with these problems (as identified in Question 3).

For the purposes of this study, to determine the factors associated with adolescents‟ perceptions of whether they had received the professional help they had perceived themselves to need for their emotional or behavioural problems (as identified in Questions 1, 2 and 3), analyses were necessarily restricted to adolescents who had perceived themselves to have emotional and behavioural problems and a need for professional help with such problems. However, another group of adolescents also reported they had received the help they needed when they did not perceive a need for professional help. As these adolescents did not perceive a need for professional help but still reported they had received the help they needed, it is likely these adolescents received help from an informal source. It is also possible that while these adolescents did not perceive a need for professional help, they may have still received the help they needed because a parent facilitated them to attend a service or professional source of help. A limitation of this measure is that it is unclear as to whether the source of help received by these adolescents was professional or informal. These adolescents were investigated further in subsidiary analyses (Chapter 10) and interpreted with due caution.

Socio-demographic characteristics

Adolescents‟ socio-demographic characteristics were obtained from the *beyondblue* student self-report survey (see Appendix A). The socio-demographic information used in this study included gender, language spoken at home, parental status and mothers‟ and fathers‟ paid

employment status. The specific questions and response options for each question are available from Appendix A; however, the characteristics of language spoken at home, parental status and mothers‟ and fathers‟ employment status are briefly described below.

Language spoken at home was ascertained by determining whether adolescents spoke English or another language at home. Adolescents who spoke both English and another language at home or only another language at home were compared to those who spoke only English at home.

For parental status, adolescents who reported their parents were living together were compared to those with a range of other parental situations. These other situations were: having parents who were separated or divorced; having one or more parent(s) deceased; having parents who had never lived together; or another parental situation that was not already specified in the question.

Paid employment status was assessed separately for fathers and mothers to determine the differential effect that father‟s and mother‟s paid employment status might have on adolescent help-seeking. Fathers‟ and mothers‟ paid employment status was assessed by ascertaining from adolescents whether their mother and father worked in full time paid employment, part time paid employment, were not working in paid employment or were retired. Adolescents with fathers who worked in full time paid employment were compared to those with fathers from each of the other employment categories. Similarly, adolescents with mothers who worked in full time paid employment were compared to those with mothers from each of the other employment categories.

Measures of mental health problems

Three aspects of adolescents‟ mental health were assessed by this survey. These were adolescents‟ levels of: i) total emotional and behavioural difficulties; ii) depression; and iii) anxiety.

Total emotional and behavioural difficulties

For brevity, adolescents‟ levels of total emotional and behavioural difficulties are referred to as *levels of total difficulties* throughout the remainder of this thesis. The Australian self-report version of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) for 11 to 17 year olds was used to assess adolescents‟ total difficulties. The SDQ consists of 25 items and can be completed in 5 minutes (Goodman, 1997). Respondents are asked to rate each statement as “Not True”, “Somewhat True” or “Certainly True”. Five subscales (five items each) and a summary total difficulties scale can be derived from these 25 items. The five subscales are Conduct Problems, Hyperactivity, Emotional Symptoms, Peer Problems and Prosocial Behavior. The SDQ total difficulties score consists of the sum of the four problem subscales and does not include the Prosocial Behaviour subscale.

The internal consistency of the SDQ individual subscales and the total difficulties scale has been previously demonstrated with adolescents (Goodman, 2001; Goodman, Meltzer, & Bailey, 1998). Internal consistency for the total difficulties score for the present sample was good (α = .82) and acceptable for the individual subscales, with alpha coefficients ranging from .58 (Peer Problems) to .73 (Emotional Symptoms).

The test-retest reliability of the total difficulties scale over a 6-month interval showed moderate stability at r=.62 (Goodman, 2001). The SDQ has also demonstrated good construct validity with the well-established behavioural screening measure, the Child

Behaviour Check List (CBCL) (Goodman & Scott, 1999). In addition, the SDQ showed agreement with psychiatric diagnosis in a sample of 11 to 15 year olds, as determined by the Development and Well-being Assessment (DAWBA) (Goodman, Ford, Richards, Gatward, & Meltzer, 2000) and The International Statistical Classification of Diseases and Related Health Problems Tenth Revision (ICD-10) (Goodman, 2001; Goodman, Ford, Simmions, Gatward, & Meltzer, 2000; World Health Organization, 1994)).

The SDQ total difficulties score and its subscales have been found to discriminate between clinical and community samples of adolescents (Goodman et al., 1998). Further, it has demonstrated a sensitivity ranging from 23% to 63% and a specificity of approximately 94% (Goodman, 2001; Goodman, Ford, Simmions et al., 2000). Reported Negative Predictive Values range from 92% to 96% and Positive Predictive Values from 35% to 53% (Goodman, 2001; Goodman, Ford, Simmions et al., 2000).

Depressive symptoms

Adolescents‟ depressive symptoms were assessed using the Centre for Epidemiological Studies Depression Scale (CESD) (Radloff, 1977). The CESD consists of 20 items pertaining to a wide range of depressive symptoms. Respondents were asked to rate the frequency of occurrence of each symptom in the past week on a 4-point scale with responses ranging from “Rarely or none of the time (less than 1 day)” to “Most or all of the time (5-7 days)”. Four items of the scale are reverse-worded to reflect a positive behaviour. Each response is assigned a score from 0 to 3, with a total score ranging from 0 to 60. Cut-offs are often employed on the CESD to determine the proportions of participants with mild, moderate and severe levels of depression. The cut-offs employed for this study were adapted from a study conducted by Roberts, Lewinsohn and Seeley (1991) with a sample of adolescents. Adolescents with a CESD score of 16 to 20 (inclusive) were classified as

mildly depressed, those with a score of 21 to 30 (inclusive) as moderately depressed and those with a score of 31 to 60 (inclusive) as severely depressed.

The CESD was originally designed to assess depression levels in adults but has been adapted to adolescent populations (Dierker et al., 2001; Garrison, Addy, Jackson, McKeown, & Waller, 1991; Garrison, Jackson, Marsteller, McKeown, & Addy, 1990; Garrison, Schluchter, Schoenback, & Kaplan, 1988; Needham & Crosnoe, 2005; Roberts et al., 1991; Wilcox, Field, Prodromidis, & Scafidi, 1998; Wintre & Crowley, 1993). The CESD has demonstrated sound psychometric properties with an adolescent sample, with reported alpha coefficients ranging from .84 to .90 (Garrison et al., 1991; Garrison et al., 1988; Roberts et al., 1991). Strong internal consistency of the CESD was also found with both the pilot sample (α = .90; n= 207) and the present sample (α = .79; n = 5,634).

Other studies with adolescent samples have found high correlations (.61 to .70) between the CESD and other depression measures such as the Beck Depression Inventory (BDI) (Beck et al., 1961) and the Child Depression Inventory (CDI) (Faulstich, Carey, Ruggiero, Enyart & Gresham, 1986; Kovacs & Beck, 1977; Roberts et al., 1991). A moderate correlation (.48) has also been found with the Hamilton Depression Scale (HAM-D) (Hamilton, 1960; Roberts et al., 1991).

Dierker et al. (2001) found the CESD was adequately able to identify adolescents with major depression as assessed by diagnostic interview modules from the DSM-IV. Furthermore, Garrison et al. (1991) found the sensitivity of the CESD to be 83% for females and 85% for males and the specificity to be 77% for females and 49% for males. Roberts et al. (1991) also assessed the overall sensitivity and specificity of the CESD to detect major depression in adolescents. In their study, major depression was assessed by a diagnostic interview utilising the Schedule for Affective Disorders and Schizophrenia for

School-Age Children (K-SADS; Chambers et al., 1983) and a 14-item version of the HAM-D. Sensitivity was found to be 83.7% and specificity to be 75.2% for this study. In addition, Garrison et al. (1991) reported that adolescents‟ mean score on the CESD was significantly higher (by approximately one standard deviation) for adolescents with depressive diagnoses (from the DSM-III) than those with no affective disorder.

Levels of test-retest reliability were also found to be acceptable within an adolescent population (Faulstich et al., 1986; Garrison et al., 1991). Faulstich et al. reported a test-retest reliability of .69 over a three-week interval for adolescents aged 12 to 17 years. In addition, Garrison et al. found a test-retest reliability of .61 over a one-week interval for adolescents with a mean age of 16.6 years.

Anxiety symptoms

Level of anxiety symptoms was assessed with eight items from the Spence Children‟s Anxiety Scale (SCAS) (Spence, 1998) that reflect symptoms of anxiety. This is a reduced version of the original SCAS, which was developed specifically for the study. For this measure, respondents are asked to rate how often each of the described feelings are experienced with the available responses of “Never”, “Sometimes”, “Often” or “Always”. The measure in its current form demonstrated good internal consistency with the present sample ($\alpha = .87$).

The original SCAS consists of 44 items and demonstrates good internal reliability (.92) (Muris, Schmidt, & Merckelbach, 2000; Spence, 1998). The SCAS has demonstrated construct validity with other measures of anxiety. The total anxiety score of the SCAS was highly correlated with the Revised Children‟s Manifest Anxiety Scale (RCMAS) ($r = .71$) (C. R. Reynolds & Richmond, 1978) and also with the Screen for Child Anxiety Related

Emotional Disorders (SCARED) (r = .89) (Birmaher et al., 1997). Furthermore, children clinically diagnosed with social phobia and co-morbid social-separation (diagnosed by parental diagnostic interviews) were found to have significantly higher SCAS total scores than a non-clinical control group (Spence, 1998). The test-retest reliability of the SCAS (conducted over a 6 month period) was .60, thus demonstrating some stability over time (Spence, 1998).

Measures of psychosocial functioning

Adolescents‟ problem solving and coping ability, interpersonal skills and their perceived level of social support were assessed to determine adolescents‟ level of psychosocial functioning. These variables were treated as covariates when investigating associations between adolescents‟ levels of mental health problems and stages of adolescent help seeking behavior in this study.

Problem solving and coping skills

The Constructive Problem Solving Skills scale was devised specifically for use in the current study and assessed adolescents‟ levels of problem solving and coping skills. This scale consists of 12 items adapted from the Social Problem Solving Inventory-Revised scale (SPSI-R) (D'Zurilla, Nezu, & Maydeu-Olivares, 2002) and the Social Report Coping Scale (SRCS) (Causey & Dubow, 1992). It assesses the degree to which respondents report that the items reflect their own behaviour or feelings when faced with specific situations, utilising a 5-point scale ranging from “not at all true of me” to “extremely true of me”. The 12 items assess social support seeking behaviour (4 items), positive problem orientation (4 items) and rational problem solving (4 items). The Constructive problem solving scale was found to have good internal consistency with the present sample (α = .87).

The scales from which the items of the constructive problem solving scale were adapted have demonstrated sound psychometric properties (Causey & Dubow, 1992; D'Zurilla et al., 2002). The SPSI-R has been used previously with adolescents and exists in a full 52-item version and shorter 25-item version. For the present study, items were adapted from the 25-item version. Internal consistency coefficients for the 25-item version ranged from .80 to .85. Test-retest reliability was also established over a 3-week period for this version (D'Zurilla et al., 2002). The 25-item version has comparable internal consistency and test-retest reliability with the full version (D'Zurilla et al., 2002).

The original SRCS consists of 34 items with four coping sub-domains: seeking social support, problem solving, distancing and emotional reaction. The present study uses items drawn from the distancing and seeking social support subscales. The subscales of the SRCS have demonstrated adequate internal consistency, with alphas ranging from .68 to .82 (Causey & Dubow, 1992). The SRCS has also demonstrated some construct validity with measures of self-esteem and anxiety (Causey & Dubow, 1992).

Interpersonal skills

Adolescents‟ interpersonal skills were assessed using 15 items from the modified Adolescent Interpersonal Competence Questionnaire (AICQ) (Buhrmester, 1990). The original AICQ consists of 40 questions designed to measure social competence in adolescents. The AICQ assesses the five domains of Initiating relationships, Providing emotional support, Asserting influence, Self-disclosure and Conflict resolution. For each item, respondents are asked to rate “how good they are…” on each social competency on a five-point scale that ranges from “Poor at this” to “Extremely good at this”. The version of this scale used in the present study consisted of three items from each of the five domains. For the present sample, the internal consistency of this shortened scale was found to be

good for the full 15 items (α=.89). For the individual subscales, the internal consistency was also sound, with alpha coefficients ranging from .57 to .83.

Good internal reliability has been reported for the full scale (Buhrmester, 1990). Validity for the full scale has been demonstrated through correlations with other measures of adjustment such as self-esteem and efficacy, loneliness, friendship intimacy and sociability (Buhrmester, 1990; Grissom & Borowski, 2002). Furthermore, low but significant correlations have also been found between the full scale and depression (Buhrmester, 1990; Jenkins, Goodness, & Burhrmester, 2002).

Perceived level of social support

Adolescents" perceived level of social support was assessed with the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet, Dahlem, Zimet & Farley, 1988; Zimet, Powell, Farley, Werkman & Berkoff, 1990). This scale has been used previously with adolescents (Canty-Mitchell & Zimet, 2000; Zimet et al., 1990). The MSPSS consists of 12 items that assess adolescents" perceptions of support from family, friends and a significant other. A „significant other" is whomever the adolescent perceives as a „special person" in their lives, such as a boyfriend or girlfriend, a family member or an adult outside the family.

Respondents are asked to rate how strongly they agree or disagree with statements regarding social support on a seven-point scale that ranges from strongly disagree (score of one) to strongly agree (score of seven). Subscales are computed reflecting the respondent"s perceived support from Family, Friends and a Significant Other, with each subscale consisting of four items. The subscale score is the mean score of the four items in each subscale.

Good internal consistency for the three subscales has been found with an adolescent sample, with alpha coefficients that ranged from .81 to .92 (Zimet et al., 1990). The internal consistency of the three subscales was also good for the present study, with alphas ranging from .87 to .90.

Zimet et al. (1990) assessed the validity of the Significant Other subscale by comparing married paediatric residents with single paediatric residents. The married residents reported significantly greater support from a "significant other" than single residents, whereas there was no difference found between the groups for the friend or family subscales. To assess the validity of the Family subscale, Zimet et al. (1990) assessed the frequency with which adolescents shared concerns with their mothers. The Family subscale was found to be associated with adolescents" frequency of sharing concerns with their mothers (beyond that of the friends and significant other subscale).

Approach to statistical analyses

Because the sample used in the *bb*SRI was a school based sample, multilevel modelling was used to determine the extent to which differences in outcome scores could be explained by differences between schools (as students were nested within schools). The intra-class correlation (ICC) was determined using the MLwiN statistical package (Rasbash, Charlton, Browne, Healy & Cameron, 2005) for two levels (level 1 between students; level 2 between schools). For all outcome measures in the *bb*SRI, the proportion of variance that could be accounted for at the school level was less than 10%. Multilevel methods are generally used only when the ICC for the between schools effect is greater than 10% of the total variance in the outcome (Lee, 2000). Therefore data were analysed using single level analysis in this study. The statistical software used to conduct analyses for this study was the SPSS Version 14.0.0 (SPSS 14.0.0, 2005). As the continuous scales

used in the present study each had a different range, standardised values (*z* scores) were calculated to place the continuous variables on a common scale for ease of comparison. For descriptive statistics and simple analyses, raw scores were analysed and presented; however, for the figures and logistic regression analyses, the z-scores (standardised scores) were utilised.

Statistical analyses

Appropriate descriptive statistics are reported (either proportions as percentages or mean scores and standard deviations) at the beginning of each chapter and simple analyses were performed to guide the choice of variables to be included in logistic regression analyses. For continuous predictor variables, independent sample t-tests were conducted when two groups of adolescents were compared, or One-way Analysis of Variances and post hoc comparisons were conducted when more than two groups of adolescents were compared. These analyses determined whether there were statistically significant differences between mean scores of adolescents who did or did not participate in each stage of help-seeking. Effect sizes (eta-squared) were additionally reported to provide an indication of the magnitude of the difference between means; however, they were not reported when variables were also entered as predictor variables in logistic regression analyses, as quantitative information about the relationships between these variables was available from these results. Consistent with the criteria set by Cohen (1988), eta-squared values of .01, .06 and .14 were considered to reflect differences of a small, medium and large magnitude, respectively. For categorical predictor variables (socio-demographic characteristics), the Pearson chi-square test was conducted (where appropriate) for the simple analyses of Chapters 5, 7 and 9 to establish whether there was a significant variation in the proportion

of adolescents who participated in each help-seeking stage across categories of socio-demographic characteristics.

Logistic regression analyses were then conducted to further investigate the relationships between socio-demographic characteristics and levels of mental health symptoms with each outcome variable. Multivariable logistic regression analyses were also performed for each of these predictor variables adjusting for covariates. Odds ratios (*OR*), confidence intervals (*CI*), unstandardised regression coefficients (*B*), the Wald statistic (z-ratio) and significance levels were reported where appropriate for logistic regression analyses. For continuous predictors, the odds ratio estimate is the factor by which the odds of performing a behaviour (or falling into a certain category of the outcome variable) increases with each unit of increase of the predictor. As standardised scores were used for these analyses, a unit of increase in the predictor was *one standard deviation*. For example, if the odds ratio was 2.05, this meant that for an increase of one standard deviation in the predictor variable, the participant would be 2.05 times more likely to participate in the outcome behaviour or fall into the outcome category.

Where informative, prediction success was also reported for these analyses. This is the overall percentage of participants that the predictor variable is able to correctly classify into the categories of the outcome variable. This was reported against the *null* model (the model with no predictors). Variance explained in the outcome variable by the predictor(s) was also reported using Nagelkerke's R^2.

CHAPTER 3: SAMPLE CHARACTERISTICS, PRELIMINARY ANALYSES AND HELP-SEEKING BEHAVIOUR

Chapter structure

This chapter describes the sample for the study. It reports the socio-demographic characteristics of adolescents and the mean scores and standard deviations for all the continuous measures. Where possible, characteristics of the present sample are compared to those of adolescents in other studies to determine whether these results can be generalised to other adolescent populations. The chapter also describes the relationships between the key variables in this study. In particular, the socio-demographic differences in adolescents‟ SDQ total difficulties score, CESD score and Anxiety score will be reported, as will the inter-correlations between all continuous measures (i.e. SDQ total difficulties score, CESD score, Anxiety score and scores on psychosocial scales and subscales).

The help-seeking behaviour of the sample is also described. The proportion of adolescents who perceived themselves to have emotional and behavioural problems, more problems than their peers and a need for professional help with their problems will be reported, as will the proportion of adolescents who reported they had received the help they needed. These proportions are also compared to the results of other studies.

Socio-demographic characteristics of the sample

Data were available from 5,634 adolescents. Sample characteristics are presented in Table 3.1. English was the primary language spoken at home for the majority of adolescents and the majority were of Australian origin, had parents who lived together, had fathers who were employed in full-time paid employment and mothers who were either in full time or part time paid employment. Adolescents had a mean age of 13.01 years (Standard Deviation = .54). Adolescents‟ ages ranged from 11 to 16 years, although almost all adolescents (99.5%) were 12 to 14 years of age. There were no statistically significant differences found between the adolescents who were aged 12 to 14 years and those aged outside this range (aged 11, 15 or 16) on the key measures used this study (e.g., help-seeking behaviour, SDQ total difficulties score, CESD score or Anxiety score) or on other socio-demographic characteristics (gender or language spoken at home). Given that these adolescents (aged 11, 15 or 16) were in the school grade that was assessed in this study, they were included as legitimate student members.

Table 3.1

Socio-demographic characteristics of the sample

Socio-demographic characteristics *n* = 5634	Proportion (%)
Gender (% Female)	53
Australian origin (% Yes)	93
Aboriginal/ Torres Strait identification (% Yes)	5
Language spoken at home	
English	87
English & another language	12
Another language	1
Parental status	
Parents live together	70
Parents are separated or divorced	25
One or more parent has died	2
Parents have never lived together	1
Another parental situation	2
Mother‟s paid employment status	
Employed full time	40
Employed part time	33
Not working	26
Retired	1
Father‟s paid employment status	
Employed full time	80
Employed part time	11
Not working	7
Retired	2

Adolescents' levels of mental health problems

Levels of total difficulties (SDQ)

Table 3.2 presents the mean scores from the SDQ total difficulties scale and the SDQ individual subscales for the study sample. It is apparent from Table 3.2 that the present sample had higher mean scores for the SDQ total difficulties scale and the four problem behaviour subscales than the two comparative samples sourced from a British study and an Australian study (Mellor, 2005; Meltzer, Gatward, Goodman, & Ford, 2000). The present sample also had a lower mean score for the Prosocial behaviour subscale than the two comparative samples. These results indicate that adolescents in the present sample were experiencing a higher level of total difficulties than adolescents from comparable studies.

Table 3.2

Mean (SD) scores for the SDQ total difficulties scale and the SDQ subscales

SDQ subscales	Present Study 11-17 yrs (*n* = 5634)	British Study 11-15 yrs (*n*=4773)[a]	Australian Study 11-17 yrs (*n*=553)[b]
Total Difficulties (possible range 0 –40)	11.69 (6.34)	10.3 (5.2)	9.0 (5.6)
Emotional symptoms (possible range 0 –10)	2.89 (2.43)	2.8 (2.1)	2.4 (2.0)
Conduct disorder (possible range 0 –10)	2.66 (2.06)	2.2 (1.7)	1.8 (1.7)
Hyperactivity (possible range 0 –10)	4.15 (2.41)	3.8 (2.2)	3.2 (2.3)
Peer problems (possible range 0 –10)	1.99 (1.84)	1.5 (1.4)	1.5 (1.6)
Prosocial behaviour (possible range 0 –10)	7.02 (4.57)	8.0 (1.7)	8.0 (1.7)

[a] Sample was from a large national survey of child and adolescent mental health carried out by National Statistics in Britain (Meltzer et al., 2000).

[b] Sample was from a study of adolescents from government schools across Victoria, Australia (Mellor, 2005).

Levels of depressive symptoms (CESD score)

Adolescents‟ mean CESD score (*M*=14.4, *SD*=11.23) in the present sample was higher than that observed in the Australian National Mental Health Survey (*M*=10.57, *SD*= 10.01)[10]. Table 3.3 presents the proportion of adolescents who scored in the no, mild, moderate or severe depression ranges for the present sample, the Australian National Mental Health Survey and the Oregon Depression study (Roberts et al., 1991). A greater proportion of adolescents had depression scores in the mild, moderate and severe depression ranges for the present sample compared to the National Mental Health Survey. However, these proportions were less than those reported in the Oregon Depression study.

Table 3.3

Percentage of adolescents in each depression category for the present study, the Australian National Mental Health Survey and the Oregon Adolescent Depression study

	Present Study 11-17 yrs *(n*=5507)	National Mental Health Survey 13-17 yrs (*n*= 1340)	Oregon Adolescent Depression study (*n*=1704)[a]
No depression (CESD score range 0-15)	66	78	52
Mildly depressed (CESD score range 16-20)	11	8	17
Moderately depressed (CESD score range 21-30)	13	9	19
Severely depressed (CESD score range 31-60)	10	6	12

[a] Sample was recruited from nine senior high schools in West Central Oregon (mean age = 16.6 years).

[10] CESD scores were not available from this report but were calculated directly from the Australian National Mental Health Survey data. These data are available on request from the Australian Social Science data archive, Australian National University.

Levels of anxiety

The Anxiety scale that was used in this study has a possible range of 0 to 24, with higher scores indicating a higher level of anxiety. Adolescents from the present sample scored across the full range and had a mean score of 7.08 (*SD* = 4.57). As this measure had not been used in this form in any other study, there were no data available for comparison with this measure.

Psychosocial functioning

Table 3.4 presents the mean scores and standard deviations for the Social Support (MSPSS) subscales. These are compared with adolescent data from a study of secondary school students (mean age 16.7 years) from Madrid and Paris conducted by Zimet et al. (1990). Mean scores were very similar across studies. The scores of each MSPSS subscale ranged from 1 to 7 and adolescents in this study scored within this full range available.

Table 3.4
Mean (SD) scores for the MSPSS subscales

Social Support subscales (possible range 1 - 7)	Present Study 11-17 yrs (*n* = 5634)	Comparative Study[a] 15-19 yrs (*n* = 74)
Friend support subscale	5.51 (1.19)	5.48 (1.20)
Family support subscale	5.68 (1.16)	5.52 (1.07)
Significant other support subscale	5.74 (1.13)	5.82 (1.08)

[a] Data were collected from a school-based sample in Madrid and Paris (Zimet et al., 1990).

Table 3.5 reports the mean scores and standard deviations for the Interpersonal Skills subscales and the Constructive Problem Solving scale. Higher scores on the Constructive Problem Solving scale indicate better problem solving skills and higher scores on each of the Interpersonal Skills subscales indicate better interpersonal skills. As these measures had not been used in this form in any other study, there were no data available for comparison. The possible range of scores for the Constructive Problem Solving scale was 0 to 48 and the possible range of scores for each of the Interpersonal Skills subscales was 0 to 9; adolescents used the full range of available scores for these measures.

Table 3.5
Mean (SD) scores for Constructive Problem Solving scale and Interpersonal Skills subscales

Scale	Present Study (n = 5634)
Constructive Problem Solving scale (possible range 0 – 48)	25.05 (9.79)
Interpersonal Skills subscales (possible range 0 – 9)	
Initiating relationships subscale	5.44 (1.97)
Providing emotional support subscale	6.24 (1.97)
Asserting influence subscale	5.86 (1.80)
Self-disclosure subscale	5.86 (1.91)
Conflict resolution subscale	5.40 (1.85)

Inter-correlations of continuous variables

The correlations between all continuous variables are reported in Table 3.6. The majority of correlations were statistically significant ($p<.001$), although they ranged from very weak ($r= -.04$) to strong ($r=.75$). Correlations that were not significant are identified in Table 3.6 by shading. The only correlations that were not statistically significant were those between the Providing Emotional Support subscale score (an Interpersonal Skills subscale) with both the Anxiety score and the Emotional Symptoms score (SDQ). It should be noted that the large size of the sample contributed to the statistical significance of some of the weaker correlations. Strong correlations (equivalent to .6 or more) are underlined in Table 3.6. Correlations between the CESD score, SDQ total difficulties score and Anxiety score were quite strong, suggesting that they were measuring related constructs.

The correlations between the predictor variables (SDQ total difficulties scale, CESD scale and Anxiety scale) and the covariates (adolescents‟ psychosocial variables) are also available from Table 3.6. Negative correlations were found between adolescents‟ scores on the SDQ total difficulties scale, CESD scale and Anxiety scale with scores on the Social Support subscales, Interpersonal Skills subscales and Constructive Problem Solving scale. The majority of these correlations were statistically significant and ranged from weak ($r=-.07$) to moderate ($r=-.43$). These results indicate that adolescents who reported higher levels of total difficulties (SDQ total difficulties scale), depression (CESD) and anxiety (Anxiety scale) were likely to have lower levels of social support, interpersonal skills and constructive problem solving skills.

Table 3.6

Inter-correlations (r) between continuous measures

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1) CESD																
2) Anxiety	.60															
3) SDQ total difficulties scale	.69	.57														
4) Emotional symptoms (SDQ-s)	.67	.70	.75													
5) Conduct disorders (SDQ-s)	.44	.26	.75	.35												
6) Hyperactivity (SDQ-s)	.41	.27	.75	.36	.53											
7) Peer problems (SDQ-s)	.49	.38	.63	.42	.33	.21										
8) Prosocial behavior (SDQ-s)	-.09	.04	-.24	.05	-.33	-.26	-.21									
9) Family (SS)	-.20	-.08	-.26	-.09	-.23	-.19	-.25	.37								
10) Friends (SS)	-.20	-.12	-.26	-.12	-.20	-.13	-.37	.35	.63							
11) Significant other (SS)	-.36	-.19	-.37	-.23	-.33	-.29	-.22	.29	.65	.42						
12) Constructive problem solving	-.23	-.09	-.32	-.13	-.28	-.31	-.22	.43	.47	.39	.45					
13) Initiating relationships (IS)	-.19	-.22	-.27	-.20	-.15	-.17	-.28	.34	.29	.32	.21	.35				
14) Providing emotional support (IS)	-.07	-.01	-.23	-.01	-.25	-.22	-.23	.56	.38	.41	.22	.45	.55			
15) Asserting influence (IS)	-.27	-.25	-.32	-.24	-.19	-.22	-.30	.31	.31	.29	.25	.38	.54	.52		
16) Conflict resolution (IS)	-.22	-.14	-.30	-.13	-.24	-.22	-.31	.45	.46	.45	.35	.51	.60	.67	.57	
17) Self- disclosure (IS)	-.28	-.18	-.43	-.19	-.44	-.38	-.23	.28	.30	.28	.31	.43	.47	.55	.47	.58

Note. All correlations (except those specified by shading) are significant (p<.001). Strong correlations equivalent to.6 or more are underlined. SDQ-s = SDQ subscale; SS=Social Support subscale; IS=Interpersonal Skills subscale.

Adolescents' SDQ total difficulties score, CESD score and Anxiety score as a function of socio-demographic characteristics

Independent samples t-tests or one-way Analyses of Variance (ANOVA) were conducted to examine whether the SDQ total difficulties score, CESD score and Anxiety score varied with socio-demographic characteristics. Table 3.7 compares the mean scores and standard deviations for the SDQ total difficulties scale, the CESD scale and the Anxiety scale between males and females. It is evident that males and females had equivalent mean scores on the SDQ total difficulties scale. However, females had a significantly higher mean CESD score and Anxiety score than male adolescents. The eta-squared indicated only a small effect for each scale and the significance of these differences reflects the contribution of the large sample size.

Table 3.7

Mean (SD) scores of the SDQ total difficulties scale, the CESD scale and the Anxiety scale for female and male adolescents

Gender	SDQ			CESD			Anxiety		
	M (*SD*)	*t* (*df*)	η^2	*M* (*SD*)	*t (df)*	η^2	*M* (*SD*)	*t* (*df*)	η^2
Males	11.76 (6.23)	-.79 (5584)	.00	12.91 (9.93)	9.40*** (5474)	.02	6.20 (4.25)	13.74*** (5549)	.03
Females	11.62 (6.45)			15.71 (12.11)			7.85 (4.70)		

η^2 =eta squared.

****p*<.001.

Table 3.8 compares the mean scores and standard deviations for the SDQ total difficulties scale, the CESD scale and the Anxiety scale by categories of adolescents‟ socio-demographic characteristics. There was little difference in the mean scores of the SDQ total difficulties scale, the CESD scale and the Anxiety scale for adolescents in different ethnic groups (language spoken at home). The results of three one-way ANOVA confirmed that the differences between mean scores were not significant.

As evident from Table 3.8, adolescents‟ mean SDQ total difficulties score, CESD score and Anxiety score varied according to parental status. Mean scores were lowest among adolescents whose parents lived together. Results of three one-way ANOVAs confirmed there was a significant difference in mean scores on each of the scores for the parental status categories (see Table 3.8), however the eta-squared indicated only a very small effect for the SDQ total difficulties score (η^2 =.02), the CESD score (η^2 =.02) and the Anxiety score (η^2 =.01). Post hoc comparisons confirmed that there was a significant difference in the mean scores of each of the scales between adolescents whose parents lived together and those with any of the parental situations specified in Table 3.8. In addition, adolescents with parents who were separated or divorced had a significantly lower mean Anxiety score than those with parents who have never lived together.

Table 3.8

Mean (SD) scores of the SDQ total difficulties scale, the CESD scale and the Anxiety as compared by categories of socio-demographic characteristics

Socio-demographic characteristic	SDQ total difficulties score			CESD score			Anxiety score		
	n	*M* (*SD*)	*F (df1, df2)*	*n*	*M* (*SD*)	*F (df1,df2)*	*n*	*M (SD)*	*F (df1,df2)*
Language spoken at home									
English	4838	11.69 (6.33)	.25 (2,5570)	4774	14.35 (11.27)	.20 (2,5490)	4814	7.04 (4.51)	2.12 (2,5539)
English & another language	660	11.68 (6.38)		646	14.66 (10.82)		653	7.42 (4.88)	
Another language	75	11.17 (6.67)		73	14.34 (11.25)		75	6.81 (5.03)	
Parental status									
Parents living together	3913	11.06[a](6.23)	32.36*** (4,5560)	3863	13.39[a] (10.68)	26.45*** (4,5480)	3894	6.87[a](4.46)	9.65*** (4,5530)
Separated/ divorced	1374	13.11 (6.33)		1350	16.56 (11.72)		1367	7.42[b](4.63)	
Parent(s) deceased	111	12.77 (6.42)		109	16.74 (13.41)		109	8.07 (5.05)	
Parents never lived together	58	14.50 (6.89)		59	18.61 (12.75)		57	9.47[b] (4.96)	
Another situation	109	13.00 (6.51)		104	17.76 (13.88)		108	7.65 (5.49)	
Mother‟s paid employment									
Full time	2183	11.64 (6.28)	4.71** (3,5479)	2160	14.49 (11.37)	3.84** (3,5405)	2162	7.00 (4.50)	1.24ns (3,5449)
Part time	1826	11.38[c](6.19)		1804	13.89[c] (10.80)		1822	7.04 (4.40)	
Not working	1402	12.00[c](6.54)		1373	14.75 (11.34)		1398	7.25 (4.83)	
Retired	72	13.58 (7.11)		72	17.69[c] (13.10)		71	7.55 (5.56)	
Father‟s paid employment									
Full time	4318	11.25[de](6.22)	25.95*** (3,5380)	4258	13.73[de](10.88)	21.53*** (3,5309)	4298	6.91[de] (4.47)	7.56*** (3,5353)
Part time	571	13.15[d](6.66)		567	16.84[d] (12.30)		566	7.69[d] (4.69)	
Not working	385	13.27[e](6.35)		378	17.00[e] (11.74)		384	7.67[e] (4.95)	
Retired	110	12.60 (6.29)		110	15.44 (10.23)		109	6.94 (4.23)	

[a] Differs significantly from all other parental status categories.

[b] Significant difference between these two parental status groups.

[c] Significant difference between these two mother‟s paid employment status groups.

[d] Significant difference between these two father‟s paid employment status groups.

[e] Significant difference between these two father‟s paid employment status groups.

**p<.01, ***p<.001.

As evident from Table 3.8, adolescents with mothers who were retired had slightly higher mean scores on each of the scales than those with mothers who were not working in paid employment, followed by those with mothers who worked in full time paid employment and then those with mothers who worked in part time paid employment. There was a significant difference in the SDQ total difficulties scores and CESD scores for the mother‟s paid employment status categories; however, the magnitude of the differences in the means was very small (as indicated by eta-squared) for the SDQ (η^2 =.003) and the CESD (η^2 =.002). Post hoc comparisons revealed a significant difference was only evident between the mean CESD scores of adolescents with mothers who worked in part time paid employment and adolescents with mothers who were retired and between the mean SDQ total difficulties scores of adolescents with mothers who worked in part time paid employment and those with mothers who were not working in paid employment.

Adolescents with fathers who were in full time paid employment had lower mean SDQ, CESD and Anxiety scores than adolescents with fathers in any of the other employment categories (see Table 3.8). Although this difference was significant, the effect was again very small for the SDQ total difficulties score (η^2 =.01), the CESD score (η^2 =.01) and the Anxiety score (η^2 =.004). Post hoc comparisons revealed adolescents with fathers in full time paid employment had significantly lower mean scores compare to those with fathers who worked in part time paid employment and those with fathers who were not working in paid employment.

Summary of sample characteristics

Adolescents in the present study had a higher mean SDQ total difficulties score and CESD score than those of adolescents from two comparative Australian studies (Mellor, 2005; Sawyer et al., 2000). The somewhat higher scores found in the present sample may be a

result of the sample source and selection procedure employed for this study. The sample used for this study was a school-based sample and data collected were part of an ongoing depression study. Schools that agreed to participate in the *bb*SRI may have had a greater proportion of students with pre-existing problems who would benefit from participating in such an intervention. Furthermore, on an individual level, adolescents participating in the present study were aware they were undertaking the survey as part of a depression study. This knowledge may have created a response bias. The National Mental Health Survey (Sawyer et al., 2000) used a stratified random sample and was therefore likely to be more reflective of the adolescents in the Australian general population.

Adolescents‟ scores on the Social Support subscales were consistent with those found by a study conducted in Madrid and Paris (Zimet et al., 1990). Both of these studies were school-based and this may therefore explain the similarity in results.

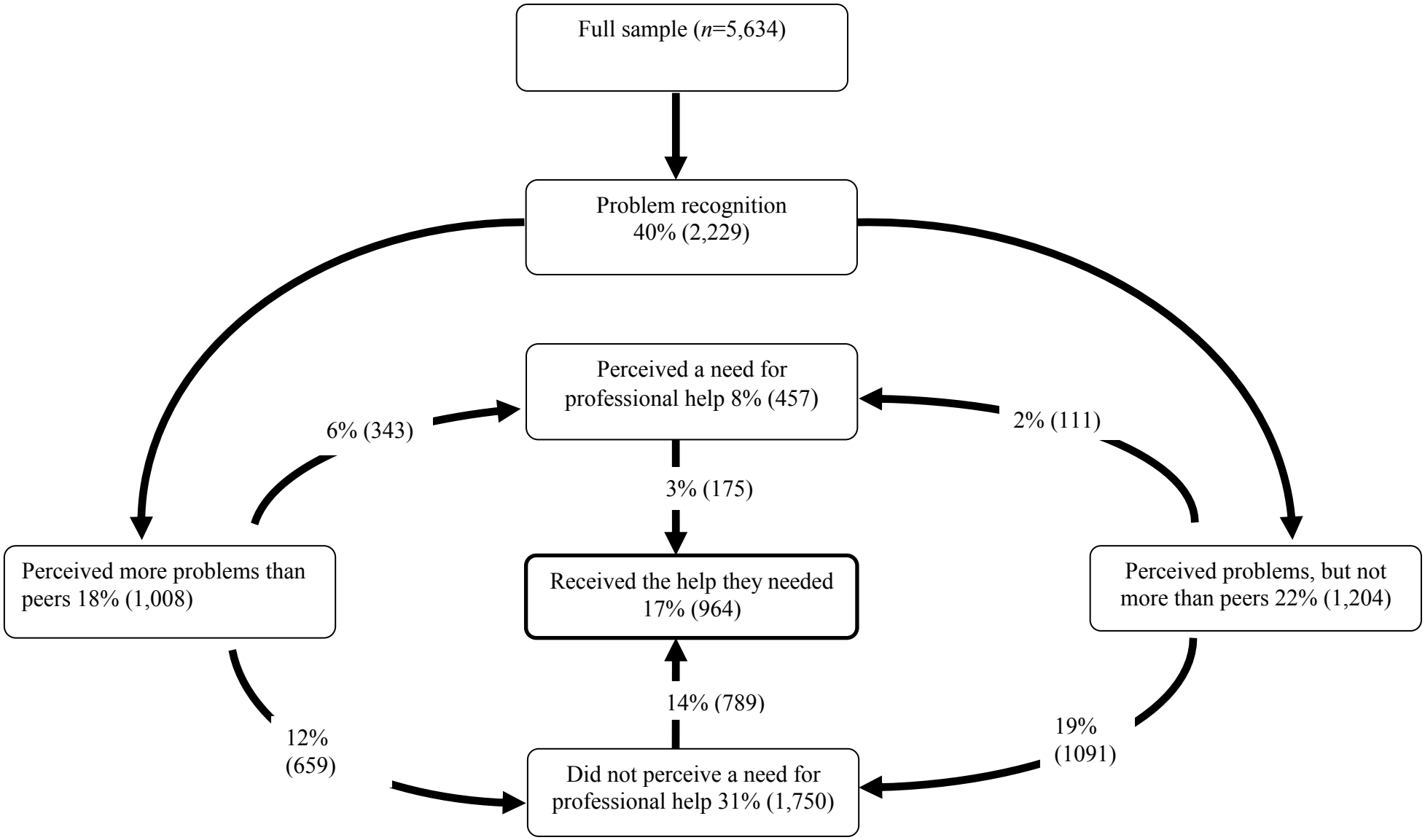
Significant correlations were found between adolescents‟ scores on the SDQ total difficulties scale, CESD scale and Anxiety scale and their scores on the Social Support subscales, Constructive Problem Solving scale and Interpersonal Skills subscales. Furthermore, adolescents‟ scores on the SDQ total difficulties scale, CESD scale and Anxiety scale were found to differ according to the categories of most socio-demographic characteristics.

Adolescent help-seeking behaviour

This section describes the help-seeking behaviour of the adolescents in this study and compares their behaviour with findings from other studies. Figure 3.1 illustrates the help-seeking behaviour of the adolescents in this study. Each percentage displayed is the

proportion of adolescents who endorsed a specific help-seeking behaviour question as a percentage of the full sample.

It is apparent from Figure 3.1 that 40% (*n*=2,229) of adolescents in this sample reported they had experienced emotional or behavioural problems in the last six months. Furthermore, only 21% (*n*=454) of adolescents who perceived they had emotional or behavioural problems (*n*=2,229) perceived a need for professional help with their problems. This represents 8% of the full sample. Only 38% of the adolescents who had actually perceived a need for professional help reported that they had received the help they needed (this represents 3% of the full sample; *n*=175). Given that only a proportion of adolescents who perceived a need for help actually reported they had received the help they needed, there was a „self-perceived unmet need for professional help" in 287 adolescents (5% of the full sample).



Note. All proportions are expressed as a percentage of the full sample (*n*=5,634). Data are missing from some categories.

*Figure 3.1.*Percentage of adolescents at each stage of the help-seeking pathway in the current study.

Overall, 17% of the sample reported they had received the help they needed. This group of adolescents was comprised of adolescents who had perceived a need for professional help (3%) and those who had not perceived a need for professional help (14%). As previously mentioned, the main focus of this study was determining the relationships between the key predictor variables (socio-demographic characteristics and levels of mental health problems) and the stages through which adolescents may progress when seeking help from professional sources. Therefore, the group of primary interest in this study is the adolescents who reported they had received the help they needed when they had also perceived a need for professional help. It is likely that the adolescents who reported they had received the help they needed when they had not perceived a need for professional help actually received help from an informal source. These adolescents were investigated further in subsidiary analyses (Chapter 10). As this study did not determine the source from where these adolescents received the help they needed, the results found among this group of adolescents should be interpreted with some caution.

The results of this study are compared to those of other studies that have assessed help-seeking stages (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). It should be noted there are methodological differences with these studies that may account for some of the variability in the results. A larger proportion (40%) of adolescents in the present sample perceived themselves to have experienced emotional or behavioural problems, compared to that found in the National Mental Health Survey (26%)[11]. Furthermore, a larger proportion (18%) of adolescents in the present sample perceived themselves to have more problems than their peers, compared to the National Mental Health Survey (14%). This is

[11] These percentages were not available from the report (Sawyer et al., 2001) but were calculated directly from the Australian National Mental Health Survey data available on request from the Australian Social Science data archive, Australian National University.

consistent with the previous finding that adolescents‟ reported depression levels in this study also exceeded those found in the National Mental Health Survey.

Studies conducted in other countries have found a comparable level of problem perception to the present study (Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). Sears found that 38% of adolescents perceived themselves to have a serious problem (emotional, behavioural or physical) in the last 12 months among a school-based sample of Canadian adolescents aged 12 to 19 years (*n*=644). However, it should be noted that Sears assessed adolescents‟ perceptions of physical problems in addition to emotional and behavioural problems and the sample consisted of adolescents attending schools in rural areas of Canada. Zwaanswijk, Van der Ende et al. found that 38% of a representative national sample of Dutch adolescents aged 11to18 years (*n*=1,120) reported having experienced emotional and behavioural problems, similar to the proportion reported in this study. Zwaanswijk, Van der Ende et al. found a smaller proportion of adolescents (11%) perceived their problems to be more severe than their peers, compared to the proportion of adolescents in this study (18%). However, this difference is possibly due to the different approach used to assess the perceived severity of problems as Zwaanswijk, Van der Ende et al. asked adolescents if they had experienced worse problems than their peers, whereas the present study assessed whether adolescents perceived that they had more problems than their peers.

Despite differences in adolescents‟ levels of depression and problem recognition between this study and the National Mental Health Survey, the proportion of adolescents from the National Mental Health Survey who perceived a need for professional help (7%) and reported that they had received this help (2%) were comparable to the proportion of adolescents who perceived a need for professional help and reported they had received this help in the present study (8% and 3%, respectively). However, these proportions were slightly lower than those found by Saunders et al. (1994) and Sears (2004). Saunders et al. reported that 13% of adolescents

perceived a need for professional help with their emotional, behavioural and mental health problems and that 6% sought professional help. Sears reported that 15% of adolescents perceived a need for professional help with their emotional, behavioural or physical problems and 7% sought professional help. This may be because Sears and Saunders et al. ascertained whether adolescents had sought professional help for their problems, whereas this study assessed whether adolescents had received the help they needed for their problems. It is likely that the proportion of adolescents who seek professional help exceeds the proportion that actually ends up receiving help and, furthermore, considers the help they receive to be adequate or of value (i.e., the help they perceived themselves to need).

Summary of help-seeking behaviour

In summary, the pattern of help-seeking found in this study was comparable to that found by other studies (Sawyer et al., 2000; Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003) in that there are discrepancies between the proportions of adolescents who recognise they have problems and a need for professional help and the proportion who actually report they had received the help they need, sought professional help or received a referral for mental health services. The following chapters of this thesis examine the relationships between key variables (socio-demographic characteristics and levels of mental health problems) and adolescents‟ attainment of each stage of help-seeking behaviour.

Similar to the approach employed in previous studies (Saunders et al., 1994; Sears, 2004), for this study, the relationships between these key variables and each of the help-seeking behaviours are examined among adolescents who attained the previous stage of help-seeking (see Figure 3.1). Therefore, to assess the relationships between these key variables and adolescents‟ problem recognition, their perceptions of whether they experienced emotional or behavioural problems are examined among all adolescents. However, their perceptions of

whether they experienced more problems than peers are examined only among adolescents who perceived they had experienced emotional or behavioural problems.

Furthermore, as problem recognition consists of two elements in this study, the relationships between the key variables and perceiving a need for professional help are examined separately among adolescents who perceived themselves to have more emotional or behavioural problems than their peers and those who perceived themselves to have emotional or behavioural problems, but not more than their peers (see Figure 3.1).

The relationships between the key variables and adolescents‟ reports they received the help they needed is examined among adolescents who perceived a need for professional help with their emotional or behavioural problems. These analyses make it possible to identify the factors that are significantly associated with adolescents‟ perceptions they had actually received the help they needed when they had perceived a need for professional help.

The relationships between key variables and adolescents‟ reports they received the help they needed will also be examined among adolescents who did not perceive a need for professional help in further subsidiary analyses (Chapter 10).

Chapter structure for the remainder of the thesis

Chapters 4, 6 and 8 examine the relationship between levels of total difficulties, depression and anxiety and:

- Problem recognition (Chapter 4);
- Perceiving a need for professional help (Chapter 6); and
- Adolescents‟ reports they received the help they needed when they had perceived a need for professional help (Chapter 8).

Chapters 5, 7 and 9 examine the relationship between socio-demographic characteristics and:

- Problem recognition (Chapter 5);
- Perceiving a need for professional help (Chapter 7); and
- Adolescents‟ reports they received the help they needed when they had perceived a need for professional help (Chapter 9).

Chapter 10 consists of subsidiary analyses that examine the associations between predictor variables (socio-demographic characteristics and levels of total difficulties, depression and anxiety) and adolescents‟ reports they received the help they needed when they had not perceived a need for professional help. Chapter 11 provides an overall synthesis of the main findings of the study.

CHAPTER 4: THE RELATIONSHIP BETWEEN ADOLESCENTS' MENTAL HEALTH PROBLEMS AND PROBLEM RECOGNITION

Introduction

Results of previous studies have indicated that higher levels of mental health problems are significantly associated with a greater likelihood that adolescents will perceive themselves to have emotional and behavioural problems; and that they will perceive that their problems are worse than those of their peers (Sears, 2004; Zwannswijk et al., 2003). Furthermore, results of Sears" study suggested that adolescents" level of externalising problems may be more strongly associated with initial problem perception than their level of internalising problems. This chapter examines the associations between adolescents" levels of total difficulties (SDQ total difficulties score), depression (CESD score) and anxiety (Anxiety score) with the first stage of help-seeking behaviour, problem recognition; and also whether different types of mental health problems (i.e. internalising problems and externalising problems) are more strongly associated with problem recognition.

The statistical significance and strength of associations between adolescents" level of mental health problems and problem recognition will also be examined adjusting for psychosocial variables.

Defining problem recognition for analysis purposes

As reported in Chapter 3 (Figure 3.1, p.134), 40% of adolescents in this study reported that they had experienced emotional or behavioural problems in the previous six months. Furthermore, approximately half of these adolescents (18% of the total sample) reported that they had experienced more problems than their peers during that time. There is some overlap between these two levels of problem recognition. For analysis purposes,

adolescents were assigned to the following groups to reflect these different levels of problem recognition. The first two mutually exclusive groups reflect the first level of problem recognition:

- *Emotional or Behavioural Problems group (n=2,229):* This group consisted of all adolescents who reported they had experienced emotional or behavioural problems in the preceding six months.

- *No Problems group (n=3,357)*: This group consisted of all adolescents who reported that they had not experienced emotional or behavioural problems in the preceding six months.

Among adolescents who perceived they had emotional or behavioural problems, a subgroup perceived they had more emotional or behavioural problems than their peers. Therefore there are two additional mutually exclusive problem recognition sub-groups within this group:

- *More Problems group (n=1,008):* Those adolescents who reported they had emotional or behavioural problems and more emotional or behavioural problems than their peers in the preceding six months.

- *Comparable Problems group (n=1,221):* Those adolescents who reported emotional or behavioural problems, but did not report they had experienced more problems than their peers.

Hypotheses

Consistent with the findings of Sears (2004) and Zwannswijk et al. (2003), it is hypothesised that:

Adolescents with higher scores on the SDQ total difficulties scale, CESD scale and Anxiety scale will be more likely to perceive they have emotional or behavioural problems and more likely to perceive they have more problems than their peers (Hypothesis 4.1).

The relationships specified in Hypothesis 4.1 will be examined adjusting for the effect of social support, interpersonal skills and constructive problem solving to allow for the possibility that psychosocial variables explain the relationships found between adolescents‟ levels of mental health problems and problem recognition.

The SDQ is comprised of five individual subscales, four of which assess internalising and externalising mental health problems. The Emotional Symptoms subscale assesses emotional problems (internalising problems), and the Peer Problems subscale, the Hyperactivity subscale and the Conduct Disorders subscale assess behavioural problems (externalising problems). Consistent with results of the study conducted by Sears (2004), it is hypothesised that:

Adolescents with higher scores on the SDQ subscales that assess externalising problems (Conduct Problems, Peer Problems, Hyperactivity) will be more likely to perceive they have emotional and behavioural problems and to perceive they have more problems than their peers than adolescents with a higher score on the SDQ subscale that assesses internalising problems (Emotional Symptoms) (Hypothesis 4.2).

There is also a fifth SDQ subscale that is positively worded and assesses adolescents‟ levels of Prosocial Behaviour. This subscale will also be included in the analyses along with the other SDQ subscales.

Chapter structure

The mean scores and standard deviations for the SDQ total difficulties scale and subscales, CESD scale and Anxiety scale, as well as the covariates (psychosocial scales and subscales), were examined for the three mutually exclusive problem recognition groups of No Problems, Comparable Problems and More Problems. One-way Analysis of Variance (ANOVA) and post hoc comparisons were conducted to determine whether there were statistically significant differences in adolescents‟ scores on the SDQ total difficulties scale and subscales, CESD scale and Anxiety scale and the psychosocial scales across these problem recognition groups. These analyses guided the choice of variables to be further investigated in the logistic regression analyses.

A series of univariate and multivariable logistic regression analyses were then performed to further investigate the relationships between the variables. These analyses determined whether the significant associations found between adolescents‟ scores on the SDQ total difficulties scale, the CESD scale and the Anxiety scale and problem recognition were maintained after adjusting for adolescents‟ scores on the Social Support subscales, Constructive Problem Solving scale and Interpersonal Skills subscales. These analyses also determined whether some types of mental health symptoms were more strongly associated with adolescents‟ problem recognition.

Results of One-way ANOVA

SDQ total difficulties scale and subscales, CESD scale and Anxiety scale

With the exception of the positively worded Prosocial Behaviour SDQ subscale, for each scale and subscale in Table 4.1, adolescents in the More Problems group had higher mean scores than adolescents in the Comparable Problems group, who, in turn, had higher mean scores than adolescents in the No Problems group, as anticipated. For the Prosocial Behaviour subscale this pattern was reversed. Adolescents in the No Problems group had a slightly higher mean Prosocial Behaviour score than adolescents in the Comparable Problems and More Problems groups.

A series of One-way ANOVAs revealed there was a statistically significant difference between the mean scores of the three problem recognition groups for the CESD scale, the Anxiety scale and the SDQ total difficulties scale and subscales (see Table 4.1). Post Hoc comparisons (Tukey's HSD test) indicated a significant difference was present between the means of each of the three problem recognition groups for each of these scales and the SDQ subscales, with the exception of the Prosocial Behaviour subscale. There was no significant difference found between the mean scores of adolescents in the Comparable Problems group and the More Problems group for the Prosocial Behaviour subscale. Effect sizes are not reported with these results as quantitative information about the relationship between these scales and problem recognition is available from the logistic regression analyses further on in this chapter.

Table 4.1

Mean (SD) scores of adolescents in each problem recognition group for the CESD scale, Anxiety scale, SDQ total difficulties scale and SDQ subscales

Scale	Problem recognition group			*F* *(df1,df2)*
	No Problems (*n*=3357)	Comparable Problems[a] (*n*=1220)	More Problems[b] (*n*=1009)	
SDQ total difficulties	9.44 (5.35)	13.37 (5.66)	17.19 (6.24)	810.31*** (2,5544)
SDQ subscales				
Emotional symptoms	2.14 (1.99)	3.38 (2.35)	4.84 (2.62)	617.63*** (2,5547)
Conduct problems	2.11 (1.80)	3.07 (2.01)	3.98 (2.22)	397.80*** (2,5547)
Hyperactivity	3.54 (2.25)	4.76 (2.31)	5.45 (2.35)	324.32*** (2,5546)
Peer Problems	1.65 (1.63)	2.16 (1.80)	2.92 (2.17)	204.03*** (2,5548)
Prosocial behaviour	7.10 (2.00)	6.92[c] (1.99)	6.90[c] (2.03)	5.74** (2,5549)
CESD	10.14 (7.82)	16.88 (10.28)	25.64 (3.22)	1048.94*** (2,5569)
Anxiety	5.87 (3.67)	7.79 (4.49)	10.26 (5.53)	430.6*** (2,5513)

[a] Adolescents who perceived themselves to have emotional or behavioural problems, but not more than their peers.

[b] Adolescents who perceived themselves to have more emotional or behavioural problems than their peers.

[c] There was no statistically significant difference present between the mean Prosocial Behaviour subscale scores of these two problem recognition groups.

*p<.05, **p<.01, ***p<.001.

These results indicate that adolescents in the Comparable Problems and More Problems groups had higher levels of mental health problems than those in the No Problems group. To further investigate the "dose-response" nature of these associations, the percentage of adolescents who perceived themselves to have emotional or behavioural problems and more problems than their peers for each standardised score on the SDQ total difficulties scale, the CESD scale, the Anxiety scale and the SDQ subscales, were examined in Figures 4.1 to 4.4. The positively worded Prosocial Behaviour scale was not included in these figures as it does not assess problem behaviour. Standardised scores (*z*-scores) were used for Figures 4.1 to 4.4 in order to eliminate apparent differences due to varying scales.

Figure 4.1 portrays the percentage of adolescents who perceived they had emotional or behavioural problems for the standardised scores of the CESD scale, the Anxiety scale and the SDQ total difficulties scale. Figure 4.2 portrays the percentage of adolescents who perceived they had emotional or behavioural problems for the standardised scores of four of the SDQ subscales. It is apparent from these figures that, as the standardised score increased on each of these scales and subscales, the percentage of adolescents who perceived they had emotional or behavioural problems also increased steadily in an almost linear fashion. A further feature is the similarity of the slopes for all subscales.

A similar pattern was found with adolescents who perceived they had more problems than their peers, as indicated by Figures 4.3 and 4.4; however, the CESD scale, the SDQ total difficulties scale and the Anxiety scale scores start at higher levels in these graphs, compared to the graphs of adolescents who perceived they had emotional or behavioural problems (Figures 4.1 and 4.2). As the standardised score increased on each scale and subscale, the percentage of adolescents who perceived they had more problems than their peers also increased.

Therefore, while each of these scales and subscales measure different (although related) psychological constructs, problem perception increased with increasing scores on each scale and subscale at a similar rate. This may be because adolescents are able to recognise they have different sorts of mental health problems equally. Alternatively, these problems may be co-morbid with each other and, therefore, while adolescents may only recognise certain types of mental health problems as an emotional or behavioural problem, the specific problems they recognise occur concurrently with other types of problems. Multivariable logistic regression analyses are conducted in the next section to determine the unique variance in problem recognition accounted for by each of these scales and subscales.

Each of the graphs showed more variability within the upper range of scores, with more pronounced peaks and troughs. Scores in the upper range of these scales indicated a very high level of mental health symptoms experienced by only a small proportion of adolescents, which accounts for this variability. It is noteworthy that for each of the scales, even at scores well below average ($z < 0$), a substantial proportion of adolescents still perceived they had experienced emotional or behavioural problems and even perceived they had experienced more of these problems than their peers. It is also apparent from the figures that there is little indication of a threshold score below which the proportion of adolescents who perceived emotional or behavioural problems or who perceived more problems than peers stabilised. Therefore, it appears that, even within the lower range of scores, adolescents‟ problem recognition increased consistently with increasing scores on the SDQ total difficulties scale, the CESD scale, the anxiety scale and the SDQ subscales.

Figure 4.1. The percentage of adolescents who perceived they had emotional or behavioural problems for each standardised score on the SDQ total difficulties scale, the CESD scale and the Anxiety scale.

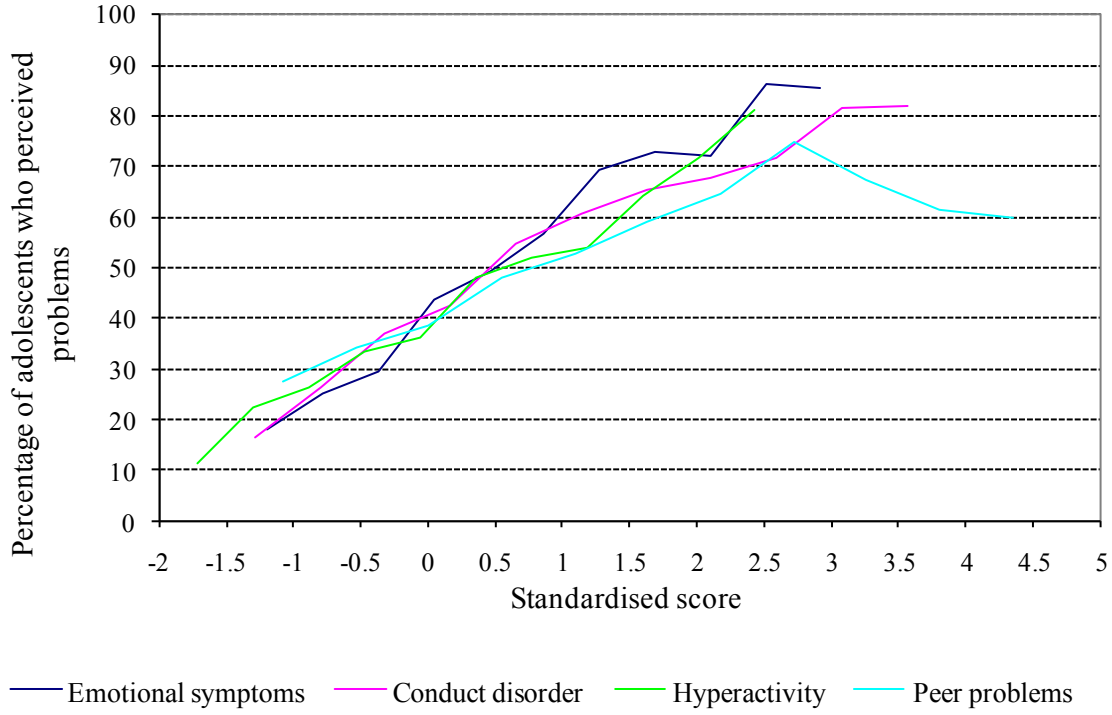


Figure 4.2. The percentage of adolescents who perceived they had emotional or behavioural problems for each standardised score on the SDQ subscales.

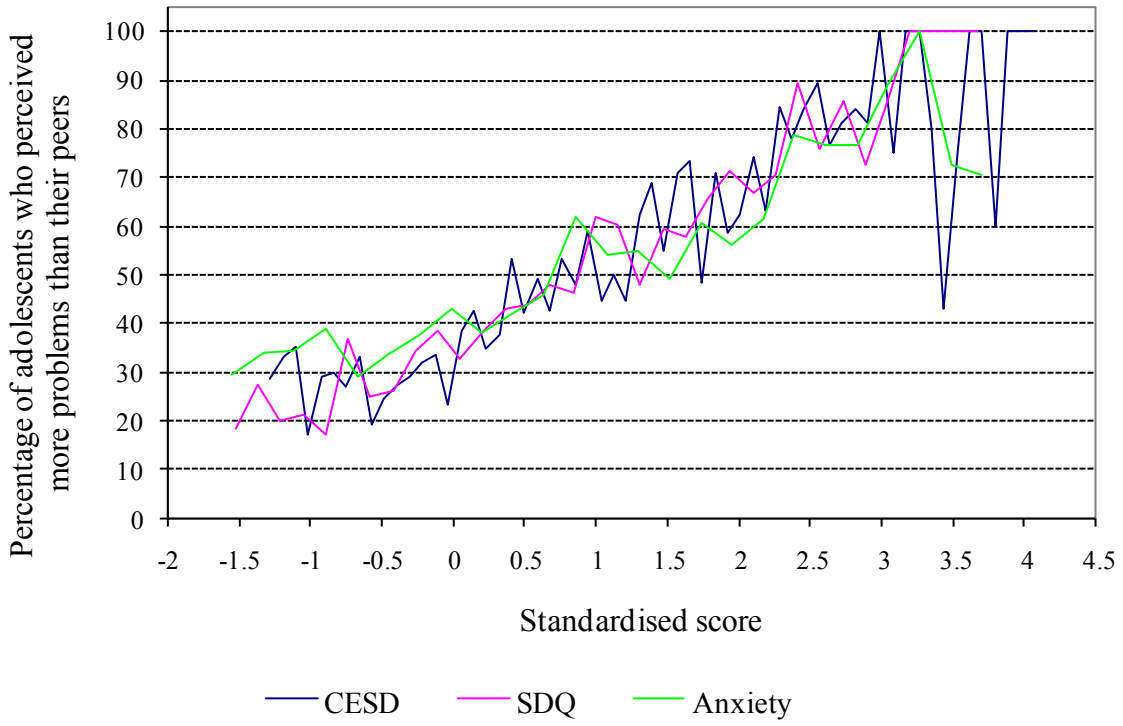


Figure 4.3. The percentage of adolescents who perceived they had more emotional or behavioural problems than their peers for each standardised score the SDQ total difficulties score, the CESD score and the Anxiety score.

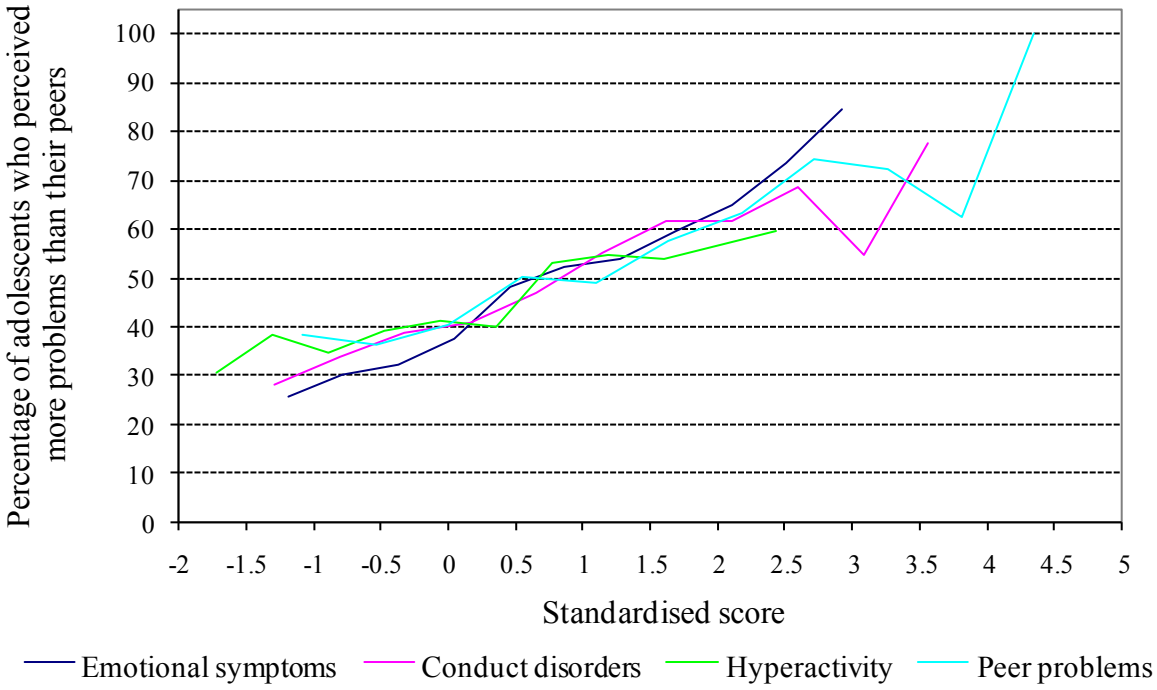


Figure 4.4. The percentage of adolescents who perceived they had more emotional or behavioural problems than their peers for each standardised score on the SDQ subscales.

Constructive Problem Solving scale, Interpersonal Skills subscales and Social Support subscales

Adolescents‟ scores on the Constructive Problem Solving scale, the Social Support subscales and the Interpersonal Skills subscales were examined for each of the problem recognition groups (No Problems, Comparable Problems and More Problems). These analyses determined whether there were statistically significant differences in the mean scores of psychosocial variables for each problem recognition group. As shown in Table 4.2, with the exception of the scores on the Providing Emotional Support subscale, adolescents from the More Problems group had a lower mean score on each of the scales and subscales than adolescents from the Comparable Problems group, who, in turn, had a lower mean score than adolescents from the No Problems group. A series of One-way ANOVAs indicated there was a statistically significant difference present between the mean scores of the three problem recognition groups for each of these scales and subscale, with the exception of the Providing Emotional Support subscale.

Table 4.2

Mean (SD) scores on the Constructive Problem Solving scale, Interpersonal skills subscales and Social Support subscales for adolescents from each problem recognition group

Scale	Problem recognition group			*F (df1,df2)*	η^2
	No Problems (*n*=3357)	Comparable Problems[a] (*n*=1220)	More Problems[b] (*n*=1009)		
Constructive Problem solving	25.95 (9.72)	24.27 (9.56)	23.06 (9.92)	39.1*** (2,5540)	.01
Social Support subscales					
Family	5.91 (1.02)	5.51 (1.15)	5.12 (1.38)	207.86*** (2,5569)	.07
Friend	5.57[a] (1.11)	5.54[c] (1.18)	5.26 (1.41)	27.50*** (2,5571)	.01
Significant other	5.80[a] (1.07)	5.73[c] (1.13)	5.54 (1.32)	20.84*** (2,5571)	.01
Interpersonal skills Subscales					
Initiating relationships	5.54 (1.92)	5.32[c] (2.02)	5.20[c] (2.20)	13.74*** (2,5423)	.01
Providing emotional support	6.20 (1.92)	6.31(1.98)	6.32 (2.09)	2.42 ns (2,5413)	--
Asserting influence	6.0 (1.72)	5.76 (1.84)	5.51 (1.97)	29.98*** (2,5406)	.01
Self-disclosure	5.97 (1.84)	5.81 (1.88)	5.55 (2.13)	18.55*** (2,5412)	.01
Conflict resolution	5.67 (1.73)	5.18 (1.84)	4.75 (2.04)	108.46*** (2,5415)	.04

Note. η^2 = eta squared. ns = Not significant.

[a] Adolescents who perceived themselves to have emotional or behavioural problems, but not more than their peers.

[b] Adolescents who perceived themselves to have more emotional or behavioural problems than their peers.

[c] There was no significant difference between mean scores for these two problem recognition groups.

*p<.05, **p<.01, ***p<.001.

Post Hoc comparisons (Tukey‟s HSD) confirmed there was a statistically significant difference between the means of each of the problem recognition groups for these scales and subscales, with a few exceptions. Specifically, there was no significant difference between the mean scores for the Friends and Significant Other subscales between the Comparable Problems group and the No Problems group. Furthermore, there was no significant difference on the mean score of the Initiating Relationships subscale between adolescents from the Comparable Problems group and those from the More Problems group.

Despite the statistical significance of these results, the magnitude of the difference was small for most of the subscales as indicated by the effect size (eta-squared). Therefore, the statistical significance of these results was driven largely by the sample size. However, the differences between the problem recognition groups for the Family subscale were of a higher (medium) magnitude.

Adjustments for these covariates are made in the analysis of associations between adolescents‟ SDQ total difficulties score, the CESD score and the Anxiety score and problem recognition later in this chapter. These analyses were undertaken to determine whether psychosocial variables explained the significant associations found between adolescents‟ scores on the SDQ total difficulties scale, the CESD and the Anxiety scale and problem recognition.

Logistic regression analyses

To further investigate the relationships between adolescents‟ scores on the SDQ total difficulties scale and subscales, CESD and Anxiety scale with problem recognition, a series of logistic regression analyses were performed with two separate dichotomous outcome variables. To determine the factors that were significantly associated with adolescents‟ perceptions that they experienced emotional or behavioural problems, adolescents in the No Problems group were contrasted with those in the Emotional or Behavioural Problems group. To determine the factors that were significantly associated with adolescents‟ perceptions they had experienced more emotional or behavioural problems than their peers, adolescents in the More Problems group were contrasted with those in the Comparable Problems group.

Standardised scores (*z*-scores) were computed and used for all variables in the logistic regression analyses to eliminate scale differences and, consequently, each reported odds ratio estimate is the factor by which the odds of perceiving oneself to have a problem or of perceiving oneself to have more problems than one‟s peers increases with an increase in the predictor of one *Standard Deviation*. The reported *p*-values are those associated with a maximum likelihood χ^2 and associations were tested on the appropriate degrees of freedom.

Predictors of perceiving emotional or behavioural problems

To further investigate the relationships between adolescents‟ scores on the SDQ total difficulties scale and subscales, the CESD scale and Anxiety scale and their perceptions that they had experienced emotional or behavioural problems, the outcome variable was coded as follows:

0 = Did not perceive themselves to have emotional or behavioural problems.

1 = Perceived themselves to have emotional or behavioural problems.

Table 4.3 reports the results of univariate (unadjusted) logistic regression analyses with adolescents‟ SDQ total difficulties score, CESD score and Anxiety score as predictors of perceiving emotional or behavioural problems. It also reports the results of several multivariable logistic regression analyses adjusting for covariates, which included adolescents‟ scores on the Social Support subscales, the Constructive Problem Solving scale and the Interpersonal Skills subscales.

The odds ratios of the univariate logistic regression analyses indicated that adolescents with higher scores on the SDQ total difficulties scale, the CESD scale and the Anxiety scale were more likely to perceive they had emotional or behavioural problems ($p<.001$)[12,13,14]. Furthermore, when no adjustment for any other scales was undertaken, the prediction success of the SDQ total difficulties score was 70.5% overall, substantially more than the null model (60.1%). Nagelkerke‟s R^2 also indicated that 24.9% of the variance in the outcome variable was explained by the SDQ total difficulties score. As evident from Table 4.3, an increase of one standard deviation in the SDQ total difficulties score was associated with an almost three-fold increase in the odds of adolescents perceiving themselves to have emotional or behavioural problems.

[12] SDQ total difficulties score χ^2 (1, n = 5,547) = 1129.66.
[13] CESD score χ^2 (1, n = 5,472) = 1295.16.
[14] Anxiety score χ^2 (1, n = 5,516) = 604.98.

Table 4.3

Results of univariate and multivariable (adjusting for scores on psychosocial scales and subscales) logistic regression analyses of the outcome variable "perceiving emotional or behavioural problems"

Scale	*n*	Univariate (unadjusted)		*p* value	Adjusted for Social Support		*p* value	Adjusted for Interpersonal Skills		*p* value	Adjusted for Constructive Problem Solving		*p* value	Adjusted for all psychosocial variables[a]		*p* value
		OR	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*	
SDQ Tot	5547	2.84	2.6 -3.04	<.001	2.75	2.55-2.96	<.001	2.96	2.73-3.21	<.001	2.90	2.69-3.11	<.001	2.78	2.56-3.02	<.001
CESD	5472	3.27	3.03-3.54	<.001	3.10	2.86-3.37	<.001	3.21	2.95-3.49	<.001	3.26	3.01-3.53	<.001	3.03	2.78-3.31	<.001
Anxiety	5516	2.07	1.94-2.21	<.001	1.97	1.85-2.11	<.001	1.98	1.85-2.12	<.001	2.05	1.92-2.18	<.001	1.92	1.78-2.06	<.001

Note. OR = Odds ratio per standardised unit in the predictor; *CI* = Confidence Interval; SDQ Tot = SDQ Total difficulties score.

[a] All psychosocial variables included Social Support subscales, Interpersonal Skills subscales and the Constructive Problem Solving scale.

The prediction success of the CESD score (71.9 %) also exceeded that of the null model (60.1%) and the SDQ total difficulties score when there was no adjustment for any other covariates. In addition, the CESD score explained a greater proportion of variance in the outcome variable at 28.5%. As evident from Table 4.3, for each increase by one standard deviation in the CESD score, the odds of adolescents perceiving emotional or behavioural problems increased more than three-fold.

The prediction success for adolescents‟ Anxiety score was slightly less than that of the CESD and the SDQ total difficulties scores at 67.3%, but was still a considerable improvement over the null model (60.1%). The Anxiety score explained 14% of the variance in the outcome variable, which was substantially less than the SDQ total difficulties score or the CESD score. As evident from Table 4.3, with an increase of one standard deviation in the Anxiety score, the odds of adolescents perceiving emotional or behavioural problems increased approximately two-fold (when no adjustment was undertaken for other covariates).

After adjusting for adolescents‟ scores on psychosocial scales and subscales individually or with all psychosocial variables adjusted for simultaneously, the strength (odds ratios) and statistical significance of the associations between adolescents‟ SDQ total difficulties score, CESD score and Anxiety score and perceiving emotional or behavioural problems was largely unaltered (see Table 4.3). These results indicate there was only a small amount of common variance explained by these variables. Therefore, levels of social support, interpersonal skills or constructive problem solving ability did not explain the associations found between perceiving emotional or behavioural problems and the SDQ total difficulties score, the CESD score or the Anxiety score.

The SDQ total difficulties scale, CESD scale and the Anxiety scale assess related psychological constructs and were strongly correlated with each other within the full sample, although they were not so strongly correlated that they could be described as multi co-linear (see Table 3.6, Chapter 3). These scales were subject to a multivariable logistic regression analysis adjusting for adolescents‟ scores on each of the other two scales to determine the unique variance each scale explained in the outcome variable independent of the other two scales. A further multivariable analysis was also conducted adjusting for adolescents‟ scores on the Social Support subscales, the Interpersonal Skills subscales and the Constructive problem solving skills scale simultaneously, to determine whether they had any additional effect on these associations after adjusting for the other two scores on mental health symptoms scales (see Table 4.4). Results adjusting for each of the psychosocial variables individually are described in Table B1, Appendix B.

The model in which the SDQ total difficulties score, CESD score and Anxiety score were simultaneously entered as predictors of the outcome variable "perceiving emotional or behavioural problems" was statistically significant, χ^2 (3, n = 5,401) = 1,435.62, p<.001. These results indicate that the three predictors were able to distinguish reliably between adolescents who did and did not perceive themselves to have emotional or behavioural problems (see Table 4.4). Variance explained in the outcome variable by these three predictor variables was large at 31.6%. An interesting finding was that, while prediction success of this model was good at 73.0%, it only slightly exceeded that of the CESD score alone in the univariate logistic regression analysis (71.9%), which is consistent with the correlation of these scales. The results remained statistically significant for each of the mental health problem scales after adjusting for the other two scales, indicating that they each made a unique contribution to the variance in the outcome variable (perceiving emotional or behavioural problems).

While the odds ratio estimates from the multivariable analysis were all less than those from the univariate (unadjusted) analyses, this reduction in odds ratio was most prominent for the Anxiety score. To determine whether this was due to shared variance with either the CESD score or with the SDQ total difficulties score, two multivariable analyses were conducted adjusting for each of these scores separately. The odds ratio for the Anxiety score was similarly reduced when it was entered as a predictor with either the CESD score (*OR*=1.25, 95% *CI*:1.16-1.35, $p<.001$) or the SDQ total difficulties score (*OR*=1.34, 95% *CI*: 1.34-1.44, $p<.001$). This finding indicates that the Anxiety score explained common variance in the outcome variable with both the CESD score and SDQ total difficulties score.

After adjusting for adolescents‟ scores on the psychosocial scales and subscales, the odds ratio estimates of the SDQ total difficulties score, the CESD score and the Anxiety score were only slightly altered, indicating that these variables had little confounding effect on the observed associations. However, the Anxiety score was no longer significantly associated with the outcome variable. The Anxiety score was still significantly associated with perceiving emotional or behavioural problems after adjusting for *only* the psychosocial scales in the previous analyses, therefore, this reduction was likely due to the combination of adjusting for all of these scales included in this multivariable analysis, i.e., the SDQ and CESD scores, in addition to scores on psychosocial scales and subscales.

Table 4.4

Results of multivariable logistic regression analyses of "perceiving emotional or behavioural problems" adjusting for scores on each measure of mental health problems and psychosocial scales and subscales

Scale	Adjusted for other mental health symptom scales *n*=5395					*p* value	Adjusted for other mental health symptoms scale and all psychosocial factors *n*=5055					*p* value
	B	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*		*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	
SDQ Tot	.53	.05	133.95	1.71	1.56-1.87	<.001	.57	.05	115.73	1.78	1.60-1.97	<.001
CESD	.77	.05	239.99	2.17	1.97-2.39	<.001	.74	.05	187.93	2.10	1.89-2.33	<.001
Anxiety	.09	.04	5.18	1.10	1.01-1.19	.023	.08	.05	2.36	1.08	.99-1.18	.105

Note. *B*= Regression coefficient; *SE*= Standard error; *OR* = Odds ratio per standardised unit in the predictor; *CI* = Confidence Interval.

SDQ subscale scores as predictor variables

To further investigate whether different types of mental health problems (i.e., internalising problems versus externalising problems) were more strongly associated with adolescents‟ perceptions that they had emotional or behavioural problems, the associations between the five individual SDQ subscales with adolescents‟ self-perceived emotional or behavioural problems were also examined.

Each of the SDQ subscales measure related (although different) aspects of mental health and behavioural functioning. Therefore, univariate logistic regression analyses were conducted with each individual SDQ subscale as a predictor and a multivariable logistic regression analysis was also conducted adjusting for each of the other SDQ subscale scores and allowing for the possibility that some of the variance explained by the predictors is shared, with results shown in Table 4.5.

Table 4.5

Results of univariate and multivariable logistic regression analyses of the outcome variable "perceiving emotional or behavioural problems"

SDQ subscale	*n*	Univariate (unadjusted for other SDQ subscales)					*p* value	Adjusted for all other SDQ subscales					*p* value
		B	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*		*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	
Emotional symptoms	5550	.35	.03	700.93	2.36	2.22-2.52	<.001	.61	.04	266.28	1.84	1.79-1.98	<.001
Conduct disorders	5550	.71	.03	524.19	2.04	1.92-2.16	<.001	.40	.04	105.19	1.49	1.38-1.60	<.001
Hyperactivity	5549	.68	.03	492.01	1.98	1.86-2.10	<.001	.39	.04	78.05	1.39	1.29-1.49	<.001
Peer problems	5551	.47	.03	267.72	1.60	1.52-1.70	<.001	.12	.04	11.63	1.13	1.05-1.20	.001
Prosocial behaviour	5552	-.09	.03	11.38	.91	.86-.96	.001	.10	.03	8.86	1.11	1.04-1.19	.003

Note. *B*=Regression coefficient; *SE*=Standard Error; *OR* = Odds ratio per standardised unit in the predictor; *CI* = Confidence Interval.

All five of the SDQ subscale scores were significantly associated (without adjustment) with perceiving emotional or behavioural problems[15] (p<.001). Adolescents who scored higher on the subscales of Emotional Symptoms, Conduct Disorders, Hyperactivity and Peer problems were significantly more likely to perceive they had emotional or behavioural problems. The prediction success of adolescents‟ scores on the Emotional Symptoms subscale, the Conduct Disorders subscale, the Hyperactivity subscale and the Peer problems subscale was 68.6%, 64.8%, 63.4% and 63.4%, respectively, with each exceeding the null model (60.1%). The variance explained by each of these scores was 19.1%, 13.9%, 12.8% and 6.8%, respectively. The prediction success of the Prosocial Behaviour subscale score did not improve on the null model and the variance explained by this subscale was minimal at .3%.

The model consisting of the five subscale scores entered simultaneously as predictors of adolescents‟ self-perceived emotional or behavioural problems was also statistically significant, χ^2 (1, n = 5547) = 1202.10, p<.001, and prediction success exceeded that of the null model (60.1%), as well as any individual SDQ subscale scores at 71.3%. Variance explained by the five scores was 26.3%.

Compared to the results of the univariate analyses, with the exception of the Prosocial Behaviour subscale, the odds ratio estimates were slightly reduced for each of the subscales in the multivariable analysis indicating that there was some shared variance explained by the subscale scores; however, results remained statistically significant for each subscale.

[15] Emotional Symptoms χ^2 (1, n = 5,550) = 843.52, Conduct Disorders χ^2 (1, n = 5,550) = 603.17, Hyperactivity χ^2 (5, n = 5,549) = 553.34, Peer Problems χ^2 (1, n = 5,551) = 286.19, Prosocial behaviour χ^2 (1, n = 5,552) = 11.38.

For the Prosocial Behaviour subscale, the odds ratio was slightly increased after adjusting for adolescents‟ scores on the other SDQ subscales. This is likely due to the negative correlation that the Prosocial Behaviour score had with the other SDQ subscale scores (see Chapter 3). For example, higher scores on the Prosocial Behaviour subscale were significantly associated with lower scores on the other SDQ subscales. However, lower scores on these other SDQ subscales were also significantly associated with a greater likelihood of perceiving emotional or behavioural problems. Therefore, adolescents with higher scores on the Prosocial Behaviour scale may have been less likely to perceive themselves to have emotional or behavioural problems, in part because they were also likely to have lower scores on the other SDQ subscales.

To determine the unique variance that each of the subscale scores explained in the outcome variable, a series of analyses were conducted extracting each variable from the full model one at a time. Removing the Emotional Symptoms score from the model resulted in the largest decrease in the proportion of the variance explained (26.3% to 20.6%), suggesting it explained the most unique variance in the outcome variable. Removing the Conduct Disorder subscale resulted in a smaller decrease in the proportion of the variance explained (26.3% to 24.2%), followed by the Hyperactivity subscale score (26.3% to 24.8%). Removing the Peer Problems subscale and the Prosocial Behaviour subscale produced only a minimal change in the proportion of variance explained by the model (less than 1%).

Predictors of adolescents' perceptions they had more emotional or behavioural problems than their peers

To determine the associations between adolescents‟ scores on the SDQ total difficulties scale, the CESD scale and the Anxiety scale with their perceptions that they had more emotional or behavioural problems than their peers, the previous analyses were replicated

with the outcome variable "perceiving more problems than peers". These associations were examined only among those adolescents who had perceived emotional or behavioural problems. Therefore, the outcome variable was coded as follows:

0 = Perceived comparable problems: Adolescents who perceived themselves to have emotional or behavioural problems but did not have more of these problems than their peers.

1 = Perceived more problems than peers: Adolescents who perceived themselves to have emotional or behavioural problems and who also reported they had more problems than their peers.

SDQ total difficulties scale, CESD and Anxiety scale as predictor variables

The results of the logistic regression analyses performed with the SDQ total difficulties score, the CESD score and the Anxiety score as predictor variables of the outcome variable "perceiving more problems than peers" are reported in Table 4.6. Results of the univariate (unadjusted) logistic regression analyses indicated that adolescents with higher scores on the SDQ total difficulties scale, the CESD scale and the Anxiety scale were more likely to perceive they had more problems than peers ($p<.001$)[16,17,18]. As evident from the first left hand columns of Table 4.6, an increase of one standard deviation in the SDQ total difficulties score or the CESD score was associated with a two-fold increase in the odds of adolescents perceiving themselves to have more problems than their peers, ignoring all the other predictor variables. An increase of one standard deviation in the Anxiety score was

[16] SDQ total difficulties scale, χ^2 (1, n = 2,196) = 214.42.
[17] CESD, χ^2 (1, n = 2,171) = 277.56.
[18] Anxiety, χ^2 (1, n = 2,183) = 128.92.

associated with a 60% increase in the odds of adolescents perceiving themselves to have more problems than their peers.

Table 4.6

Univariate and multivariable logistic regression analyses, with the SDQ total difficulties score, CESD score and Anxiety score as predictors of the outcome variable "perceiving more problems than peers"

Scale	*n*	Univariate (no covariates)		*p* value	Adjusted for Social Support		*p* value	Adjusted forInterpersonal skills		*p* value	Adjusted for Constructive Problem Solving		*p* value	Adjusted for all psychosocial factors [a]		*p* value
		OR	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*	
SDQ Tot	2196	1.98	1.79-2.18	<.001	1.90	1.72-2.11	<.001	2.07	1.85-2.32	<.001	2.04	1.84-2.25	<.001	1.99	1.77-2.23	<.001
CESD	2171	2.01	1.84-2.20	<.001	1.95	1.77-2.14	<.001	2.02	1.83-2.22	<.001	2.03	1.85-2.23	<.001	1.95	1.76-1.22	<.001
Anxiety	2183	1.57	1.45-1.70	<.001	1.51	1.39-1.64	<.001	1.58	1.45-1.73	<.001	1.56	1.44-1.69	<.001	1.52	1.39-1.67	<.001

Note. OR = Odds ratio per standardised unit in the predictor; *CI* = Confidence Interval; SDQ Tot = SDQ Total difficulties score.

[a] All psychosocial factors included Social support subscale score, Interpersonal skills subscale scores and Constructive Problem Solving score.

Prediction success of the SDQ total difficulties score was 63.3% overall, substantially more than the null model (54.5%). Nagelkerke's R^2 indicated that 12.4% of the variance in the outcome variable was explained by the SDQ total difficulties score. The CESD score also had a good prediction success rate of 65.6 %, exceeding that of the null model (54.5%) and the SDQ total difficulties score (63.3%), and explained 16% of the variance in the outcome variable. The prediction success of the Anxiety score was slightly less than that of the CESD score and the SDQ total difficulties score at 61.9%, but still exceeded the null model (54.4%). The Anxiety score accounted for 7.6% of the variance in the outcome variable-substantially less than the SDQ total difficulties score or the CESD score.

Table 4.6 also shows that adjusting for levels of Social Support, Interpersonal Skills and Constructive Problem Solving ability had little effect on odds ratio estimates for each of the above associations. Thus, adolescents' scores on the psychosocial subscales and scales did not explain the associations between the SDQ total difficulties score, CESD score and Anxiety score and adolescents' perceptions they had more problems than their peers.

To determine the unique contribution of each of the predictor variables (the SDQ total difficulties score, the CESD score and Anxiety score) to the outcome variable independent of the effects of each other, they were subjected to multivariable logistic regression analysis (see Table 4.7). A further multivariable logistic regression analysis was also conducted, adjusting simultaneously for adolescents' scores on psychosocial scales and subscales, to determine whether adjusting for these variables additionally affected the strength of these associations after also adjusting for other measures of mental health symptoms (Table 4.7). Results adjusting for each variable individually are described in Table B2, Appendix B.

The model with the SDQ total difficulties score, the CESD score and Anxiety score as predictors was statistically significant, χ^2 (3, n = 2140) = 301.38, p<.001, indicating that these variables together were able to discriminate between adolescents who did and did not perceive themselves to have more emotional or behavioural problems than their peers. The variance in the dependent variable that was explained by these predictor variables was substantial at 17.6%. Prediction success was good at 65.7%, but was only equivalent to that of the CESD score alone in the univariate analysis (65.6%). As suggested for the previous outcome variable (perceiving emotional or behavioural problems), this is consistent with the high correlation of these scales.

Table 4.7

Results of multivariate logistic regression analyses of "perceiving more problems than peers" adjusting for scores on measures of mental health problems and psychosocial scales and subscales

Scale	Adjusted for other mental health symptom scales *n*=2140					*p* value	Adjusted for other mental health symptoms scale and all psychosocial variables[a] *n*=2007					*p* value
	B	*SE*	Wald test (z-ratio)	*OR*	95% *CI*		*B*	*SE*	Wald test (z-ratio)	*OR*	95% *CI*	
SDQ Tot	.31	.07	23.14	1.37	1.20-1.55	<.001	.34	.08	20.01	1.40	1.21-1.62	<.001
CESD	.50	.06	69.94	1.64	1.46-1.84	<.001	.47	.06	55.84	1.61	1.42-1.82	<.001
Anxiety	.06	.05	1.15	1.06	.96-1.17	.283	.06	.06	1.28	1.07	.95-1.19	.259

Note.B= Regression coefficient, *SE*=Standard Error; *OR* = Odds ratio per standardised unit in the predictor; *CI* = Confidence Interval.

[a] All psychosocial factors included Social support subscale score, Interpersonal skills subscale scores and Constructive Problem Solving score.

The results remained statistically significant for the SDQ total difficulties score and the CESD score after adjusting for the other two scale scores, indicating they each made a unique contribution to the variance in the outcome variable. However, there was a reduction in odds ratios for each of the scales as compared to results of the analyses in Table 4.6, indicating that these predictors explained some common variance in the outcome variable. The Anxiety score was no longer a significant predictor and did not account for any unique variance in the outcome variable beyond that shared with the SDQ and CESD scores. To determine whether this was due to shared variance with the CESD score or SDQ total difficulties score, two further analyses were conducted with the Anxiety score as a predictor, adjusting for each of these scores separately. The results revealed that the odds ratio estimate for the Anxiety score was significantly reduced when it was entered with either the CESD score (*OR*=1.14, 95% *CI*:1.03-1.26, *p*=.010) or the SDQ total difficulties score (*OR*=1.23, 95% *CI*:1.12-1.35, *p*<.001), suggesting it shared variance with both of these scales.

After adjusting for adolescents‟ scores on the psychosocial scales and subscales in addition to the other mental health problem scales, the odds ratio estimates of the SDQ total difficulties score and the CESD score were only slightly altered, again indicating that adjusting for psychosocial variables had little impact on the strength of the associations.

SDQ subscales

To further investigate whether different types of mental health problems were more strongly associated with perceiving more problems than peers, the associations between the five individual SDQ subscale scores and the outcome variable were also examined. A series of univariate logistic regression analyses were conducted with each individual SDQ subscale score entered separately. A multivariable logistic regression was also conducted to

control for each of the other SDQ subscale scores and account for any shared variance between the subscales. Table 4.8 reports the results of both univariate analyses and the multivariable logistic regression analysis.

The results of the unadjusted analyses indicated that all of the SDQ subscales were significantly associated with adolescents‟ perceptions they had more problems than peers [19] ($p<.001$), except for the Prosocial Behaviour subscale. The unadjusted analyses show that unit increases on each of these subscales (the Emotional Symptoms, Conduct Disorders, Hyperactivity and Peer Problems subscales) were associated with significantly greater odds of perceiving more problems than peers. Prediction successes for the Emotional Symptoms score, the Conduct Disorders score, the Hyperactivity score and the Peer Problems score were 62.2%, 60.4%, 57.5% and 58.9% respectively, and variance explained was 10.4%, 5.9%, 2.8% and 4.7%, respectively. Prediction success exceeded the null model (54.5%) for each of the four subscales.

After adjusting for all other SDQ subscale scores, the Emotional Symptoms score, Conduct Disorders score and Peer Problems score remained significantly associated with the outcome variable. However, the Hyperactivity subscale was no longer significantly associated with the outcome variable, and the association between the Prosocial Behaviour subscale and the outcome variable remained non-significant.

[19] Emotional Symptoms subscale χ^2 (1, n = 2198) = 178.84, Conduct Disorders χ^2 (1, n = 2198) = 99.37, Hyperactivity χ^2 (1, n = 2196) = 47.32, and Peer Problems χ^2 (1, n = 2198) = 79.45.

Table 4.8

Results of univariate and multivariable logistic regression analyses of the outcome variable "perceiving more problems than their peers"

Scale	Univariate (unadjusted for other SDQ subscales)						*p* value	Adjusted for all other SDQ subscales (*n*=2196)					*p* value
	n	*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*		*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	
Emotional symptoms	2198	.56	.04	163.02	1.76	1.61-1.92	<.001	.43	.05	73.08	1.53	1.39-1.69	<.001
Conduct disorders	2198	.42	.04	93.77	1.52	1.40-1.65	<.001	.32	.05	34.46	1.37	1.24-1.52	<.001
Hyperactivity	2196	.31	.05	46.11	1.36	1.24-1.48	<.001	.04	.06	.54	1.04	.94-1.16	.462
Peer problems	2198	.36	.04	75.83	1.43	1.32-1.55	<.001	.17	.05	13.10	1.18	1.08-1.29	<.001
Prosocial behaviour	2199	-.01	.04	.08	.99	.91-1.07	.771	.09	.05	3.18	1.10	.99-1.21	.075

Note. *B*=Regression coefficient; *SE*=Standard error; *OR*= Odds ratio per standardised unit in the predictor; *CI*=Confidence interval.

To determine the unique variance that each of the SDQ subscale scores explained in the outcome variable, a series of analyses were conducted extracting each variable from the full model one at a time. Removing the Emotional Symptoms score from the model resulted in the largest decrease in the proportion of the variance explained (14.2% to 10.0%). Removing the Conduct Disorder subscale resulted in a smaller decrease in the proportion of the variance explained (14.2% to 12.3%). Removing the Hyperactivity subscale, the Peer Problems subscale and the Prosocial Behaviour subscale produced only a minimal change in the proportion of variance explained by the model (less than 1%).

Discussion

Mental health problems

In this chapter, slightly weaker (but still quite strong) associations were shown between adolescents‟ scores on the SDQ total difficulties scale and subscales, CESD scale and Anxiety scale and their perceptions of whether they had more problems than peers, compared to the associations found with reporting emotional or behavioural problems. This is due to the different composition of adolescents in each of these levels of problem recognition and the number of adolescents in each level. Adolescents who had perceived they had emotional or behavioural problems were contrasted with those who perceived they had no problems, whereas adolescents who perceived they had more problems than their peers were contrasted with those who perceived they had emotional or behavioural problems. Because both of these latter groups of adolescents had attained the initial stage of problem recognition, they were both likely to be experiencing a higher level of mental health problems compared to adolescents who did not perceive themselves to have problems and thus differences in levels of mental health problems between these two groups would be less marked.

Hypothesis 4.1, that adolescents with higher scores on the SDQ total difficulties scale, CESD scale and Anxiety scale will be more likely to perceive they had emotional or behavioural problems and to perceive they had more emotional or behavioural problems than their peers, was supported by the results of this study. These results are consistent with those of previous studies that assessed adolescents' self-perceived problem recognition slightly differently to this study (Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). For example, Sears found that adolescents who reported they had serious emotional, behavioural or physical problems in the last year reported more severe levels of emotional adjustment (assessed by levels of depression, anxiety and self esteem) and behavioural adjustment problems (e.g., substance abuse, school misconduct and antisocial behaviour) than those who did not report such problems. Similarly, Zwaanswijk, Van der Ende et al. found that adolescents with higher levels of mental health problems had an increased likelihood of perceiving themselves to have worse emotional or behavioural problems than other adolescents.

While this relationship may seem self-evident and levels of mental health problems also explained a substantial proportion of the variance in adolescents' perceptions that they had emotional or behavioural problems in this study, they did not completely explain the variability in adolescents' perceptions that they had emotional or behavioural problems or more problems than their peers. Furthermore, the results suggest that many adolescents do not perceive themselves to have emotional or behavioural problems or to have more problems than their peers even though they experience a high level of mental health problems (total difficulties, depression and anxiety), as evidenced by the Figures 4.1 to 4.4.

The adolescents of this study may have had difficulty recognising they had emotional or behavioural problems because they lacked *emotional competence*. As noted in the

introduction, emotional competence pertains to the ability to understand thoughts and feelings, to articulate and describe thoughts and feelings to others and to manage these thoughts and feelings effectively (Ciarrochi et al., 2003). Having higher levels of emotional competence may act as facilitator to recognising emotional or behavioural problems at one end of the continuum, but lower levels may act as a barrier at the other end (Rickwood et al., 2005).

It is also possible that some adolescents have difficulty recognising emotional or behavioural problems as problematic, as they lack knowledge of the signs and symptoms of such symptoms, i.e., they lack mental health literacy. Studies of adolescents‟ levels of mental health literacy have indicated that adolescents have difficulty recognising symptoms of depression and psychosis as mental health problems (Burns & Rapee, 2006; Cotton, Wright, Harris, Jorm, & McGorry, 2006).

An additional finding in this chapter was that levels of anxiety were related to an increased likelihood of perceiving more problems than peers, but not beyond that explained by levels of depression (CESD) and total difficulties (SDQ). These results suggest that, in the absence of co-morbid depression symptoms or other emotional and behavioural difficulties, adolescents may be less likely to recognise symptoms of anxiety as problematic. This may be due to the nature of the symptoms. For example, being worried, preoccupied and irritable and having sleep difficulties, all symptoms of anxiety, may be less obvious to the adolescent as symptoms of emotional or behavioural problems than symptoms of depression and other mental health difficulties (e.g., conduct problems or hyperactivity).

Hypothesis 4.2 was based on results of a previous study suggesting that higher levels of externalising problems may be more strongly related to adolescents‟ initial perception they

had emotional or behavioural problems than higher levels of internalising problems (Sears, 2004). This hypothesis was not supported by the findings reported in this chapter.

In fact, having higher levels of internalising symptoms explained a larger proportion of unique variance in perceiving emotional or behavioural problems and perceiving more problems than peers compared to the unique variance explained by higher levels of externalising problems (conduct problems, peer problems, hyperactivity). As the differences in these proportions were only small, the results provide only limited evidence that adolescents‟ levels of either internalising or externalising symptoms were more strongly associated with problem recognition. The main finding was that experiencing any symptoms, whether internalising or externalising in nature, increased the likelihood that adolescents perceived they had emotional or behavioural problems or more of these problems than peers. This finding is inconsistent with that found by Sears (2004) that those adolescents who reported they had emotional, behavioural and physical problems differed more on markers of behavioural adjustment than they did on markers of emotional adjustment. This difference may have arisen because the measures of behavioural adjustment (externalising symptoms) employed by Sears were more noticeable and more disruptive than the externalising problems assessed in this study. For example, while this study assessed adolescents‟ levels of conduct problems (e.g., fighting, lying or cheating), peer problems (e.g., whether the adolescent has friends or is teased) and hyperactivity (e.g., easily distracted), Sears assessed substance abuse, school misconduct and antisocial behaviour.

It should also be noted that, although Sears (2004) found the strength of these associations differed according to differences in the types of problems adolescents experienced (internalising symptoms versus externalising symptoms), she also found that both types of

problems contributed to adolescents‟ reports they had a serious a serious emotional, behavioural or physical problem. The results of this chapter are also consistent with that of the study conducted by Zwaanswijk, Van der Ende et al. (2003) that adolescents with higher levels of mental health symptoms, either internalising or externalising in nature, were more likely to report they had worse mental health problems than their peers.

Psychosocial factors

An additional aim of this chapter was to investigate whether the significant associations found between adolescents‟ levels of mental health problems (SDQ total difficulties score, CESD score or Anxiety score) were explicable in terms of their levels of psychosocial functioning, i.e., interpersonal skills, social skills or constructive problem solving skills. The results indicated that psychosocial variables had little impact on the strength or statistical significance of the associations between adolescents‟ SDQ total difficulties score, CESD score or Anxiety score and problem recognition (i.e., perceiving emotional or behavioural problems or perceiving more problems than peers).

While associations between psychosocial factors and help seeking overall have been theorised (Andersen, 1995; Andersen & Newman, 1973; Rickwood et al., 2005; Srebnik et al., 1996), no previous studies (with the exception of social support) have examined the association between these psychosocial variables and earlier stages of adolescent help-seeking behaviour such as problem recognition. Although it was not a central focus of this chapter, the results of this chapter also indicated that adolescents‟ levels of interpersonal skills, constructive problem solving ability and social support were indeed lower among those who had a self perception of emotional or behavioural problems and/or more problems than peers.

Adolescents with higher levels of social support, problem solving skills and interpersonal skills are likely to experience fewer emotional or behavioural problems and this may explain why those with higher levels of psychosocial functioning were less likely to perceive themselves to have emotional or behavioural problems or more of these problems than their peers. However, an alternative explanation for this observation is that higher levels of social support may act as a buffer against perceiving emotional or behavioural problems as problematic. Adolescents with higher levels of social support may feel more supported and secure and may therefore be less likely to have a self-perception of emotional or behavioural problems or more problems than others who may not have the same levels of support. Alternatively, these adolescents may have succumbed to social norms (from family or friends) that may have discouraged them from reporting or acknowledging they have emotional or behavioural problems (Cauce et al., 2002). The relationships between these psychosocial variables and problem recognition are further investigated in subsidiary analyses in the following chapter.

Summary

In summary, there were three main findings of this chapter:

- Adolescents‟ levels of total difficulties (SDQ total difficulties score), depression (CESD score) and anxiety (Anxiety score) showed a strong positive association with their self-perceived problem recognition (perceived emotional or behavioural problems, and perceived more problems than peers). Variation in adolescents‟ levels of psychosocial functioning could not explain these associations.

- Higher levels of any type of problem, whether internalising or externalising in nature, were positively associated with adolescents‟ self-perceived problem recognition.

- Adolescents who perceived themselves to have emotional or behavioural problems and more of these problems than their peers had lower levels of social support, interpersonal skills and constructive problem solving abilities than those who did not perceive themselves to have problems.

CHAPTER 5: THE RELATIONSHIPS BETWEEN SOCIO-DEMOGRAPHIC CHARACTERISTICS AND PROBLEM RECOGNITION AND SUBSIDIARY ANALYSES OF ALL PREDICTORS OF PROBLEM RECOGNITION

Introduction

Gender, ethnicity and parental and family factors have been found to be significantly associated with different indicators of adolescent help-seeking behaviour (Barker & Adelman, 1994; Gasquet et al., 1997; Kataoka et al., 2002; Kuhl et al., 1997; Laitinen-Krispijn et al., 1999; Saunders et al., 1994; Schonert-Reichl & Muller, 1996; Sears, 2004; Zhang et al., 1998; Zwaanswijk, Van der Ende et al., 2003). While only a few studies have specifically examined the associations between socio-demographic characteristics and different stages of adolescent help-seeking behaviour (Saunders et al.; Sears; Zwaanswijk, Van der Ende et al.), the results of these studies suggest that socio-demographic characteristics may have differential associations with each stage of help-seeking behaviour. This chapter examines: i) the associations between adolescents‟ socio-demographic characteristics with the first stage of help-seeking behaviour, problem recognition; and ii) whether the strength and significance of these associations persist after adjusting for adolescents‟ levels of mental health problems (scores on the SDQ total difficulties scale, CESD scale and Anxiety scale).

Further subsidiary analyses are then conducted with all key variables (socio-demographic characteristics, mental health problems and psychosocial factors) investigated in this study as predictors of problem recognition.

Definition of problem recognition groups

As described in Chapter 4, all adolescents were assigned to one of the two problem recognition groups described as the "Emotional or Behavioural Problems group" (*n*=2,229) and the "No Problems group" (*n*=3,357). In addition, those in the Emotional or Behavioural Problems group were categorised into the following two sub-groups: "More Problems group" (i.e., perceived more problems than peers; *n*=1,008) and "Comparable Problems" group (i.e., perceived the same amount of problems as peers; *n*=1,221).

Hypotheses

Gender

The results of studies conducted by Sears (2004) and Zwaanswijk, Van de Ende et al. (2003) indicated that female adolescents were more likely than male adolescents to report they had experienced emotional, behavioural or physical problems or that they had experienced worse mental health problems than their peers. In this study it is hypothesised that:

Females will be more likely than males to perceive that they have emotional or behavioural problems and more of these problems than their peers (Hypothesis 5.1).

Language spoken at home

There is currently limited knowledge about the help-seeking process for adolescents from ethnic minority backgrounds (Cauce et al., 2002). The present chapter will investigate whether there is a significant association among Australian adolescents between the language predominantly spoken by adolescents at home and problem recognition. Based on

findings of previous studies (Kataoka et al., 2002; Kodjo & Auinger, 2004); Kuhl, Horlick & Morrissey 1997), it is hypothesised that:

Adolescents from a non-English speaking background will be less likely than those from an English speaking background to perceive that they have emotional or behavioural problems or that they have more of these problems than their peers (Hypothesis 5.2).

Parental status

Few studies have examined the relationship between parental and family factors and adolescents' self-perceived problem recognition; however, those that have indicate that adolescents from certain family situations are more likely to recognise they have problems and worse problems than their peers (Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). For example, Sears found that adolescents who were living with someone other than a parent were more likely to report they had experienced serious emotional, behavioural or physical problems, compared to those in either a one or two parent family. Zwaanswijk, Van der Ende et al. found that adolescents from a one-parent family were significantly more likely to report that they had mental health problems that were worse than their peers', compared to adolescents from other family situations. Based on the results of these previous studies (Sears, 2004; Zwaanwijk et al., 2003), in this study it is hypothesised that:

Adolescents from families where parents are not living together (i.e., parents are separated or divorced; one or more is deceased; parents have never lived together) will be more likely than adolescents who have parents who live together to perceive they have emotional or behavioural problems and to perceive they have more problems than their peers (Hypothesis 5.3).

Parental paid employment status

Parents‟ paid employment status may affect the resources parents have to assist adolescents with mental health problems and whether adolescents receive help from services and, subsequently, whether they receive the professional help they perceive themselves to need. It may also affect their perceptions of whether they have emotional or behavioural problems or a need for professional help with their problems. For example, Sawyer et al. (2007) found that significantly higher proportion of adolescents aged 13 to 17 that had mental health problems in the clinical range (assessed by the CBCL; Achenbach, 1991a) were from families with lower incomes, compared to those who did not have problems in the clinical range. Therefore adolescents from families who encounter more financial restraint may be more likely to perceive themselves to have emotional or behavioural problems and more of these problems than their peers than those from families with less restraint. It is hypothesised that:

Adolescents with fathers and mothers who are not in full time paid employment (i.e., do not work in paid employment, work in part time paid employment or are retired) will be more likely than adolescents with fathers and mothers who are in full time paid employment to perceive they have emotional or behavioural problems and more of these problems than their peers (Hypothesis 5.4).

It is possible that the significant associations found between adolescents‟ socio-demographic characteristics and their self-perceived problem recognition are explained by their levels of mental health problems. Therefore, the aforementioned hypothesised associations will be examined adjusting for adolescents‟ levels of mental health problems (i.e., SDQ total difficulties score, CESD score and Anxiety score) to adjust for this possibility.

Chapter structure

First, the proportions of adolescents in each problem recognition group (i.e., No Problems, Comparable Problems, and More Problems) were examined for the categories of each socio-demographic characteristic investigated in this study. A series of Pearson‟s chi-square tests were conducted to determine the socio-demographic characteristics that were significantly associated with problem recognition. These analyses guided the choice of socio-demographic characteristics to be included in logistic regression analyses.

A series of univariate and multivariable logistic regression analyses were then performed to further investigate the relationships between socio-demographic characteristics and problem recognition. These analyses also determined whether significant associations between socio-demographic characteristics and problem recognition persisted after adjusting for all socio-demographic characteristics and levels of mental health problems (SDQ total difficulties score, the CESD score and Anxiety score).

Socio-demographic differences in the proportions (%) of adolescents in each problem recognition group

The percentage of adolescents in each of the problem recognition groups, are shown for each socio-demographic characteristic in Table 5.1.

Gender

It is apparent that a greater proportion of females than males perceived themselves to have emotional or behavioural problems, but not more than their peers (Comparable Problems) and perceived themselves to have more problems than their peers (More Problems) (see Table 5.1). Pearson‟s chi-square indicated that there was a significant association between gender and problem recognition.

Language spoken at home

Compared to adolescents who reported they spoke predominantly English or English and another language at home, a smaller proportion of adolescents who spoke predominantly another language at home were in the Comparable Problems and More Problems groups and a greater proportion were in the No Problems group (see Table 5.1). These results indicate that problem recognition was less prevalent among adolescents who spoke another language at home compared to those who spoke both English and another language at home or who spoke only English at home. Pearson‟s chi-square indicated that there was a significant association between language spoken at home and problem recognition (see Table 5.1).

Parental status

Compared to adolescents whose parents lived together, the proportions of adolescents in the Comparable Problems and More Problems group were greater among adolescents who reported any of the other parental situations, indicating problem recognition was more prevalent among these parental categories (see Table 5.1). Pearson‟s chi-square indicated that these differences were statistically significant.

Table 5.1

Adolescents' self-perceived problem recognition (%) according to categories of socio-demographic characteristics

Socio-demographic characteristics	*n*	% No perceived problems	Perceived Emotional or Behavioural problems		χ^2 *(df)*
			% Comparable Problems[a]	% More Problems[b]	
Gender					
Male	2627	67	19	14	$105.9_{(2)}$***
Female	2957	54	24	22	
Language spoken at home					
English	4836	60	22	18	$12.4_{(4)}$*
English & another language	659	58	21	21	
Another language	76	74	11	16	
Parental status					
Parents living together	3909	65	20	15	$150.6_{(8)}$***
Separated or divorced	1378	49	25	26	
One or more parent deceased	109	47	23	30	
Parents have never lived together	59	41	31	29	
Other parental situation	109	46	28	26	
Mother"s paid employment					
Full time	2178	60	21	19	$11.1_{(6)}$
Part time	1827	62	22	16	
Not working	1408	59	23	18	
Retired	73	52	23	25	
Father"s paid employment					
Full time	4311	62	22	16	$38.0_{(6)}$***
Part time	576	53	23	24	
Not working	387	54	23	23	
Retired	113	55	22	23	

[a] Perceived themselves to have emotional or behavioural problems, but not more than their peers.

[b] Perceived themselves to have more emotional or behavioural problems than their peers.

*p<.05, ***p<.001.

Maternal paid employment

It is evident that there was little difference in the proportions of adolescents in each of the problem recognition groups from Table 5.1 across categories of mother‟s paid employment status, with the exception of having mothers who were retired where a greater proportion of adolescents perceived themselves to have more problems than their peers.. Pearson‟s chi-square indicated there was no significant association between mother‟s paid employment status and problem recognition, although this result approached significance (p=.084).

Paternal paid employment

It is apparent from Table 5.1 that adolescents with fathers who were in full time paid employment were less likely to perceive they had emotional or behavioural problems, compared to those who reported their father was in paid part time employment, was retired or was not in paid employment. Pearson‟s chi-square indicated father‟s paid employment status was significantly associated with problem recognition.

Summary

In summary, the results of the Pearson chi-square analyses indicated that there was significant variation in problem recognition by the socio-demographic characteristics of gender, parental status, father‟s paid employment status and language spoken at home. These socio-demographic characteristics were included in the main analyses to confirm and further explore these associations. The association between mother‟s paid employment status and problem recognition approached significance and was also included in the main analyses for completeness.

Logistic regression analyses

Socio-demographic predictors of adolescents' self-perceived emotional or behavioural problems

To determine the associations between adolescents‟ socio-demographic characteristics and adolescents‟ perceptions they had emotional or behavioural problems, adolescents who did not perceive themselves to have emotional or behavioural problems were contrasted with those who perceived themselves to have emotional or behavioural problems.

Results of univariate (unadjusted) logistic regression analyses

The results of the unadjusted logistic regression analyses are reported in Table 5.2 and are consistent with the results of the Pearson chi-square analyses. Females were significantly more likely (*OR* =1.74) than males to perceive they had emotional or behavioural problems. It is also evident that adolescents who spoke English and another language at home did not differ in the likelihood of perceiving emotional or behavioural problems from those who spoke just English at home. However, adolescents who reported they spoke another language at home were less likely (*OR*=0.54) to perceive they had emotional or behavioural problems, compared to adolescents who spoke just English at home.

Table 5.2

Results of univariate (unadjusted) logistic regression analyses with socio-demographic characteristics as predictors of perceiving emotional or behavioural problems

Socio-demographic characteristic	*n*	*B*	*SE*	*OR*	95% *CI*	*p* value[†]
Gender						
Male	2627			1.00		
Female	2957	.56	.06	1.74	1.56-1.94	<.001
Language spoken at home						
English	4836			1.00		
English & another language	659	.08	.08	1.08	.92-1.28	.344
Another language	76	-.62	.26	.54	.32-.90	.019
Parental status						
Parents living together	3909			1.00		
Separated/ divorced	1378	.64	.06	1.90	1.68-2.14	<.001
One or more parent deceased	109	.75	.20	2.11	1.44-3.09	<.001
Parents never lived together	59	.99	.27	2.70	1.60-4.56	<.001
Other parental situation	109	.78	.20	2.19	1.49-3.21	<.001
Mother‟s paid employment						
Full time	2178			1.00		
Part time	1827	-.11	.07	.89	.79-1.02	.085
Not working	1408	.03	.07	1.03	.90-1.18	.637
Retired	73	.30	.24	1.35	.85-2.16	.207
Father‟s paid employment						
Full time	4311			1.00		
Part time	576	.37	.09	1.45	1.22-1.73	<.001
Not working	387	.34	.11	1.41	1.14-1.73	.001
Retired	113	.30	.19	1.35	.92-1.96	.122

Note. B = Unstandardised Regression coefficient, *SE*= Standard Error, *OR* = Odds ratio, *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

[†] *p* value is based on a comparison of the appropriate estimate with the "reference" category.

Compared to adolescents with parents who lived together, adolescents with other parental situations (parents who were separated or divorced, parents had never lived together, parents who were deceased or another parental situation not mentioned) were considerably more likely to perceive they had emotional or behavioural problems. None of the mother"s paid employment status categories were significantly associated with perceiving emotional or behavioural problems. However, compared to adolescents who reported their fathers were in full time paid employment, adolescents with fathers who were in part time paid employment or were not working in paid employment were significantly more likely to perceive they had emotional or behavioural problems.

Results of the multivariable analysis

The socio-demographic characteristics were entered simultaneously in a multivariable logistic regression analysis to determine which characteristics were significantly associated with the outcome variable after adjusting for the effects of all other socio-demographic characteristics (see Table 5.3). The model consisting of the five socio-demographic characteristics as predictors was statistically significant, χ^2 (13, n = 5312) = 230.83, p<.001. This model was able to distinguish between adolescents who did and did not perceive themselves to have emotional or behavioural problems. However, variance explained in the outcome variable was small at 5.8%. Prediction success of the model improved only slightly on the null model (60.4%) at 62.7%.

It is evident that adjusting for all socio-demographic characteristics did not change findings of the univariate (unadjusted) analyses (see Table 5.2), indicating the socio-demographic characteristics explained little common variance in the outcome variable. However, the association between having a father who was not in paid employment and perceiving

emotional or behavioural problems was no longer statistically significant after adjusting for the other socio-demographic characteristics.

Table 5.3

Results of the multivariable logistic regression analysis of perceiving emotional or behavioural problems with socio-demographic characteristics as predictors

Socio-demographic characteristics *n*=5312	*n*	*B*	*SE*	Wald test (z-ratio)	*OR*	*95% CI*	*p* value[†]
Gender							
Male	2489				1.00		
Female	2823	.53	.06	84.06	1.70	1.52-1.91	<.001
Language spoken at home							
English	4625				1.00		
English & another language	613	.12	.09	1.88	1.13	.95-1.35	.170
Another language	74	-.57	.28	4.26	.57	.33-0.97	.039
Parental status							
Parents living together	3852				1.00		
Separated or divorced	1260	.60	.07	80.05	1.83	1.60-2.08	<.001
One or more parent deceased	64	.93	.26	12.72	2.54	1.52-4.24	<.001
Parents never lived together	46	.89	.31	8.43	2.44	1.34-4.47	.004
Other parental situation	90	.86	.22	15.02	2.36	1.53-3.64	<.001
Mother‟s paid employment							
Full time	2113				1.00		
Part time	1778	-.12	.07	3.35	.88	.77-1.01	.067
Not working	1350	-.05	.07	.49	.95	.82-1.10	.484
Retired	71	.21	.26	.67	1.23	.75-2.04	.413
Father‟s paid employment							
Full time	4265				1.00		
Part time	560	.28	.09	8.99	1.32	1.10-1.59	.003
Not working	379	.15	.11	1.80	1.17	.93-1.46	.180
Retired	108	.09	.21	.19	1.09	.73-1.64	.667

Note. *B*= Unstandardised regression coefficient; *SE*=Standard Error; *OR* = Odds ratio; *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

[†] *p* value is based on a comparison of the appropriate estimate with the “reference” category.

Results of the multivariable analysis adjusting for covariates (level of mental health problems)

To determine whether levels of mental health problems explained the significant associations found between socio-demographic characteristics and perceiving emotional or behavioural problems, a multivariable logistic regression analysis was also conducted adjusting for adolescents‟ scores on the SDQ total difficulties scale, CESD scale and Anxiety scale simultaneously, with results reported in Table 5.4. Analyses were also conducted adjusting for each of these scores individually, with results described in Table B3, Appendix B. When adjusting for each of these scores individually produced results that differed to those produced when they were adjusted for simultaneously, they are commented on in the text.

The model with the eight variables (all socio-demographic characteristics and mental health problems) was statistically significant and able to reliably distinguish between adolescents who did and did not perceive themselves to have emotional or behavioural problems, $\chi^2(16, n=5135)=1471.24$, $p<.001$. The variance explained in the outcome variable (33.7%) and the prediction success (73.9%) of this model were greater than that produced by the model consisting of only socio-demographic characteristics (5.8% and 62.7%, respectively). These results indicate that the addition of terms in levels of mental health problems improved the model substantially.

Adjusting for adolescents‟ SDQ total difficulties score, CESD score and Anxiety score simultaneously did not alter the odds ratio estimate for the association between gender and perceiving emotional or behavioural problems (see Table 5.4). Females were still significantly more likely than males to perceive themselves to have emotional or behavioural problems. There was some variation produced in the odds ratio estimates when

these scores were adjusted for individually; however the main finding was that females were still significantly more likely than males to perceive themselves to have emotional or behavioural problems beyond that explained by their SDQ total difficulties score, CESD score and Anxiety score.

The results indicate that adolescents who spoke predominantly another language at home were less likely to perceive they had experienced emotional or behavioural problems than those who predominantly spoke English at home (see Table 5.2 and Table 5.3). Adjusting for adolescents‟ SDQ total difficulties score, CESD score and Anxiety score increased the strength of this association (produced a further reduction in the odds ratio estimate), i.e., after adjusting for these scores, adolescents who reported they spoke predominantly another language at home were even less likely to perceive they had emotional or behavioural problems than those who spoke predominantly English at home (see Table 5.4). It is likely that adjusting for mental health problems increased the strength of this association because adolescents who spoke predominantly another language at home had higher levels of mental health problems than adolescents who spoke predominantly English at home, but were still less likely to report they had emotional or behavioural problems. Indeed, further analyses revealed that among adolescents who perceived a need for professional help, adolescents who spoke predominantly another language at home had slightly higher levels of mental health problems than adolescents who spoke predominantly English at home, although differences between groups were not significant and this result was based on a small number of adolescents (see Table B4, Appendix B).

Table 5.4

Results for multivariable logistic regression analysis of perceiving emotional or behavioural problems adjusting for adolescents' level of mental health symptoms (SDQ total difficulties score, CESD score and Anxiety score) and all socio-demographic characteristics

Socio-demographic characteristic *n*=5135	*n*	*B*	*SE*	Wald test (z-ratio)	*OR*	*95% CI*	*p* value†
Gender							
Male	2748				1.00		
Female	2387	.55	.07	61.54	1.73	1.51-1.98	<.001
Language spoken at home							
English	4473				1.00		
English & another language	591	.09	.10	.70	1.09	.89-1.34	.403
Another language	71	-.84	.33	6.20	.43	.23-.84	.013
Parental status							
Parents living together	3733				1.00		
Separated/divorced	1214	.42	.08	28.66	1.52	1.30-1.77	<.001
One or more parent deceased	60	.86	.31	7.64	2.37	1.29-4.35	.006
Parents never lived together	43	.76	.37	4.27	2.13	1.04-4.38	.039
Other parental situation	85	.67	.27	6.30	1.95	1.16-3.28	.012
Mother‟s paid employment							
Full time	2051				1.00		
Part time	1724	-.08	.08	.93	.93	.80-1.08	.336
Not working	1293	-.02	.09	.06	.98	.83-1.16	.802
Retired	67	-.03	.31	.01	.97	.53-1.79	.922
Father‟s paid employment							
Full time	4138				1.00		
Part time	537	.06	.11	.29	1.06	.86-1.32	.588
Not working	359	-.20	.13	2.11	.82	.63-1.07	.147
Retired	101	-.10	.24	.17	.91	.56-1.46	.683

Note. B= Unstandardised regression coefficient, *SE*= Standard Error; *OR* = Odds ratio, *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

† *p* value is based on a comparison of the appropriate estimate with the "reference" category.

When adolescents‟ SDQ total difficulties score, CESD score and Anxiety score were adjusted for simultaneously, there was a small reduction in the odds ratio estimate and statistical significance for each parental status category; however, the results were still statistically significant ($p<.05$), indicating the associations persisted beyond that explained by levels of mental health problems (see Table 5.4). Therefore, compared to adolescents with parents who lived together, adolescents from the other parental situations (parents who were separated or divorced, parents had never lived together, parents who were deceased or lived in another unspecified parental situation) were still more likely to perceive they had emotional or behavioural problems.

Earlier analyses (see Table 5.2 and 5.3) indicated that adolescents who reported their fathers were in part time paid employment were significantly more likely to perceive they had emotional or behavioural problems compared to adolescents who reported their fathers were in full time paid employment. This association did not persist when adolescents‟ SDQ total difficulties score, CESD score and Anxiety score were adjusted for simultaneously (see Table 5.4). These results suggest that having fathers in part time paid employment did not explain any variance in adolescents‟ perceptions they had emotional or behavioural problems beyond that explained by their levels of mental health problems.

In summary, these results indicate that perceiving emotional or behavioural problems was more likely among females and among adolescents with parents who were divorced or separated, had one or more parent deceased, had never lived with their parents or had another (unspecified) parental situation, as opposed to those with parents who were living together. The results also indicated that adolescents who reported they spoke another language at home were less likely than those who spoke English at home to perceive they had emotional or behavioural problems. Furthermore, the statistical significance of each of

these associations persisted after adjusting for adolescents‟ levels of mental health problems.

Perceiving emotional or behavioural problems was also more likely among adolescents who reported their fathers were in part time paid employment as opposed to those with fathers in full time paid employment. However, the statistical significance of this association did not persist after taking adolescents‟ levels of mental health problems into account.

Socio-demographic predictors of perceiving more problems than peers

To determine the associations between adolescents‟ socio-demographic characteristics and their perceptions of having more emotional or behavioural problems than their peers, the previous logistic regression analyses were replicated with the outcome variable "perceiving more problems than peers".

Results of univariate logistic regression analyses

The odds ratio estimates (see Table 5.5) confirmed that females were more likely than males (*OR* = 1.25) to perceive they had more problems than their peers. Furthermore, adolescents who spoke predominantly another language at home did not differ significantly in the likelihood they perceived more problems than peers from adolescents who spoke only English at home. Conversely, adolescents who reported they spoke English and another language at home were more likely (*OR*= 1.29) to perceive themselves to have more problems than their peers than those who spoke only English at home.

Table 5.5

Results of univariate (unadjusted) logistic regression analyses of perceiving more problems than peers, with socio-demographic characteristics as predictors

Socio-demographic characteristics	*n*	*B*	*SE*	*OR*	*95% CI*	*p* value[†]
Gender						
Male	860			1.00		
Female	1351	.21	.09	1.24	1.04-1.47	.015
Language spoken at home						
English	1909			1.00		
English & another language	247	.26	.13	1.29	1.00-1.67	.047
Another language	20	.62	.46	1.86	.76-4.56	.177
Parental status						
Parents living together	1356			1.00		
Separated or divorced	694	.34	.09	1.40	1.17-1.69	<.001
One or more parent deceased	58	.59	.27	1.81	1.06-3.08	.029
Parents never lived together	35	.26	.34	1.29	.66-2.53	.451
Other parental situation	59	.21	.27	1.24	.73-2.09	.423
Mother‟s paid employment						
Full time	874			1.00		
Part time	686	-.20	.10	.82	.67-1.00	.048
Not working	580	-.12	.11	.89	.72-1.10	.271
Retired	35	.15	.35	1.17	.59-2.29	.657
Father‟s paid employment						
Full time	1623			1.00		
Part time	268	.35	.13	1.41	1.09-1.83	.009
Not working	179	.28	.16	1.32	.97-1.79	.081
Retired	50	.37	.29	1.44	.82-2.53	.202

Note. B= Unstandardised regression coefficient; *SE*=Standard Error; *OR* = Odds ratio, *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

[†] *p* value is based on a comparison of the appropriate estimate with the “reference” category.

Compared to adolescents with parents still living together, adolescents with one or more parent(s) deceased were considerably more likely (*OR* = 1.81) to perceive themselves to have more problems than their peers and adolescents with parents who were separated or divorced were more likely (*OR*=1.40) to perceive themselves to have more problems than their peers. Adolescents with mothers in part time paid employment were significantly less likely (*OR*=0.82) to perceive they had more problems than their peers, compared to those with mothers in full time paid employment. Adolescents with fathers in part time paid employment were significantly more likely (*OR*=1.41) to perceive they had more problems than their peers, compared to those with fathers in full time paid employment.

Results of the multivariable analysis

To investigate the unique contribution of each of the socio-demographic variables in explaining the variance of the outcome variable adjusting for the effects of each other, they were entered simultaneously into a multivariable logistic regression analysis (Table 5.6). The results of the multivariable logistic regression analysis did not greatly differ from that found with the univariate (unadjusted) logistic regression analyses, indicating the socio-demographic characteristics explained little common variance in the outcome variable.

Table 5.6

Multivariable logistic regression analysis of "perceiving more problems than peers" with socio-demographic characteristics as predictors

Socio-demographic characteristics *n*=2089	*n*	*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	*p value*[†]
Gender							
Male	1277				1.00		
Female	812	.24	.09	6.64	1.27	1.06-1.52	.010
Language spoken at home							
English	1815				1.00		
English & another language	255	.27	.14	3.90	1.31	1.04-1.71	.048
Another language	19	.58	.47	1.54	1.79	.71-4.52	.215
Parental status							
Parents living together	1339				1.00		
Separated or divorced	632	.31	.10	9.47	1.36	1.12-1.65	.002
One or more parent deceased	38	.39	.34	1.39	1.48	.77-2.86	.239
Parents never lived together	28	.11	.39	.09	1.12	.52-2.40	.770
Other parental situation	52	.13	.29	.21	1.14	.65-2.01	.651
Mother"s paid employment							
Full time	838				1.00		
Part time	668	-.23	.11	4.80	.79	.64-0.98	.028
Not working	550	-.18	.11	2.38	.84	.67-1.05	.123
Retired	33	.02	.38	.004	1.02	.49-2.14	.952
Father"s paid employment							
Full time	1604				1.00		
Part time	262	.35	.14	6.57	1.33	1.09-1.86	.010
Not working	177	.22	.17	1.85	1.24	.91-1.73	.174
Retired	46	.34	.32	1.17	1.41	.76-2.63	.279

Note. B=Unstandardised regression coefficient; *SE*=Standard error; *OR* = Odds ratio; *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

[†] *p* value is based on a comparison of the appropriate estimate with the "reference" category.

Results of the multivariable analysis adjusting for covariates (level of mental health problems)

To determine whether levels of mental health problems explained the associations found between socio-demographic categories and adolescents" perceptions that they had more problems than their peers, a multivariable logistic regression analysis was conducted adjusting for adolescents scores on the SDQ total difficulties scale, CESD scale and Anxiety scale simultaneously (see Table 5.7). Analyses were also conducted adjusting for each of these scores individually, with results described in Table B5, Appendix B. When adjusting for each of these scores individually produced results that differed to those produced when they were adjusted for simultaneously, they are commented on in the text.

The model consisting of the eight predictor variables (all socio-demographic characteristics and mental health problems) was significant and was able to reliably distinguish between adolescents who perceived more problems than peers and those who perceived they had emotional and behavioural problems, but not more than their peers, χ^2 (16, n=2022) = 299.44 p<.001. Prediction success was 66.1%, an improvement on the null model (55.5%) and also the model consisting of only socio-demographic characteristics (57.7%). Variance explained in the outcome variable was 18.4% and exceeded that of the model consisting of only socio-demographic characteristics (2.4%).

Table 5.7

Results for logistic regression analyses of perceiving more problems than peers with socio-demographic characteristics as predictor (controlled for all socio-demographics and mental health symptoms)

Socio-demographic characteristics *n*=2022	*n*	*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	*p* value[†]
Gender							
Male	1244				1.00		
Female	778	.18	.10	3.06	1.20	.98-1.47	.080
Language spoken at home							
English	1762				1.00		
English & another language	243	.32	.15	4.63	1.38	1.02-1.84	.031
Another language	17	.28	.53	.28	1.32	.47-3.70	.598
Parental status							
Parents living together	1300				1.00		
Separated or divorced	610	.25	.11	5.42	1.29	1.04-1.59	.020
One or more parent deceased	35	.34	.38	.80	1.40	.67-2.93	.372
Parents never lived together	28	.16	.42	.15	1.17	.52-2.65	.701
Other parental situation	49	.03	.33	.01	1.03	.54-1.95	.937
Mother‟s paid employment							
Full time	810				1.00		
Part time	652	-.22	.12	3.73	.80	.64-1.00	.054
Not working	529	-.23	.13	3.36	.80	.62-1.02	.067
Retired	31	-.28	.42	.44	.76	.33-1.72	.508
Father‟s paid employment							
Full time	1560				1.00		
Part time	255	.23	.15	2.45	1.26	.94-1.69	.117
Not working	165	.13	.18	.48	1.13	.79-1.62	.490
Retired	42	.33	.36	.84	1.39	.69-2.79	.360

Note. *B*=Unstandardised regression coefficient; *SE*=Standard Error; *OR* = Odds ratio; *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

[†] *p* value is based on a comparison of the appropriate estimate with the “reference” category.

As is evident from Table 5.7, adjustment for adolescents‟ levels of mental health problems (adolescents‟ SDQ total difficulties score, CESD score and Anxiety score simultaneously) only slightly altered the odds ratio estimate for the association between being female and perceiving more problems than peers. However, the *p*-value was reduced to a non-significant level ($p>.05$). Analyses adjusting for each of these scores individually indicated the reduction in the significance of the association was driven by adjusting for the CESD score and Anxiety score (see Table B5, Appendix B). These results indicate that the gender difference observed in perceiving more emotional or behavioural problems than peers may be explained in terms of adolescents‟ levels of depression and anxiety.

Results of previous analyses (see Tables 5.5 and 5.6) indicated that adolescents who spoke both English and another language at home were more likely to perceive they had more problems than their peers, compared to adolescents who spoke only English at home. Simultaneously adjusting for adolescents‟ SDQ total difficulties score, CESD score and Anxiety score slightly increased the strength (odds ratio) of this association. However, analyses adjusting for each of these scores individually indicated that adjusting for adolescents‟ anxiety score reduced the odds ratio estimate and the significance of the association such that it was no longer statistically significant (see Table B5, Appendix B). Therefore, adolescents who spoke both English and another language at home may have been more likely than those who spoke only English at home to perceive themselves to have more problems than their peers, because they also had higher levels of anxiety.

Results of previous analyses (see Tables 5.5 and 5.6) also indicated that adolescents with parents who were separated or divorced were more likely to perceive they had more problems than peers, compared to adolescents with parents still living together. When levels of mental health problems (SDQ total difficulties score, CESD score and Anxiety

score) were adjusted for simultaneously, the odds ratio estimate was slightly reduced. Further analyses revealed that adjusting for the scores individually also produced only a small change in odds ratio estimate and the significance was not altered. Therefore, these results indicate that the association between having parents who were separated or divorced and perceiving more problems than peers persisted beyond that explained by adolescents‟ levels of mental health symptoms.

Simultaneously adjusting for adolescents‟ levels of mental health problems (SDQ total difficulties score, CESD score and Anxiety score) did not affect the strength of the association between having mothers in part time paid employment and perceiving more problems than peers, but reduced the significance of the result such that it was no longer statistically significant (p>.05). Adolescents with mothers in part time paid employment may have been less likely to perceive themselves to have more emotional or behavioural problems than their peers, as they also had lower levels of mental health problems.

Adolescents with fathers in part time paid employment were more likely to perceive they had more problems than peers, compared to those with fathers in full time paid employment (see Table 5.5 and Table 5.6). Simultaneously adjusting for adolescents‟ levels of mental health symptoms reduced the odds ratio estimate and the significance of the result such that it was no longer statistically significant (see Table 5.7). These results suggest that adolescents with fathers in part time paid employment may have been more likely to perceive they had more problems than their peers because they had higher levels of mental health problems.

In summary, these results indicate that perceiving more problems than peers was more likely among adolescents with parents who were separated or divorced (compared to those with parents living together), females (compared to males), adolescents who spoke

predominantly English and another language at home (compared to those who spoke just English), and adolescents with fathers who were employed in part time paid employment (compared to those with fathers in full time paid employment). Perceiving more problems than peers was less likely among adolescents with mothers who were in part time paid employment (as opposed to those with mothers who were in full time paid employment). The results indicate that these socio-demographic characteristics explained little common variance in perceiving more problems than peers. However, only the association between having parents who were separated or divorced (compared to those with parents living together) and perceiving more problems than peers persisted after adjusting for adolescents‟ levels of mental health problems (either simultaneously or individually).

Discussion

Gender

The results of this chapter indicate that there was a gender difference in problem recognition, offering support for Hypothesis 5.1. Not only were females were more likely than males to perceive themselves to have emotional or behavioural problems, they were also more likely to perceive they had more of these problems than their peers. These results are consistent with the findings of studies conducted by Saunders et al. (1994) and Sears (2004) that indicated female adolescents were more likely than males to report they had mental health, emotional, behavioural and physical problems. They are also consistent with findings of Zwaanswijk, Van der Ende et al. (2003) that indicated female adolescents were significantly more likely than males to perceive themselves as having worse mental health problems than their peers.

In this study, the association between gender and perceiving emotional or behavioural problems persisted after individually adjusting for adolescents‟ levels of depression and

anxiety; however, the association between gender and perceiving more problems than peers did not (see Table B5, Appendix B). This latter result suggests that females may have been more likely than males to perceive themselves to have *more* problems than peers, because they had actually higher levels of depression and anxiety than males. However, female adolescents were more likely than males to perceive they had emotional or behavioural problems, beyond that explained by their levels of mental health problems.

It is possible that female adolescents are more likely than males to perceive themselves to have emotional or behavioural problems because they are better than males at identifying symptoms of distress as an emotional or behavioural problem and are also more comfortable than males with reporting such problems. For example, the results of a study conducted by Ciarocchi et al. (2003) found that females had higher levels of emotional competence than males. Thus, it is possible that adolescent females may be better than males at identifying symptoms of distress as emotional or behavioural problems because they have higher levels of emotional competence than males. It is also possible that females are better than males at identifying symptoms of distress as an emotional or behavioural problem as they have a better knowledge of such problems (Cotton et al., 2006). Cotton et al. (2006) found among a sample of young Australians aged 12 to 25 years that male adolescents showed significantly lower recognition of depressive symptoms than females; however, there was no gender difference in recognition of symptoms of psychosis (schizophrenia) and recognition of either mental health illness was low overall.

The gender difference in perceiving emotional or behavioural problems found in this study may also be attributable to adolescents conforming to social norms and gender roles/stereotypes from family, friends and media (Cauce et al., 2003). For example, acknowledging the existence of emotional or behavioural problems may be considered a

dependent and interpersonal behaviour that is more characteristic of females. Therefore, adolescents (of both genders) may feel it is more acceptable for females to acknowledge the existence of emotional or behavioural problems and, consequently, females may feel more comfortable reporting problems than males (Archer, 1996).

Language spoken at home

The results of this chapter suggest that the differences in help-seeking behaviour associated with the language that adolescents predominantly spoke at home are evident in the initial help-seeking stage of problem recognition. Adolescents who spoke another language at home were found to be less likely to perceive they had emotional or behavioural problems compared to those who spoke predominantly English at home, beyond that explained by their levels of mental health problems. Although this result was based on a small proportion of adolescents, they offer some support for Hypothesis 5.2, i.e., that adolescents from a non-English speaking background will be less likely to report they have emotional or behavioural problems than those from an English speaking background. Moreover, it is consistent with the way that Cauce et al. (2003) conceptualised the relationship between culture and ethnicity and help-seeking behaviour, i.e., that culture influenced all stages of help-seeking, including the recognition and acknowledgement of problems.

Adolescents from non-English speaking backgrounds may have difficulty interpreting mental health symptoms as emotional or behavioural problems due to cultural barriers and also language differences. For example, adolescents from a non-English speak background may not be familiar with the terms used to describe emotional or behavioural problems and they also may have difficulty articulating their feelings to others due to language difficulties. Furthermore, while it is difficult to interpret these results without knowing the specific ethnic origin of adolescents in this study, it may be that some ethnic minority

cultures in Australia are more accepting of psychological symptoms as normal behaviour and therefore these adolescents do not perceive they have emotional or behavioural problems (Cauce et al., 2002). In addition, some cultures may advocate dealing with problems alone and, therefore, adolescents may be reluctant to acknowledge the existence of emotional or behavioural problems as they fear they will be perceived as vulnerable.

In contrast to these adolescents who spoke predominantly another language at home, adolescents who spoke both English and another language at home did not differ significantly in their likelihood of perceiving emotional or behavioural problems from adolescents who spoke only English at home, although this result was also based on a relatively small proportion of the total sample. It is possible adolescents who spoke another language at home may have had a stronger ethnic influence and/or encountered more language and cultural barriers to acknowledging they had emotional or behavioural problems than adolescents who spoke both English and another language, which may explain why no association was found with this latter group.

The results also indicated that once adolescents had attained the initial stage of perceiving emotional or behavioural problems, adolescents who spoke both English and another language at home were more likely to perceive they had more problems than their peers, compared to adolescents who spoke only English at home. However, the results also indicated that levels of anxiety may explain this relationship as the association did not persist after accounting for adolescents‟ levels of anxiety. Thus, overall, the results suggest that the influence of speaking another language at home was primarily in the initial perception of having emotional or behavioural problems.

Parental status

The results of this chapter supported Hypothesis 5.3 and indicated that, compared to adolescents with parents who lived together, adolescents with parents who were not living together (i.e., had parents who were separated or divorced, had never lived together, one or more was deceased or an unspecified parental situation) were more likely to perceive they had emotional or behavioural problems. Furthermore, compared to adolescents with parents who lived together, those with parents who were separated or divorced were more likely to perceive they had more emotional or behavioural problems than their peers. The statistical significance and strength of these associations were largely maintained after adjusting for adolescents‟ levels of mental health problems, indicating they were not completely explained by levels of mental health problems.

While the present study assessed parental status and problem recognition slightly differently to previous studies, the results of this chapter were consistent with the results of these previous studies (Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). For example, Sears (2004) found that adolescents who were living with someone other than a parent were more likely to report they had serious emotional, behavioural and physical problems compared to those in either a one or two parent family. Zwaanswijk, Van der Ende et al. (2003) also found that adolescents from a one-parent family and those who had experienced a change in family composition were significantly more likely to report they had mental health problems that were worse than their peers than those from a two-parent family and those who had not experienced a change in family composition. Zwaanswijk, Van der Ende et al. also found this association persisted beyond that explained by other variables, including adolescents‟ levels of mental health problems (YSR; Achenbach, 1991b).

Adolescents with parents not living together may recognise they are at risk of having emotional or behavioural problems due to their parental situation and may therefore have an increased sensitivity to perceiving they have emotional or behavioural problems. They may also feel more comfortable reporting they have emotional or behavioural problems than other adolescents as their family situation may provide an external justification or cause for the emotional or behavioural problems they experience. It is also possible that these adolescents consider their actual family situation an emotional problem, particularly if their parents separated or divorced or died recently.

In the present sample, 70% of adolescents reported their parents lived together. Therefore, it is possible that adolescents with parents who were separated or divorced perceived themselves to have more problems than their peers as they compared themselves to the majority of adolescents and the majority of adolescents had parents who lived together. It is likely that adolescents with parents who were divorced or separated may perceive that other adolescents with parents who live together are not experiencing the same levels of family problems or upheaval in their lives and they therefore perceive themselves to have more emotional or behavioural problems than their peers.

Parental paid employment

The results of this chapter provided little support for Hypothesis 5.4. The significant associations found between parents‟ paid employment status categories and problem recognition did not persist beyond that explained by levels of mental health problems. For example, adolescents with fathers in part time paid employment were found to be more likely than those with fathers in full time paid employment to perceive they had emotional or behavioural problems and more problems than peers, which supports Hypothesis 5.4. However, the statistical significance of this association did not persist after adjusting for

adolescents‟ levels of mental health problems. These results indicate that the adolescents with fathers in part time paid employment may have been more likely to perceive they had emotional or behavioural problems and more problems than peers because they experienced a higher level of mental health problems than those with fathers in full time paid employment. This result is consistent with the results of a study conducted by Sawyer et al. (2007) that suggest adolescents with mental health problems at a clinical level were more likely to be from a family with a lower household income than those with problems not at a clinical level.

Adolescents with mothers in part Time paid employment were significantly less likely than those with mothers in paid full time employment to perceive they had more emotional or behavioural problems than their peers. This finding contrasted the direction of the association hypothesised by Hypothesis 5.4. However, as mentioned, the significance of this association did not persist after adjusting for adolescents‟ levels of depression (CESD score). These results suggest that adolescents with mothers in part time paid employment may have been less likely than those with mothers in full time paid employment to perceive they had more problems than their peers because they experienced a lower level of depression symptoms.

It is possible that paid employment status affects the time that mothers had available to spend with adolescents. While parental roles in current times are diverse, results of previous studies have suggested that mothers are more likely to have a greater involvement with their adolescents‟ lives and well-being than fathers and are also more likely to be perceived by adolescents to have more of a caring role than fathers (Pedersen, 1994; Richardson, Galambos, Schulenberg, & Petersen, 1984). Therefore, it is possible that mothers who worked in full time paid employment have less time to spend with

adolescents and this may have had an adverse effect on adolescents, resulting in higher levels of depression among these adolescents. However, this explanation is only speculative as the evidence that maternal employment has negative consequences for adolescents is inconsistent (Ruhm, 2008).

Summary

Overall, the associations between adolescents‟ socio-demographic characteristics and their perceptions they had more problems than their peers were not as pronounced as those found with their perceptions that they had emotional or behavioural problems. This is likely due to the different composition of adolescents in each of these levels of problem recognition and the number of adolescents in each level. Adolescents‟ perceptions they had emotional or behavioural problems were examined among the full sample and thus adolescents who perceived emotional or behavioural problems were contrasted with those who had not perceived problems. Adolescents‟ perceptions that they had more problems than their peers were examined only among those who perceived they had emotional or behavioural problems. Therefore, adolescents who perceived more problems than their peers were contrasted with those who perceived they had comparable problems to peers. Because both of these groups of adolescents had already attained the initial stage of problem recognition, they were likely to be similar and, therefore, the differences in the socio-demographic characteristics between these two groups may not have been as marked. Furthermore, the significant associations found between socio-demographic characteristics and adolescents‟ perceptions they had more problems than peers were already "filtered out" in earlier analyses.

Finally, it is notable that the full models that consisted of adolescents‟ mental health problems in addition to their socio-demographic characteristics explained substantially

more variance in the outcome variable and had a greater prediction success than the models consisting only of socio-demographic characteristics. These results confirm that adolescents‟ levels of mental health problems are strongly related to problem recognition (as found in Chapter 4). However, given that many of the relationships between gender, language spoken at home and parental status and perceiving emotional or behavioural problems persisted beyond that accounted for by adolescents‟ levels of mental health symptoms, these results also highlight the important role that socio-demographic characteristics have in adolescents‟ problem recognition.

Subsidiary Analyses

As a final step in investigating the relationships that these key variables had with problem recognition, further exploratory analyses were conducted with all variables from Chapters 4 and 5 to determine a minimal set of variables that explained each outcome variable.

Perceiving emotional or behavioural problems

Table 5.8 reports the results of the forward selection stepwise logistic regression analysis of the outcome variable "perceiving emotional or behavioural problems" and Table 5.9 reports the results of the backwards selection stepwise logistic regression analysis. Only variables that were not removed in the stepwise regression procedure are shown in Tables 5.8 and 5.9.

For the outcome variable "perceiving emotional or behavioural problems" both forwards and backwards logistic regression analyses selected the same set of predictor variables with the exception of language spoken at home, which was included by the backwards procedure only. Both models were statistically significant and explained approximately the same proportion of variance (36% for forward selection and 37% for backwards selection) in the outcome variable and both had a prediction success of 74.8%.

The factors that each model selected were generally those that had emerged as having the strongest associations with perceiving emotional or behavioural problems from Chapters 4 and 5, with the addition of some of the psychosocial subscale scores. Both models identified the SDQ total difficulties score and the CESD score as significantly increasing the likelihood that adolescents perceived themselves to have emotional or behavioural problems. However, the Anxiety score was not included, which is likely due to its correlation with the SDQ score and the CESD score, consistent with results of Chapter 4.

Table 5.8

Stepwise logistic regression analyses (forwards selection) of the outcome variable "perceiving emotional or behavioural problems"

n=4813	*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	*p* value
CESD	.73	.05	185.98	2.07	1.87-2.30	<.001
SDQ-TOT	.60	.05	131.50	1.83	1.65-2.03	<.001
Family relationships	-.33	.05	43.17	.72	.65-.79	<.001
Providing emotional support	.26	.05	28.00	1.30	1.18-1.43	<.001
Significant other relationships	.24	.05	20.82	1.27	1.14-1.40	<.001
Conflict resolution	-.21	.05	19.80	.81	.74-.89	<.001
Asserting influence	-.09	.04	4.44	1.09	1.01-1.19	.035
Parental status						
Parents living together				1.00		
Separated or divorced	.39	.08	22.72	1.48	1.26-1.73	<.001
One or more parent deceased	.74	.32	5.29	2.09	1.12-3.90	.021
Parents never lived together	.55	.38	2.12	1.74	.93-3.67	.146
Another parental situation	.77	.28	7.53	2.17	1.25-3.76	.006
Gender						
Male				1.00		
Female	.30	.08	14.25	1.35	1.16-1.58	<.001

Note. The model was statistically significant, χ^2 (12, *n* =4813) = 1506.5, *p*<.001.
B=Unstandardised Regression coefficient; *SE*=Standard Error; *OR* = Odds ratio; *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

Table 5.9

Stepwise logistic regression analyses (backwards selection) of the outcome variable "perceiving emotional or behavioural problems"

n=4813	*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	*p* value
CESD	.73	.05	185.42	2.07	1.86-2.30	<.001
SDQ-TOT	.60	.05	130.51	1.82	1.65-2.02	<.001
Family relationships	-.33	.05	42.60	.72	.65-.79	<.001
Providing Emotional Support	.26	.05	27.88	1.30	1.18-1.43	<.001
Significant other relationships	.23	.05	20.12	1.26	1.13-1.40	<.001
Conflict resolution	-.21	.05	19.81	.81	.74-.89	<.001
Asserting influence	.09	.04	3.79	1.09	1.00-1.19	.052
Parental status						
Parents living together				1.00		
Separated or divorced	.39	.08	22.41	1.47	1.25-1.73	<.001
One or more parent deceased	.73	.32	5.16	2.07	1.11-3.86	.023
Parents never lived together	.56	.38	2.17	1.75	.84-3.69	.140
Another parental situation	.80	.28	8.00	2.23	1.28-3.89	.005
Gender						
Male				1.00		
Female	.30	.08	14.01	1.35	1.15-1.57	<.001
Language spoken at home						
English				1.00		
English and another language	.11	.11	.99	1.11	.90-1.38	.319
Another language	-.72	.36	3.98	.48	.24-.99	.046

Note. The model was statistically significant, χ^2 (14, *n* =4813) = 1511.6, *p*<.001.

B=Regression coefficient, *SE*= Standard Error; *OR* = Odds ratio, *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

Consistent with the earlier results of this chapter, females were found to be significantly more likely than males to perceive they had emotional or behavioural problems. Furthermore, adolescents with parents who were separated or divorced, with one or more parents deceased or with another (unspecified) parental situation were more likely than those with parents living together to perceive they had emotional or behavioural problems. Speaking another language at home as opposed to speaking English at home was only selected in the backwards procedure.

Both procedures also identified the Social Support subscale scores and some of the Interpersonal skills subscale scores (Providing Emotional Support, Asserting Influence and Conflict Resolution); however, neither procedure identified the Constructive Problem Solving score. Adolescents with higher scores on the Conflict Resolution subscale (Interpersonal Skills) and those with higher scores on the Family Support subscale were less likely to report they had emotional or behavioural problems. These results were somewhat consistent with Chapter 4, which found adolescents‟ levels of interpersonal skills and social support were indeed lower among adolescents who perceived themselves to have emotional or behavioural problems.

In contrast to the previous findings of Chapter 4, adolescents with higher scores on the Providing Emotional Support subscale were found to be more likely to report they had emotional or behavioural problems, as were those with higher scores on the Significant Other subscale. This was likely due to the adjustment made for the other variables in the model. Further analyses conducted with the Significant Other subscale score as a predictor, adjusting for each of the variables from Table 5.8 and 5.9 separately, indicated that this was largely due to adjusting for the Family subscale score. Further analyses conducted with the Providing Emotional Support subscale score as a predictor, adjusting for each of the

variables from Table 5.8 and 5.9 separately, indicated that this was largely due to a combination of adjusting for each of the variables in the models.

Perceiving more problems than peers

These analyses were replicated for the outcome variable "perceiving more problems than peers". Table 5.10 reports the results of the forward selection logistic regression analysis of perceiving more problems than peers and Table 5.11 reports the results of the backwards selection logistic regression analysis. Only variables that were not removed in the stepwise regression procedure are reported.

Table 5.10

Stepwise logistic regression analyses (forwards selection) of the outcome variable "perceiving more emotional or behavioural problems than peers"

n=1897	*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	*p* value
CESD score	.51	.06	70.45	1.66	1.48-1.87	<.001
SDQ total difficulties score	.37	.07	28.42	1.45	1.27-1.66	<.001
Providing emotional support	.14	.05	7.79	1.15	1.04-1.27	<.005

Note. Model was statistically significant, χ^2 (3, *n* =1897) = 274.3; *B*=Unstandardised regression coefficient; *SE*=Standard Error; *OR* = Odds ratio; *CI* = Confidence Interval.

For the outcome variable "perceiving more problems than peers", forwards and backwards logistic regression analyses selected only two of the same variables as significantly increasing the likelihood that adolescents perceived themselves to have more problems than their peers. Despite these differences, both models were statistically significant and explained approximately the same amount of variance (18% for forward selection and 19% for backwards selection) in the outcome variable and both had a prediction success of 67%.

Table 5.11

Stepwise logistic regression analyses (backwards selection) of the outcome variable, perceiving more emotional or behavioural problems than peers

n=2089	*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	*p* value
CESD score	.48	.06	60.84	1.62	1.44-1.83	<.001
SDQ total difficulties score	.37	.07	27.80	1.45	1.26-1.66	<.001
Friend relationships	-.17	.06	7.13	.84	.74-.96	.008
Family relationships	-.14	.06	5.00	.87	.77-.98	.025
Constructive problem solving	.13	.06	4.35	1.13	1.01-1.28	.037
Initiating relationships	.11	.05	4.10	1.11	1.00-1.23	.043
Significant other relationships	.13	.07	3.10	1.14	.99-1.31	.078
Gender						
Male				1.00		
Female	.23	.11	4.19	1.26	1.01-1.58	.041

Note. The model was statistically significant, χ^2 (8, *N* =1897) = 290.13; *B*=Unstandardised regression coefficient; *SE*=Standard Error; *OR* = Odds ratio; *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

Both models identified the SDQ total difficulties score and the CESD score as significantly increasing the likelihood adolescents perceived themselves to have more problems than their peers. The forwards selection model also selected the Providing Emotional Support subscale, although the strength of the association was quite weak. Furthermore, it did not select any socio-demographic characteristics or any other psychosocial scales or subscales. Consistent with previous results of Chapter 4, adolescents with higher scores on the SDQ total difficulties scale and the CESD scale were more likely to perceive themselves to have more problems than their peers. Furthermore, adolescents who were more proficient at

providing emotional support to others were slightly more likely to perceive themselves to have more problems than their peers.

In addition to the CESD score and the SDQ total difficulties score, the backwards selection model selected gender (being female) and all of the Social Support subscales (Significant Other, Friend and Family), although the association with the Significant Other subscale score was not statistically significant. Furthermore, the strength of the associations with the Friend and Family subscale scores was quite weak. The backwards procedure also identified the Initiating Relationships and Constructive Problem Solving score; however, the strength of these associations was also quite weak.

Anxiety was not identified by either procedure, which is likely due to its shared variance with the SDQ and CESD scores. Furthermore, language spoken at home, parental status, father"s paid employment status and mother"s paid employment status were not identified by either of the procedures. These results were somewhat consistent with the results of this chapter, as many of the significant associations found between categories of the socio-demographic characteristics and perceiving more problems than peers did not persist after adjusting for adolescents" levels of mental health problems.

Overall summary of the factors associated with problem recognition

Overall, adolescents" scores on the SDQ total difficulties scale, the CESD scale and the anxiety scale each had a strong significant association with problem recognition that was not explained by psychosocial variables. Furthermore, experiencing any type of mental health problems, whether internalising or externalising in nature, increased the likelihood that adolescents perceived themselves to have emotional or behavioural problems or more of these problems than their peers. However, adolescents" levels of internalising problems

(Emotional Symptoms subscale) explained slightly more of the variance in adolescents‟ perceptions they had emotional or behavioural problems and more problems than their peers than their levels of externalising problems (Conduct Problems, Hyperactivity and Peer Problems).

Adjusting for psychosocial variables had little effect on the strength and significance of the associations between adolescents‟ levels of mental health problems and problem recognition. Social Support subscales and Interpersonal Skills subscales were identified as significantly associated with perceiving emotional or behavioural problems by the subsidiary analyses. While some of the Social Support and Interpersonal Skills subscales and the Constructive Problem Solving scale were identified as significantly associated with perceiving more problems than peers, the strength of most of these associations was weak.

Socio-demographic characteristics were also found to have significant associations with problem recognition beyond that explained by their levels of mental health symptoms. Specifically, being of a female gender, speaking predominantly another language at home or having a range of different parental situations (other than having parents who lived together) were significantly associated with perceiving emotional or behavioural problems beyond that accounted for by adolescents‟ levels of mental health symptoms. Having parents who were separated or divorced was significantly associated with perceiving more problems than peers beyond that accounted for by adolescents‟ levels of mental health symptoms.

CHAPTER 6: THE RELATONSHIP BETWEEN ADOLESCENTS' LEVELS OF MENTAL HEALTH PROBLEMS AND PERCEIVING A NEED FOR PROFESSIONAL HELP

Introduction

This chapter focuses on the second stage of help-seeking, perceiving a need for professional help, and, specifically, the relationships between adolescents‟ levels of mental health problems and perceiving a need for professional help. The results of previous overseas studies suggest that higher levels of suicidal ideation, depressive symptoms and anxiety symptoms were related to an increased likelihood that adolescents perceive a need for professional help among those who perceive themselves to have emotional, behavioural, mental health and/or physical problems (Saunders et al., 1994; Sears, 2004). As mentioned in Chapter 4, the results of studies conducted by Zwaanswijk, Van der Ende et al. (2003) and Sears (2004) suggest that different types of mental health problems may be more strongly related to different stages of help-seeking. Specifically, Sears (2004) found that adolescents who did or did not perceive a need for professional help differed more on markers of emotional adjustment (internalising problems) than on markers of behavioural adjustment (externalising problems). These results suggest that levels of internalising problems may be more strongly associated with perceiving a need for professional help than levels of externalising problems.

This chapter examines the relationship between levels of mental health problems and perceiving a need for professional help among adolescents living in Australia who had attained the first stage of help-seeking, namely, problem recognition. The relationships between levels of mental health problems and perceiving a need for professional help are examined among adolescents in the Comparable Problems group (perceived they had

emotional or behavioural problems but not more than their peers) and among those in the More Problems group (perceived they had more emotional or behavioural problems than their peers). These problem recognition groups are mutually exclusive.

Models of help-seeking behaviour have also noted the importance of psychosocial variables in facilitating or hindering adolescents‟ help seeking for mental health problems (Andersen, 1995; Andersen & Newman, 1973; Rickwood et al., 2005; Srebnik et al., 1996). This chapter investigates the possibility that the associations found between adolescents‟ levels of mental health problems and perceiving a need for professional help are explained by their levels of psychosocial functioning.

Hypotheses

Consistent with the results of studies conducted by Sears (2004) and Saunders et al. (1994), it is hypothesised that:

Adolescents with higher scores on the SDQ total difficulties scale, the CESD scale and the Anxiety scale will be more likely to perceive a need for professional help (Hypothesis 6.1).

Recalling that the SDQ is comprised of five individual subscales, one of which assesses internalising problems (emotional symptoms) and three of which assess externalising problems (conduct problems, peer problems and hyperactivity), consistent with results of the study conducted by Sears (2004), it is also hypothesised that:

Adolescents with higher levels of internalising (emotional) symptoms will be more likely than those with higher levels of externalising symptoms (conduct problems, peer problems and hyperactivity) to perceive a need for professional help with their problems (Hypothesis 6.2).

It is possible that levels of psychosocial functioning (i.e., Social Support, Interpersonal Skills and Constructive Problem Solving) and levels of mental health problems may explain some common variance in adolescents‟ help-seeking behaviour. Therefore, the associations specified in Hypothesis 4.1 will be examined adjusting for the effects of psychosocial variables.

The proportion of adolescents who perceived a need for professional help

Table 6.1 reports the proportions of adolescents who perceived a need for professional help (for their emotional or behavioural problems) among adolescents in the More Problems and Comparable Problems groups. Not surprisingly, a significantly greater proportion of adolescents perceived a need for professional help among adolescents in the More Problems group, compared to adolescents in the Comparable Problems group, $\chi^2(1)=207.2$, $p<.001$.

Table 6.1

The percentage of adolescents who perceived a need for professional help for their emotional or behavioural problems

Problem Recognition group	*n*	Perceived a need for professional help
Comparable Problems[a]	1204	9.2%
More Problems[b]	1002	34.2%

[a] Perceived themselves to have emotional or behavioural problems, but not more than their peers.

[b] Perceived themselves to have more emotional or behavioural problems than their peers.

Chapter structure

The structure of this chapter is similar to Chapter 4. First, adolescents who did and did not perceive a need for professional help were compared on their mean scores for the SDQ total difficulties scale and subscales, the CESD scale, the Anxiety scale and the psychosocial scales and subscales. These comparisons were made among the two respective problem recognition groups (More Problems group and Comparable Problems group). A series of independent samples t-tests were also conducted to determine whether there were statistically significant differences between the mean scores of adolescents who did and did not perceive a need for professional help. These analyses guided which variables were included for further investigation in the logistic regression analyses.

A series of univariate and multivariable logistic regression analyses were then performed to further investigate the relationships between these variables and perceiving a need for professional help. These analyses tested the significance of the associations between adolescents‟ scores on the SDQ total difficulties scale, CESD scale and Anxiety scale and perceiving a need for professional help and determined whether the statistical significance and magnitude of these associations were maintained after adjusting for adolescents‟ scores on the Social Support subscales, Constructive Problem Solving scale and Interpersonal Skills subscales. These analyses also determined whether some types of mental health symptoms (e.g., internalising versus externalising) were more strongly associated with perceiving a need for professional help.

Results of independent samples t-tests

SDQ total difficulties scale and subscales, CESD scale and Anxiety scale

Table 6.2 reports, among adolescents in the Comparable Problems group, the mean scores and standard deviations for the CESD scale, Anxiety scale, SDQ total difficulties scale and SDQ subscales for adolescents who did and did not perceive a need for professional help. For each scale and subscale in Table 6.2, adolescents who perceived a need for professional help had significantly higher mean scores than those who did not perceive a need for professional help, with the exception of the positively worded Prosocial Behaviour scale. For the Prosocial Behaviour subscale, adolescents who perceived a need for professional help had a lower mean Prosocial Behaviour score than those who did not.

A series of t-tests revealed that there were statistically significant differences between the mean scores of adolescents who did and did not perceive a need for professional help for all scales and subscales, with the exception of the Prosocial Behaviour subscale. Effect sizes are not reported with these results, as the quantitative information about the relationship between these scales and perceiving a need for professional help is available from the logistic regression analyses reported further in this chapter.

Table 6.2

Mean (SD) scores of adolescents who did and did not perceive a need for professional help for the CESD scale, Anxiety scale, SDQ total difficulties scale and SDQ subscales, among those in the Comparable Problems group[a]

Scale	Comparable Problems group[a]		*t* *(df)*
	Perceived a need for professional help		
	Yes	No	
SDQ Tot.	17.21 (5.47)	12.96 (5.53)	-7.71*** (1193)
CESD	24.98 (12.64)	16.05 (9.62)	-7.14*** (120)
Anxiety	10.22 (5.61)	7.54 (4.27)	-4.87*** (122)
SDQ subscales			
Emotional symptoms	4.92 (2.49)	3.22 (2.27)	-7.43*** (1194)
Conduct problems	3.77 (1.97)	2.99 (2.00)	-3.94*** (1194)
Hyperactivity	5.53 (2.19)	4.68 (2.30)	-3.76*** (1193)
Peer Problems	2.98 (1.98)	2.07 (1.77)	-5.11*** (1194)
Prosocial behaviour	6.77 (2.27)	6.94 (1.95)	.79 ns (127)

Note. ns= Not statistically significant, $p>.05$.

[a] Perceived themselves to have emotional or behavioural problems, but did not perceive themselves to have more problems than their peers.

*$p<.05$,**$p<.01$,***$p<.001$.

Table 6.3 reports, for adolescents in the More Problems group, the mean scores and standard deviations for the CESD scale, Anxiety scale, SDQ total difficulties scale and SDQ subscales, for adolescents who did and did not perceive a need for professional help. Mean scores were much higher among these adolescents, of course, but for each scale and subscale in Table 6.3, adolescents who perceived a need for professional help had significantly higher mean scores than those who did not perceive a need for professional help. There were statistically significant differences between the mean scores of adolescents who perceived a need for professional help and those who did not, for all scales and subscales, with the exception of the Prosocial Behaviour subscale.

Table 6.3

Mean (SD) scores of adolescents who did and did not perceive a need for professional help for the CESD scale, Anxiety scale, SDQ total difficulties scale and SDQ subscales, among those in the More Problems group[a]

Scale	More Problems group[a]		*t* *(df)*
	Perceived a need for professional help		
	Yes	No	
SDQ Tot.	19.77 (6.17)	15.87 (5.88)	-9.73*** (991)
CESD	32.02 (13.38)	22.35 (11.90)	-11.10*** (600)
Anxiety	12.15 (5.81)	9.26 (5.13)	-7.72*** (618)
SDQ subscales			
Emotional symptoms	5.96 (2.61)	4.26 (2.44)	-10.19*** (992)
Conduct problems	4.45 (2.28)	3.73 (2.16)	-4.88*** (992)
Hyperactivity	5.72 (2.30)	5.32 (2.37)	-2.53* (991)
Peer Problems	3.63 (2.41)	2.55 (1.95)	-7.15*** (572)
Prosocial behaviour	6.94 (2.18)	6.88 (1.95)	-.40 ns (622)

Note. ns= Not statistically significant, $p>.05$.

[a] Perceived themselves to have more emotional or behavioural problems than their peers.

*$p<.05$,**$p<.01$,***$p<.001$.

These results indicate that adolescents who perceived a need for professional help had higher scores on the CESD scale, Anxiety scale, SDQ total difficulties scale and SDQ problem subscales than adolescents who did not perceive a need for professional help. From these results it is not discernible whether, once adolescents attain a certain threshold score on these scales and subscales, they become more likely to perceive a need for professional help or whether the likelihood that adolescents perceive a need for professional help steadily increases with their increasing scores on each of the scales and subscales (i.e., in a linear relationship). To further investigate the „dose-response" nature of these associations, the percentage of adolescents who perceived a need for professional help for the standardised scores on the SDQ total difficulties scale, CESD scale and Anxiety scale, as well as the SDQ individual subscales, were examined in Figures 6.1 to 6.4. S*tandardised scores* were computed and used for ease of comparison between the measures as each had a different range. Furthermore, the positively worded Prosocial Behaviour subscale was not included in these figures as it does not assess problem behaviour.

Figure 6.1 portrays, among adolescents in the Comparable Problems group, the percentage of adolescents who perceived a need for professional help plotted against the standardised scores of the CESD scale, Anxiety scale and SDQ total difficulties scale. Figure 6.2 portrays, among adolescents in the Comparable Problems group, the percentage of adolescents who perceived a need for professional help plotted against the standardised scores of the four SDQ subscales. Despite the variation in both of these Figures, it is clear that, as the standardised score increased on each of these scales and subscales, the percentage of adolescents who perceived a need for professional help also steadily increased. There was little indication of a threshold score beyond which the likelihood of

perceiving a need for professional help increased slightly for adolescents who scored beyond this point.

A similar trend was evident among adolescents in the More Problems group (see Figures 6.3 and 6.4) such that, as the standardised score increased on each scale and subscale, the percentage of adolescents who perceived a need for professional help steadily increased, with no real indication of a threshold score beyond which the likelihood that adolescents perceived a need for professional help increased or stabilised.

Consistent with problem recognition findings, it is evident from each of these Figures that the percentage of adolescents who perceived a need for professional help increased at a similar rate for increasing scores on each scale and subscale among each respective problem recognition group, despite each subscale and scale measuring different mental health symptoms. These results indicate that adolescents may recognise they need professional help for different types of mental health symptoms at a similar rate when symptom scores are expressed pm a standardised scale. Alternatively, these mental health symptoms may occur co-morbidly with each other. Therefore, while adolescents may only recognise that certain types of symptoms require professional help, these symptoms may occur concurrently with other types of symptoms for which they do not perceive a need for professional help. Multivariable logistic regression analyses are conducted in the next section to examine the variance accounted for by each of these scales and subscales in perceiving a need for professional help.

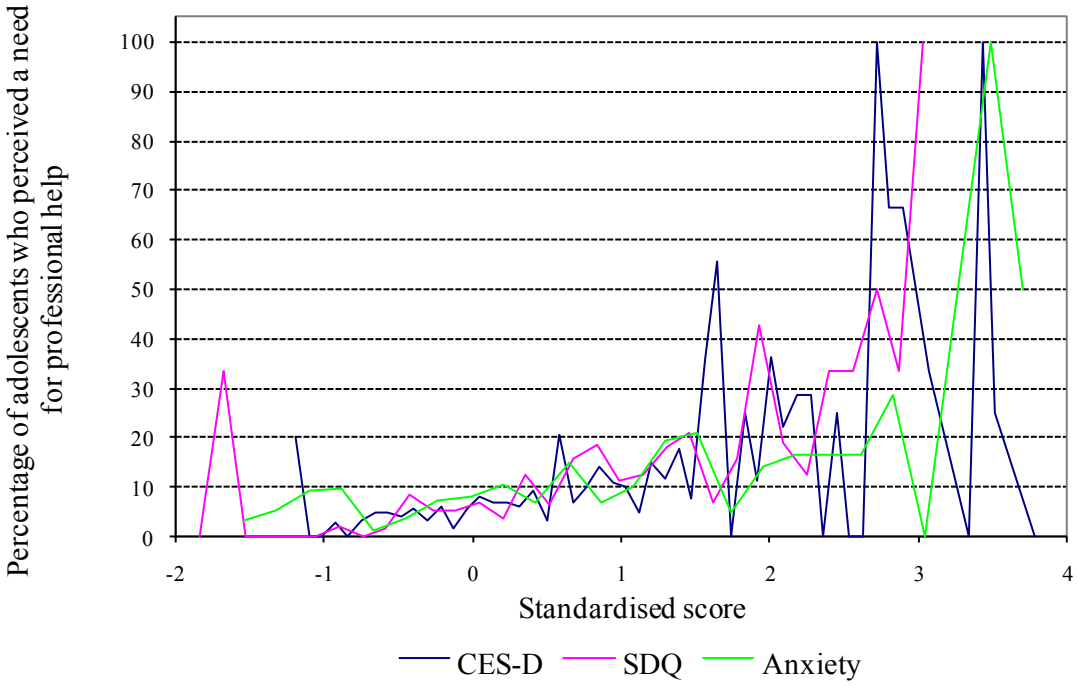


Figure 6.1. The percentage of adolescents who perceived a need for professional help for each standardised score on the CESD, SDQ and Anxiety scales, among adolescents in the Comparable Problems group.

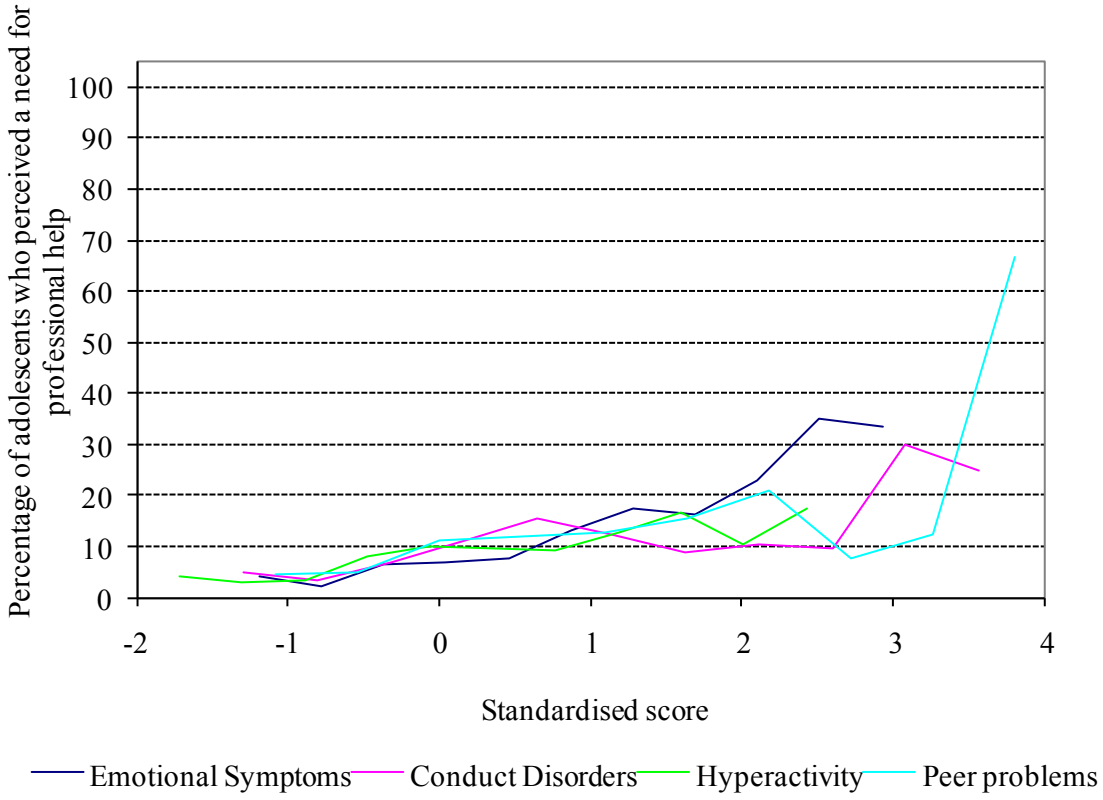


Figure 6.2. The percentage of adolescents who perceived a need for professional help for each standardised score on the SDQ subscale scores, among adolescents in the Comparable Problems group.

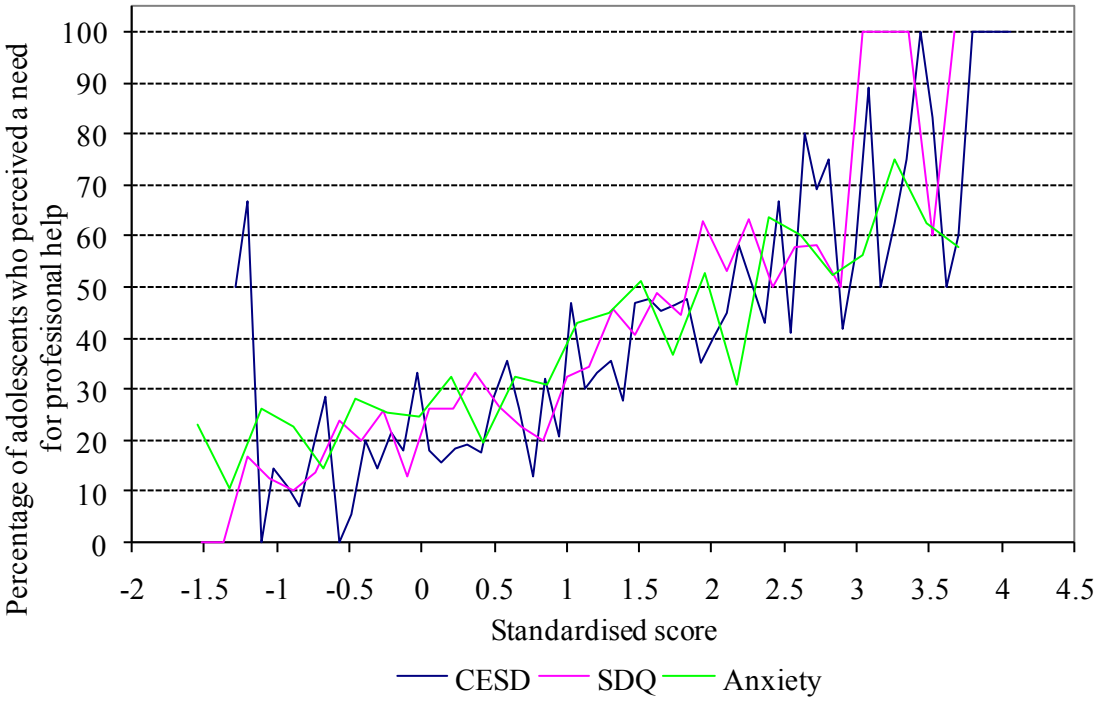


Figure 6.3. The percentage of adolescents who perceived a need for professional help for each standardised score on the CESD, SDQ and Anxiety scales, among adolescents in the More Problems group.

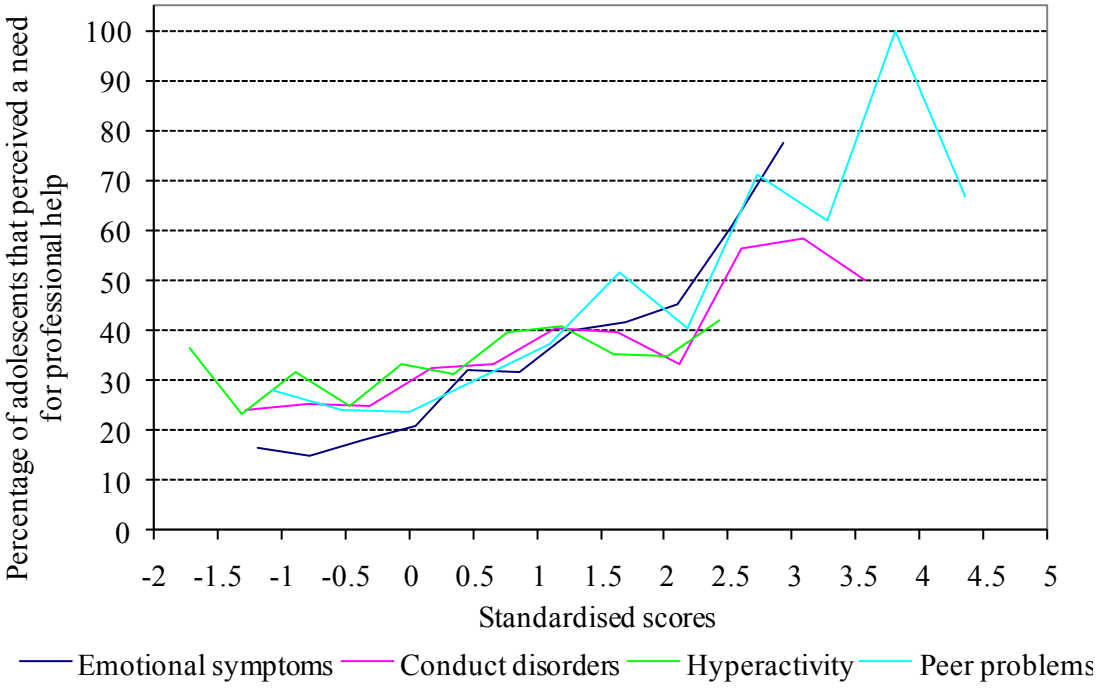


Figure 6.4. The percentage of adolescents who perceived a need for professional help for each standardised score on the SDQ subscales, among adolescents in the More Problems group.

Constructive Problem Solving scale, Interpersonal Skills subscales and Social Support subscales

Table 6.4 reports the mean scores and standard deviations for the Constructive Problem Solving scale, Interpersonal skills subscales and Social Support subscales for adolescents who did and did not perceive a need for professional help, among those in the Comparable Problems group. The reader is reminded that higher scores on each of these scales indicates better problem solving and interpersonal skills and higher levels of social support.

Adolescents who perceived a need for professional help had a lower mean score on each of the psychosocial scales and subscales than those who did not perceive a need for professional help. A series of t-tests revealed that there was a significant difference between the mean scores of the Constructive Problem Solving scale, the Family subscale, the Significant Other subscale, the Asserting Influence subscale and the Conflict Resolution subscale. Despite the statistical significance of these results, the magnitude of the differences was only small (Cohen, 1988), as indicated by the effect size (eta-squared).

Table 6.4

Mean (SD) scores on the Constructive Problem Solving scale, Interpersonal skills subscales and Social Support subscales of adolescents who did and did not perceive a need for professional help, among adolescents in the Comparable Problems group[a]

Scale	Comparable Problems group[a]		*t* (*df*)	η^2
	Perceived a need for professional help			
	Yes (*n*=111)	No (*n*=1091)		
Constructive Problem Solving	22.39 (10.44)	24.48 (9.46)	2.18* (1187)	.004
Social Support subscales				
Family relations	5.04 (1.46)	5.57 (1.09)	3.69*** (122.8)	.01
Friend relations	5.30 (1.48)	5.57 (1.14)	1.90ns (123.7)	--
Significant other	5.49 (1.32)	5.76 (1.10)	2.06* (125.9)	.004
Interpersonal Skills subscales				
Initiating relationships	5.17 (2.23)	5.33 (1.99)	.83ns (1166)	--
Emotional support seeking	6.28 (2.20)	6.31 (1.95)	.17ns (1166)	--
Asserting influence	5.30 (2.10)	5.82 (1.80)	2.47* (122.1)	.001
Self-disclosure	5.49 (2.18)	5.84 (1.84)	1.59ns (120.4)	--
Conflict resolution	4.74 (2.13)	5.24 (1.80)	2.33* (123.0)	.001

Note. Data missing from some participants (less than 5% cases missing); η^2=eta squared; ns = Not statistically significant, $p>.05$.

[a] Perceived themselves to have had emotional or behavioural problems, but did not perceive themselves to have more problems than their peers.

*$p<.05$,**$p<.01$,***$p<.001$.

Table 6.5 reports the mean scores and standard deviations for the Constructive Problem Solving scale, Interpersonal skills subscales and Social Support subscales for adolescents who did or did not perceive a need for professional help, among those in the More Problems group. It is apparent from Table 6.5, with the exception of the Initiating Relationships subscale and the Providing Emotional Support subscale, that adolescents who perceived a need for professional help also had a lower mean scores on each of the scales and subscales than those who did not perceive a need for professional help. A series of independent samples t-tests revealed that differences were statistically significant for only the Social Support subscales. Furthermore, the magnitude of the difference in the means was very small for each of these subscales, as indicated by the effect size (eta-squared) (Cohen, 1988).

Table 6.5

Mean (SD) scores on the Constructive Problem Solving scale, Interpersonal skills subscales and Social Support subscales of adolescents who did and did not perceive a need for professional help, among adolescents in the More Problems group [a]

Scale	More Problems group[a]		*t* *(df)*	η^2
	Perceived a need for professional help			
	Yes (*n*=343)	No (*n*=658)		
Constructive Problem Solving	22.24 (10.30)	23.52 (9.71)	1.93ns (995)	--
Social Support subscales				
Family relations	4.86 (1.47)	5.26 (1.30)	4.15*** (662)	.02
Friend relations	5.08 (1.51)	5.36 (1.34)	2.82** (623)	.01
Significant other	5.39 (1.47)	5.61 (1.22)	2.32* (593)	.01
Interpersonal Skills subscales				
Initiating relationships	5.34 (2.27)	5.13 (2.17)	-1.43ns (966)	--
Emotional support seeking	6.31 (2.24)	6.33 (2.01)	.15ns (607)	--
Asserting influence	5.41 (2.11)	5.55 (1.90)	1.08ns (615)	--
Self-disclosure	5.48 (2.25)	5.59 (2.07)	.77ns (632)	--
Conflict resolution	4.64 (2.17)	4.81 (1.96)	1.17ns (995)	--

Note. Data missing from some participants (less than 5% cases missing). η^2=eta squared. ns=Not statistically significant, $p>.05$.

[a] Perceived themselves to have more emotional or behavioural problems than their peers.

*$p<.05$,**$p<.01$,***$p<.001$.

The results indicated that adolescents who did or did not perceive themselves to need professional help did not differ greatly on the scores of these psychosocial scales and subscales, demonstrating there was little association between these variables and perceiving a need for professional help. It was of interest, however, that the adolescents who did not perceive a need for professional help generally reported higher levels of problem solving and interpersonal skills and higher levels of social support, than those who did not. These constructs have been conceptualised to be associated with adolescents‟ help-seeking behaviour in the help-seeking behaviour literature (Andersen, 1995; Andersen & Newman, 1973; Rickwood et al., 2005; Srebnik et al., 1996) and were included as covariates in logistic regression analyses reported later in this chapter.

Logistic regression analyses

To further investigate the relationships between adolescents‟ scores on the SDQ total difficulties scale, CESD scale and Anxiety scale, and perceiving a need for professional help, a series of logistic regression analyses were performed contrasting adolescents who did and did not perceive a need for professional help, among the two problem recognition groups, Comparable Problems and More Problems. For each problem recognition group the categories of the outcome variable were coded as follows:

0= Did not perceive a need for professional help, versus

1 = Perceived a need for professional help

Standardised predictor scores were used in the main analyses to allow for comparability across the different measures and, hence, each odds ratio estimate was the factor by which the odds of perceiving a need for professional help increased with a one Standard Deviation increase in the predictor. The reported *p*-values are those associated with a

maximum likelihood χ^2 and the appropriate degrees of freedom. Prediction success was generally uninformative and therefore was not reported.

Logistic regression analyses among adolescents in the Comparable Problems group

SDQ total difficulties score, CESD score and Anxiety score

Table 6.6 reports the results of the univariate (unadjusted) logistic regression analyses with scores on the SDQ total difficulties scale, CESD scale and the Anxiety scale as predictors of the outcome variable "perceiving a need for professional help", examined among those adolescents in the Comparable Problems group. To determine whether adolescents'' scores on the Interpersonal Skills subscales, Social Support subscales and Constructive Problem Solving scale affected the strength or statistical significance of these associations, several multivariable logistic regression analyses were performed adjusting for each construct separately and simultaneously.

Table 6.6

Results of univariate and multivariable logistic regression analyses (adjusting for covariates) of perceiving a need for professional help, among adolescents in the Comparable Problems group[a]

Scale	*n*	Univariate analyses (no covariates)		*p* value	Adjusted for Social support		*p* value	Adjusted for Interpersonal skills		*p* value	Adjusted for Constructive Problem Solving		*p* value	Adjusted for all psychosocial factors [b]		*p* value
		OR	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*	
SDQ Tot	1195	2.30	1.84-2.89	<.001	2.16	1.70-2.74	<.001	2.22	1.71-2.88	<.001	2.34	1.85-2.97	<.001	2.15	1.64-2.81	<.001
CESD	1182	2.20	1.82-2.67	<.001	2.07	1.69-2.54	<.001	2.13	1.72-2.64	<.001	2.20	1.80-2.69	<.001	2.08	1.66-2.60	<.001
Anxiety	1186	1.71	1.43-2.05	<.001	1.62	1.35-1.95	<.001	1.66	1.36-2.03	<.001	1.71	1.42-2.05	<.001	1.64	1.34-2.02	<.001

Note. OR = Odds ratio per standardised unit in the predictor; *CI* = Confidence Interval; SDQ Tot = SDQ Total difficulties score.

[a] Adolescents who perceived themselves to have the same amount of emotional or behavioural problems as their peers.

[b] All psychosocial factors included Social Support subscales, Interpersonal Skills subscales and Constructive Problem Solving scale.

Consistent with results reported earlier in this chapter, the odds ratio estimates of the unadjusted logistic regression analyses indicated that adolescents with higher scores on the CESD scale, the SDQ total difficulties scale and the Anxiety scale were more likely to perceive a need for professional help ($p<.001$) [20,21,22]. It is apparent from Table 6.6 that when no adjustment for other variables was undertaken, an increase of one standard deviation in the SDQ total difficulties score or the CESD score was associated with a two fold increase in the odds of adolescents perceiving themselves to need for professional help.

Furthermore, an increase of one standard deviation in the Anxiety score was associated with a 70% increase in the odds of adolescents perceiving a need for professional help. Nagelkerke‟s R^2 indicated that the variance explained by each scale was quite small, with 9.9% of the variance explained by the SDQ total difficulties score, 11.5% explained by the CESD score and 5.8% explained by the Anxiety score.

When adolescents‟ scores on the Interpersonal Skills subscales, Social Support subscales and Constructive Problem Solving ability scale were adjusted for individually or simultaneously, there were only slight changes in the odds ratio estimates for the SDQ total difficulties score, CESD score and Anxiety score and the significance of the results was not altered (see Table 6.6). These results indicate the adolescents‟ scores on the psychosocial scales and subscales did not explain the significant associations found between adolescents‟ SDQ total difficulties score, CESD score and Anxiety score and perceiving a need for professional help.

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[20] SDQ total difficulties scale χ^2 (1, n = 1195) = 55.61.
[21] CESD scale χ^2 (1, n = 1182) = 64.04.
[22] Anxiety scale χ^2 (1, n= 1186) = 32.41.

The SDQ total difficulties score, CESD score and the Anxiety score were strongly correlated with each other within the full sample, although they were not so strongly correlated that they were considered multi co-linear (see Chapter 3). To determine the unique contribution of each of these scales to the outcome variable beyond that explained by the other two scales, the three scales were subject to a multivariable logistic regression analysis adjusting for each of the other two scales (see Table 6.7). A further multivariable analysis was conducted simultaneously adjusting for scores on the Social Support subscales, the Interpersonal Skills subscales and the Constructive problem solving ability scale to determine whether these psychosocial variables had any additional effect on the strength and statistical significance of these associations after adjusting for the other two mental health measures (see Table 6.7). Results adjusting for each of the psychosocial variables individually are described in Table B6, Appendix B.

The model consisting of the three predictor (SDQ total difficulties score, CESD score and Anxiety score) variables was able to reliably distinguish between adolescents who did and did not perceive a need for professional help, χ^2 (3, n = 1166) = 76.26, p<.001. The variance in the outcome variable explained by these three scales exceeded that of any of the scales alone at 13.8%, however was still quite small.

Table 6.7

Results of the multivariate logistic regression analyses of perceiving a need for help (adjusting for other mental health problems and covariates) among adolescents in the Comparable Problems group[a]

Scale	Adjusted for other mental health symptom scales *n*=1166					*p* value	Adjusted for other mental health symptoms scale and all psychosocial factors[b] *n*=1096					*p* value
	B	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*		*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	
SDQ Tot	.48	.15	10.84	1.62	1.21-2.15	.001	.39	.17	5.17	1.48	1.06-2.07	.023
CESD	.52	.13	15.24	1.68	1.29-2.17	<.001	.51	.15	12.22	1.67	1.25-2.22	<.001
Anxiety	.07	.12	.32	1.07	.85-1.35	.573	.09	.14	.47	1.10	.84-1.44	.492

Note. B= Regression coefficient; *SE*=Standard Error; *OR* = Odds ratio per standardised unit in the predictor; *CI* = Confidence Interval; SDQ Tot = SDQ Total difficulties score.

[a] Adolescents who perceived themselves to have emotional or behavioural problems, but not more than their peers.

[b] All psychosocial factors (covariates) included social support, interpersonal skills and constructive problem solving.

As evident from a comparison of Table 6.6 and Table 6.7, the odds ratio estimate was reduced for each of the scales in the multivariable analysis compared to the results of the univariate analyses, indicating the SDQ total difficulties score, CESD score and Anxiety score explained some common variance in perceiving a need for professional help. Nevertheless, the results were still statistically significant for each of the scales, with the exception of the Anxiety scale.

To determine whether the Anxiety "effect" was confounded with the CESD score or with the SDQ total difficulties score, two further multivariable analyses were conducted with each of these scores entered as a predictor with the Anxiety score. Results revealed that the odds ratio estimate for the Anxiety score was similarly reduced when it was entered as a predictor with either the CESD score (*OR*=1.20, 95% *CI*: .95-1.51, *p*=.119) or the SDQ total difficulties score (*OR*=1.26, 95% *CI*: 1.03-1.56, *p*=.028). However, the Anxiety score was still significantly associated with the outcome variable after adjusting for the SDQ total difficulties score. These findings indicate that the variance in perceiving a need for professional help that was explained by the Anxiety score was shared with both the CESD and SDQ total difficulties score.

Table 6.7 also indicates that, after adjusting for adolescents" scores on the psychosocial scales and subscales simultaneously, the odds ratio estimates of the SDQ total difficulties score and the CESD score were only slightly altered and associations remained statistically significant. The Anxiety score was not significantly associated with the outcome variable after adjusting for the SDQ total difficulties score and the CESD score in the previous analysis and this was unchanged by adjusting for scores on the psychosocial scales and subscales.

SDQ subscale scores

To investigate whether different types of mental health problems were more strongly associated with perceiving a need for professional help, the associations between the five individual SDQ subscale scores and perceiving a need for professional help were also examined. Each of the SDQ subscales measure related aspects of mental health functioning; therefore, in addition to univariate logistic regression analyses, a multivariable logistic regression was conducted adjusting for the effects of the other SDQ subscales. Table 6.8 reports the results of the univariate analyses and the multivariable logistic regression analysis.

The results of the unadjusted analyses revealed that adolescents‟ scores on the Emotional Symptoms subscale, Conduct Disorders subscale, Hyperactivity subscale and Peer Problems subscale were significantly associated with perceiving a need for professional help ($p<.001$) [23]. Only the Prosocial Behaviour subscale score was not a significant predictor of the outcome variable ($p=.374$).

The odds ratios of the univariate logistic regression analyses indicated that adolescents who scored higher on the Emotional Symptoms, Conduct Disorders, Hyperactivity and Peer Problems subscales were significantly more likely to perceive a need for professional help. However, each of the subscales explained only a small proportion of the variance in the outcome variable. The variance in the outcome variable explained by the Emotional Symptoms subscale, the Conduct Disorders subscale, the Hyperactivity subscale and the Peer Problems subscale was 8.9%, 2.6%, 2.5% and 4.2%, respectively.

[23] Emotional Symptoms subscale χ^2 (1, n = 1196) = 50.05, Conduct Disorders subscale χ^2 (1, n = 1196) = 14.46, Hyperactivity subscale χ^2 (1, n = 1195) = 13.85, and Peer problems subscale χ^2 (1, N = 1196) = 23.28.

The model consisting of the five subscale scores entered simultaneously as predictors of perceiving a need for professional help was statistically significant, χ^2 (5, n=1195) = 63.82, p<.001. The variance explained was still small at 11.3%, although it exceeded that of any individual SDQ subscale score, and also the SDQ total difficulties score. After adjusting for all other SDQ subscale scores, the odds ratio estimates were decreased for each subscale as compared to the results of the unadjusted logistic regression analyses. Only the scores on the Emotional Symptoms subscale and Peer Problems subscale remained significantly associated with perceiving a need for professional help, indicating the SDQ subscale scores explained some common variance in the outcome variable.

To determine the unique variance explained in perceiving a need for professional help by each of the SDQ subscale scores, a series of analyses were conducted extracting each variable from the full model one at a time. Removing the Emotional Symptoms score resulted in the largest decrease in the proportion of variance explained (11.3% to 6.9%). Removing the peer problems scale resulted in only a small decrease in the proportion of variance explained (11.3% to 10.1%). Removing the remainder of the subscale scores resulted in a minimal change in the proportion of variance explained (less than 1%). These results indicate the Emotional Symptoms subscale score explained the greatest proportion of unique variance in the outcome variable, beyond that explained by the other SDQ subscale scores.

Table 6.8

Results of univariate and multivariable (adjusting for all other SDQ subscales) logistic regression analyses of perceiving a need for professional help, among adolescents in the Comparable Problems group[a]

SDQ subscale	*n*	Univariate (unadjusted)					*p* value	Adjusted for all other SDQ subscales *n*=1195					*p* value
		B	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*		*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	
Emotional symptoms	1196	.71	.10	48.46	2.02	1.66-2.47	<.001	.56	.11	25.00	1.75	1.41-2.18	<.001
Conduct disorders	1196	.37	.10	14.96	1.45	1.20-1.74	<.001	.12	.12	1.04	1.13	.90-1.42	.308
Hyperactivity	1195	.39	.11	13.71	1.47	1.20-1.81	<.001	.19	.12	2.56	1.21	.96-1.54	.110
Peer problems	1196	.45	.09	24.39	1.57	1.31-1.88	<.001	.26	.10	6.66	1.30	1.07-1.58	.010
Prosocial behaviour	1197	-.09	.10	.80	.92	.75-1.11	.370	-.02	.11	.03	.98	.79-1.22	.863

Note. B=Regression coefficient; *SE*= Standard Error; *OR*= Odds ratio per standardised unit in the predictor; *CI*=Confidence interval.

[a] Adolescents who perceived themselves to have emotional or behavioural problems, but not more than their peers.

Logistic regression analyses among adolescents in the More Problems group

The previous analyses were repeated among adolescents in the More Problems group (those who had perceived themselves to have more emotional or behavioural problems than their peers). These analyses determined the strength and significance of the associations that were present between adolescents‟ scores on the SDQ total difficulties scale and subscales, CESD scale and Anxiety scale and the outcome variable "perceiving a need for professional help", among adolescents in the More Problems group.

SDQ total difficulties score, CESD score and Anxiety score

Table 6.9 reports the results of the univariate (unadjusted) logistic regression analyses and also results of analyses adjusting for adolescents‟ scores on the psychosocial scales and subscales. The univariate analyses indicated that the SDQ total difficulties score was significantly associated with perceiving a need for professional help[24] ($p<.001$), as was the CESD score[25] ($p<.001$) and the Anxiety score[26] ($p<.001$). The odds ratios indicated that, an increase of one standard deviation in the CESD score or the SDQ total difficulties score was associated with a two-fold increase in the odds of adolescents perceiving themselves to need professional help. An increase of one standard deviation in the anxiety score was associated with a 55% increase in the odds of adolescents perceiving themselves to need professional help.

Nagelkerke‟s R^2 indicated that the CESD score explained 16% of the variance in the outcome variable, the SDQ total difficulties score accounted for 11.9% of the variance and the Anxiety score accounted for 8.2% of the variance. The variance explained in the

[24] SDQ total difficulties scale χ^2 (1, n = 993) =89.52.
[25] CESD Scale χ^2 (1, n = 982) = 120.60.
[26] Anxiety Scale χ^2 (1, n = 989) =60.61.

outcome variable by these scores was slightly greater among this group than that found for the Comparable Problems group.

Table 6.9

Results of univariate and multivariable (adjusting for covariates) logistic regression analyses of perceiving a need for professional help, among adolescents in the More Problems group[a]

Scale	*n*	Univariate analyses (no covariates)		*p* value	Adjusted for Social Support		*p* value	Adjusted for Interpersonal Skills		*p* value	Adjusted for Constructive Problem Solving		*p* value	Adjusted for all psychosocial factors[b]		*p* value
		OR	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*	
SDQ Tot	993	1.97	1.70-2.29	<.001	1.90	1.63-2.23	<.001	2.29	1.92-2.73	<.001	2.00	1.72-2.35	<.001	2.19	1.83-2.62	<.001
CESD	982	1.94	1.71-2.21	<.001	1.91	1.67-2.18	<.001	2.00	1.74-2.29	<.001	1.96	1.72-2.24	<.001	1.95	1.69-2.24	<.001
Anxiety	989	1.55	1.38-1.73	<.001	1.50	1.34-1.68	<.001	1.60	1.42-1.82	<.001	1.54	1.37-1.72	<.001	1.56	1.38-1.78	<.001

Note. OR = Odds ratio per standardised unit in the predictor; *CI* = Confidence Interval; SDQ Tot = SDQ Total difficulties score.

[a] Adolescents who perceived themselves to have more emotional or behavioural problems than their peers.

[b] Social Support subscale scores, Interpersonal Skills subscales scores and Constructive Problem Solving scale score adjusted for simultaneously.

Analyses were also conducted to determine whether adjusting for adolescents‟ scores on the psychosocial scales and subscales explained the significant associations between adolescents‟ SDQ total difficulties score, CESD score and Anxiety score and perceiving a need for professional help (see Table 6.9). Adjusting for the Social Support subscales, the Social Skills subscales and the Constructive Problem Solving scale individually and simultaneously produced only a modest change in the odds ratio estimates and did not alter the significance of the result, although a slight increase in the odds ratio estimate (0.32) was observed with the SDQ total difficulties score after adjusting for the Interpersonal Skills subscale scores. Therefore, it can be concluded that differences in scores on psychosocial scales and subscales did not explain the significant associations found between the SDQ total difficulties score, the CESD score and the Anxiety score and perceiving a need for professional help.

As previously mentioned, the CESD score, SDQ total difficulties score and Anxiety score were strongly correlated in the full sample (see Table 3.6, Chapter 3), therefore it is likely these scores explained some common variance in the outcome variable. To investigate the unique contribution of these scales to the variance in the outcome variable independent of this common variance, they were entered into a multivariable logistic regression analysis (see Table 6.10). An additional multivariable logistic regression analysis was conducted, simultaneously adjusting for adolescents‟ scores on the psychosocial scales and subscales, to assess if they produced any further change in the strength or significance of associations when other measures of mental health symptoms were also adjusted. Results adjusting for each of the psychosocial variables individually are described in Table B7, Appendix B.

Table 6.10

Results of multivariate logistic regression analyses of perceiving a need for professional help (adjusting for scores on other mental health measures and covariates), among adolescents in the More Problems group[a]

Scale	Adjusted for other mental health symptom scales *n*=967					*p* value	Adjusted for other mental health symptoms scale and all psychosocial factors[b] *n*=904					*p* value
	B	*SE*	Wald test (*z*-ratio)	OR	95% *CI*		*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	
SDQ Tot	.27	.10	7.19	1.31	1.08-1.59	.007	.42	.12	13.23	1.52	1.21-1.91	<.001
CESD	.46	.08	30.89	1.59	1.35-1.87	<.001	.41	.09	21.45	1.51	1.27-1.80	<.001
Anxiety	.12	.07	2.79	1.13	.98-1.30	.095	.14	.08	3.42	1.16	.99-1.35	.064

Note. B= Regression coefficient; *SE*=Standard Error; *OR* = Odds ratio per standardised unit in the predictor; *CI* = Confidence Interval.

[a] Adolescents who perceived themselves to have more emotional or behavioural problems than their peers.

[b] Social Support subscale scores, Interpersonal Skills subscales scores and Constructive Problem Solving scale score.

The model with these three variables (SDQ total difficulties score, the CESD score and the Anxiety score) as predictors of perceiving a need for professional help was significant, χ^2 (3, n= 967) = 130.60, p<.001. Variance in the dependent variable explained by these three variables was 17.5%, and exceeded that of any variable alone in the univariate analyses. The odds ratio estimates were reduced for the CESD score and the SDQ total difficulties score compared to those found in the univariate analyses, however, results were still statistically significant. As previously found for the Comparable Problems group, the odds ratio estimate for the Anxiety scale was also reduced and was no longer a significant predictor after adjusting for the other two subscale scores. This indicates the Anxiety score accounted for very little unique variance in the outcome variable beyond that shared with the CESD score and SDQ total difficulties score.

To determine whether the Anxiety score explained more variance in common with the CESD score or the SDQ total difficulties score, further multivariable logistic regression analyses were performed with the Anxiety score entered with the CESD score and the SDQ score separately. Results indicated that the odds ratio estimate for the Anxiety score was similarly reduced after adjusting for either the CESD score (*OR*=1.20, *p*=.009) or the SDQ total difficulties score (*OR*=1.25, *p*=.001). These results indicate that the variance in perceiving a need for professional help that was explained by the Anxiety score was shared with both the CESD score and SDQ total difficulties score.

When a further multivariable analysis was conducted that additionally adjusted for adolescents‟ scores on the psychosocial scales and subscales simultaneously, the odds ratio estimates were only slightly altered. As found in the previous analysis (that adjusted for the SDQ total difficulties score and the CESD score) the Anxiety score was still not significantly associated with the outcome variable. Similar to results of previous analyses (see Table 6.5), there was an increase in the odds ratio estimate of the SDQ total

difficulties score after adjusting for all psychosocial scale and subscale scores (as well as the CESD score and Anxiety score), which was also driven by adjusting for adolescents' levels of Interpersonal Skills (see Table B7, Appendix B). These results indicate the scores on psychosocial scales and subscales did not fully explain the significant associations found between the SDQ total difficulties score and CESD score with perceiving a need for professional help, even after adjusting for the effects of each other and the Anxiety score.

SDQ subscale scores

To further investigate whether different types of mental health problems were more strongly associated with perceiving a need for professional help, the five individual subscales of the SDQ were also subjected to univariate (unadjusted) logistic regression analyses and a multivariable logistic regression analysis (see Table 6.11). Results of the univariate logistic analyses confirmed that all of the SDQ subscales were significantly associated with perceiving a need for professional help, except the Prosocial Behaviour subscale[27] (p=.682). The Emotional Symptoms subscale[28], the Conduct Disorders subscale[29] and the Peer Problems subscale[30] were each confirmed as significantly associated with perceiving a need for professional help (p<.001), as was the Hyperactivity subscale (p<.05)[31]. The odds ratios indicated that adolescents with higher scores on the Emotional Symptoms subscale, the Conduct Disorders subscale, the Hyperactivity subscale and the Peer Problems subscale were more likely to perceive a need for professional help. These subscales each explained 12.9%, 3.2%, 7.5% and 1.2% of the variance in the outcome variable, respectively.

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[27] Prosocial Behaviour subscale χ^2 (1, n = 994) = .168.
[28] Emotional Symptoms subscale χ^2 (1, n= 994) = 97.28.
[29] Conduct Disorders χ^2 (1, n = 994) = 23.23.
[30] Peer Problems subscale χ^2 (1, n = 994) = 55.07.
[31] Hyperactivity subscale χ^2 (1, n = 993) = 6.41.

Table 6.11

Results for simple and multivariable (adjusting for all other SDQ subscale scores) logistic regressions analyses of the outcome variable "perceiving a need for professional help", among adolescents who in the More Problems group[a]

SDQ subscale	*n*	Univariate (unadjusted) analyses					*p* value	After adjusting for all other SDQ subscales (*n*=993)					*p* value
		B	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*		*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	
Emotional symptoms	994	.64	.07	86.78	1.90	1.66-2.18	<.001	.54	.08	47.21	1.72	1.48-2.01	<.001
Conduct disorders	994	.29	.06	22.76	1.35	1.19-1.53	<.001	.26	.08	10.90	1.30	1.11-1.52	.001
Hyperactivity	993	.18	.07	6.35	1.19	1.04-1.37	.012	-.12	.09	1.83	.89	.75-1.05	.176
Peer problems	994	.43	.06	52.34	1.53	.90-1.17	<.001	.24	.07	13.58	1.27	1.12-1.45	<.001
Prosocial behaviour	994	.03	.07	.17	1.03	1.36-1.72	.683	.06	.08	.61	1.07	.91-1.25	.436

Note. B= Unstandardised regression coefficient; *SE*=Standard Error; *OR* = Odds ratio per standardised unit in the predictor; *CI* = Confidence Interval.

[a] Adolescents who perceived themselves to have more emotional or behavioural problems than their peers.

The model consisting of the five individual SDQ subscales was able to reliably distinguish between adolescents who did and did not perceive a need for professional help, χ^2 (1, n = 993) = 126.43, p<.001. The variance explained in the outcome variable by the five SDQ subscale scores entered simultaneously was 16.5%, which exceeded that of any of the SDQ subscales alone. After adjusting for all other SDQ subscale scores, the Hyperactivity score was no longer significantly associated with the outcome variable.

To determine the unique variance that each of the SDQ subscale scores explained in perceiving a need for professional help, a series of analyses were conducted, extracting each variable from the full model one at a time. Removing the Emotional Symptoms score resulted in the largest decrease in the proportion of variance explained (16.5% to 10.2%), suggesting it explained the largest proportion of unique variance in the outcome variable. Removing the Peer Problems resulted in a smaller decrease in the proportion of variance explained (16.5% to 14.8%), followed by the Conduct Disorders subscale (16.5% to 15.2%). Removing the Hyperactivity subscale and the Prosocial Behaviour subscale resulted in virtually no change in the proportion of variance explained by the model. These results provide evidence that the Emotional Symptoms subscale score was more strongly related to perceiving a need for professional help than the other SDQ subscale scores.

Discussion

Mental health problems

The results of this study support Hypothesis 6.1, namely that adolescents with higher scores on the SDQ total difficulties scale, CESD scale and Anxiety scale were more likely to perceive a need for professional help with their emotional or behavioural problems. This finding was consistent among adolescents who perceived that they had more emotional or behavioural problems than their peers and those who perceived that they had emotional or behavioural problems, but not more than their peers.

These findings were consistent with those of other studies, despite the different measures of mental health problems and methodology they employed as compared to this study (Saunders et al., 1994; Sears, 2004). For example, Saunders et al. found that among adolescents who reported they had emotional, behavioural or mental health problems, those with higher levels of suicidal ideation were more likely to perceive a need for professional help. Sears also found that among adolescents who reported having emotional, behavioural or physical problems, those who perceived a need for professional help reported more impaired emotional (depressive symptoms, anxiety symptoms and self-esteem) and behavioural adjustment (substance use, school misconduct and antisocial behavioural) than those who did not. While there are methodological differences between these studies, taken together, the results suggest that adolescents with more severe mental health symptoms are more likely to perceive a need for professional help for their problems.

It is also apparent from the results of this study that the level of mental health problems (SDQ total difficulties score, CESD score and Anxiety score) explained only a proportion (13.8% to 17.5%) of the variance in perceiving a need for professional help among either

problem recognition group. Furthermore, Figures 6.1 to 6.4 of this chapter demonstrate that many adolescents do not perceive themselves to need professional help for their problems, even though they may be experiencing high levels of mental health problems. Adolescents may have difficulty recognising the point at which symptoms require professional help because they lack „emotional competence" and/or „mental health literacy". As noted in the introduction, emotional competence is the ability to understand thoughts and feelings, to articulate and describe thoughts and feelings to others and to manage these thoughts and feelings effectively (Ciarrochi et al., 2003). Adolescents may lack these skills and therefore encounter difficulties when interpreting symptoms of mental health problems as problems that may require professional help. Furthermore, they may also lack adequate knowledge of the signs and symptoms of mental health problems that would signify a need for professional help. For example, Burns and Rapee (2006) found that adolescents were less likely to identify less obvious symptoms of depression (e.g., fatigue and diminished interest in activities) as depression than more overt symptoms of depression (e.g., suicidal intent and feelings of worthlessness) in a hypothetical character. Therefore, it is possible that adolescents may not recognise a need for professional help until their symptoms become quite severe and/or manifest in more overt symptoms.

An additional finding of this chapter was that adolescents" level of anxiety was no longer significantly associated with perceiving a need for professional help after adjusting for their scores on the SDQ total difficulties scales and the CESD scale. It is possible that anxiety symptoms may have only occurred co-morbidly with other mental health problems and therefore did not explain any unique variance in perceiving a need for professional help, beyond that explained by these other measures of mental health problems. Alternatively, these results may suggest that, in the absence of co-morbid depression symptoms or other mental health problems, adolescents may be less likely to recognise symptoms of anxiety

as problematic. For example, being worried, preoccupied, irritable and having sleep difficulties, all symptoms of anxiety, may be less obvious as symptoms of emotional or behavioural problems to the adolescent than symptoms of depression or other mental health problems. Therefore, there may be differences in adolescents‟ mental health literacy regarding different types of mental health symptoms. However, in general, levels of mental health literacy regarding useful forms of help for depression or psychosis have been found to be relatively low (Wright et al., 2005).

Hypothesis 6.2 was based on findings of studies conducted by Sears (2004) suggesting that adolescents‟ levels of internalising problems (emotional adjustment) were more strongly associated with perceiving a need for professional help than their levels of externalising problems (behavioural adjustment). The results reported in this chapter indicated that among adolescents who perceived themselves to have more problems than their peers, levels of internalising problems explained more of the variability in the likelihood that adolescents perceived a need for professional help than levels of externalising problems (i.e., conduct problems, hyperactivity and peer problems). These results support Hypothesis 6.2; however, it should also be noted that even though they explained less variance, higher levels of both peer problems and conduct disorders were also related to an increased likelihood of perceiving a need for professional help among adolescents who perceived themselves to have more problems than their peers, after adjusting for the effects of the other SDQ subscales. Therefore, the results also indicate that experiencing higher levels of any type of mental health problem, whether internalising or externalising in nature, increased the likelihood that adolescents perceived a need for professional help.

It may be that symptoms of internalising problems are more noticeable to adolescents as problems that warrant professional help than symptoms of externalising problems and this

may explain why internalising problems are more strongly associated than externalising problems with perceiving a need for professional help. While studies have shown that adolescents have a low level of mental health literacy regarding depressive symptoms (Burns & Rapee, 2006; Cotton et al., 2006), their level of mental health literacy regarding depressive symptoms and other internalising symptoms may still be slightly greater than their knowledge of externalising symptoms. This greater awareness of internalising symptoms may be due to campaigning and intervention programs implemented by organisations such as *beyondblue* (beyondblue, 2007a) and the MindMatters initiative (Wyn, Cahill, Holdsworth, Rowling, & Carson, 2000).

It is also possible that internalising symptoms impede adolescents‟ mood and thus interfere with their everyday functioning to a greater extent than externalising symptoms and, therefore, adolescents may be more likely to recognise these symptoms as problems that require professional help. Furthermore, adolescents may be less likely to consider externalising problems, such as conduct problems, hyperactivity and peer problems, as problems that require professional help. Some degree of antisocial behaviour is sometimes considered as a normal part of adolescence by parents (Moffit et al., 1996). Parents‟ dismissal of these problems as normal may impact adolescents‟ judgement of their own problems and, therefore, they may also consider their behavioural problems to be normal.

Psychosocial factors

An aim of this chapter was also to determine whether adolescents‟ levels of social support, constructive problem solving ability and interpersonal skills explained the significant associations found between their scores on the SDQ total difficulties scale, CESD scale and Anxiety scale and perceiving a need for professional help. The results indicated that adolescents‟ levels of psychosocial functioning did not explain significant associations

found between adolescents‟ scores on the SDQ total difficulties scale, CESD scale and Anxiety scale and perceiving a need for professional help. This result was consistent with the results of the independent samples t-tests indicating that these covariates (psychosocial variables) were only weakly associated with perceiving a need for professional help.

The results of the independent samples t-tests indicated that only some psychosocial factors were significantly associated with perceiving a need for professional help. Among adolescents who perceived themselves to have emotional or behavioural problems but not more than their peers, those who perceived a need for professional help had significantly lower levels of constructive problem solving ability, perceived support from family and a significant other, and asserting influence and conflict resolution skills, compared to adolescents who did not perceive a need for professional help. Among adolescents who perceived themselves to have more problems than their peers, those who perceived a need for professional help had significantly lower levels of perceived support from friends, family and a significant other, than those who did not perceive a need for professional help. As noted, the strength of these associations was very small (as indicated by the effect size). As suggested for problem recognition (Chapter 5), adolescents with higher levels of social support, problem solving skills and interpersonal skills may also have a lower level of emotional or behavioural problems. Therefore, this may have resulted in decreased perceptions of a need for professional help.

An alternative explanation is that adolescents with higher levels of social support may have perceived their informal supports as sufficient to help them with their problems and, therefore, may have been less likely to perceive a need for professional help. This explanation may also be extendable to other psychosocial skills. For example, it is possible that adolescents with higher levels of interpersonal skills and constructive problem solving

skills feel they have the capacity to deal with problems themselves and, therefore, may be less likely to perceive a need for professional help.

Summary

In summary, adolescents‟ SDQ total difficulties score, CESD score and Anxiety score were significantly associated with perceiving a need for professional help and the direction of these associations were consistent with those found with problem recognition. The significance and strength of the associations found between adolescents‟ levels of mental health problems and perceiving a need for professional help were maintained after adjusting for adolescents‟ levels of social support, interpersonal skills and constructive problem solving ability. The results also indicated that experiencing any type of mental health problems, whether internalising or externalising in nature, increased the likelihood that adolescents perceived a need for professional help.

Chapter 7 investigates the relationships between socio-demographic characteristics and perceiving a need for professional help and further examines whether these associations persist after adjusting for adolescents‟ levels of mental health problems.

CHAPTER 7: THE RELATIONSHIPS BETWEEN SOCIO-DEMOGRAPHIC CHARACTERISTICS AND PERCEIVING A NEED FOR PROFESSIONAL HELP AND SUBSIDIARY ANALYSES OF ALL PREDICTORS OF PERCEIVING A NEED FOR PROFESSIONAL HELP

Introduction

As previously noted, the results of the few studies that have examined the relationships between socio-demographic characteristics and adolescents‟ attainment of different stages of adolescent help-seeking suggest that adolescents‟ socio-demographic characteristics may have differential relationships with each stage of help-seeking (Saunders et al., 1994: Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). This chapter examines the strength and statistical significance of the associations between adolescents‟ socio-demographic characteristics and the second stage of help-seeking behaviour examined in this study, perceiving a need for professional help. It also examines whether the significant associations between socio-demographic characteristics and perceiving a need for professional help persist after adjusting for adolescents‟ levels of mental health problems (scores on the SDQ total difficulties scale, CESD scale and Anxiety scale).

Hypotheses

As in Chapter 6, relationships between predictors and adolescents‟ perceptions of a need for professional help were investigated in two mutually exclusive problem recognition groups. These were:

i) Comparable Problems group: adolescents who perceived they had emotional or behavioural problems, but did not perceive they had more of these problems than their peers.

ii) More Problems group: adolescents who perceived themselves to have more emotional or behavioural problems than their peers.

Gender

As mentioned in the Introduction, the few previous studies that have examined the relationship between gender and perceiving a need for professional help have produced varying results (Saunders et al., 2003; Sears, 2004). Similar to the study conducted by Saunders et al., this study also assesses adolescents‟ perceptions of a need for professional help for only emotional or behavioural problems, whereas Sears additionally assessed their perceptions of a need professional help for physical problems. Therefore, similar to Saunders et al., in this study it is hypothesised that:

Females will be more likely than males to perceive a need for professional help (Hypothesis 7.1).

Language spoken at home

There are few studies that have examined the help-seeking behaviour of adolescents from ethnic minority backgrounds (Cauce et al., 2002; Rickwood, Deane, & Wilson, 2007) and no studies have examined the relationship between ethnicity and perceiving a need for professional help. However, ethnicity and culture are conceptualised to have a significant effect on adolescents‟ help-seeking behaviour. It is currently unknown whether Australian adolescents from a non-English speaking background are less likely to participate in specific stages of help-seeking; however, based on the limited previous research (Kataoka et al., 2002; Kodjo & Auinger, 2004; Kuhl, Horlick & Morrissey 1997) it is hypothesised that:

Adolescents from a non-English speaking background will be less likely than those from an English speaking background to perceive a need for professional help (Hypothesis 7.2).

Parental Status

The few studies that have examined the association between parental and family factors with the specific stage of perceiving a need for professional help have not found a significant association between the two (Saunders et al., 1994; Sears, 2004). This study differs from these previous studies as it assessed adolescents from a younger age range and one year level only (i.e., only Year 8 students with a mean age of 13 years) than other comparative studies that have assessed adolescents from a wider age range (13 to 18+ years)[32] and multiple year levels (i.e., school years 7 through to 12; Saunders et al., 1994; Sears, 2004). It is possible that parental status exerts more influence on younger adolescents than older adolescents. Therefore, in contrast to findings of previous studies (Saunders et al.; Sears, 2004), in this study it is hypothesised that:

Adolescents with parents who do not live together will be more likely than those with parents who live together to perceive a need for professional help (Hypothesis 7.3).

Parental paid employment

In this study, parents‟ paid employment status is conceptualised to primarily affect the likelihood that adolescents who perceive a need for professional help have received help appropriate to their need. However, parents‟ paid employment status may also affect adolescents‟ perceptions of whether they need professional help for their emotional or behavioural problems through the financial strain it may afflict on a family. For example,

[32] The age ranges for the two comparative studies are reported as Saunders et al. (1994) did not report a mean age in their study.

Sawyer et al. (2007) found that a significantly higher proportion of adolescents aged 13 to 17 who had mental health problems in the clinical range (assessed by the CBCL; Achenbach, 1991a) were from families with lower incomes, compared to those who did not have problems in the clinical range. Therefore, adolescents‟ perceptions of whether they need professional help may be higher among adolescents from families with parents who do not work in full time paid employment. It is hypothesised that:

Adolescents with fathers and mothers who are not in full time paid employment (i.e., do not work in paid employment, work in part time paid employment or are retired) will be more likely than those with fathers and mothers who are in full time paid employment to perceive a need for professional help (Hypothesis 7.4).

Covariates: Levels of mental health problems

It is possible that adolescents‟ levels of levels of mental health problems explain the significant associations found between socio-demographic characteristics and perceiving a need for professional help. To adjust for this possibility, the aforementioned hypothesised associations will be examined adjusting for adolescents‟ levels of mental health problems (SDQ total difficulties score, CESD score and Anxiety score). It is hypothesised that significant associations will persist after adjusting for adolescents‟ levels of mental health problems.

Chapter structure

The present chapter consists of two sections as in previous results chapters. First the proportions of adolescents perceiving a need for professional help were examined across categories of socio-demographic characteristics. These were examined among adolescents in the Comparable Problems group, and those in the More Problems groups. A series of

Pearson‟s chi-square tests were performed to establish the significant associations between these socio-demographic characteristics and perceiving a need for professional help, among these two problem recognition groups. The results of these analyses guided which socio-demographic characteristics were included in the logistic regression analyses.

A series of univariate and multivariable logistic regression analyses were then conducted to further explore the relationships between socio-demographic characteristics and perceiving a need for professional help. These analyses also determined whether levels of mental health symptoms (SDQ total difficulties score, CESD score and Anxiety score) explained the significant associations between socio-demographic characteristics and perceiving a need for professional help.

The proportions of adolescents who perceived a need for professional help according to categories of socio-demographic characteristics

Table 7.1 reports the percentage of adolescents who perceived a need for professional help for each category of the socio-demographic characteristics, among adolescents in the Comparable Problems group and those in the More Problems group. It is evident from Table 7.1 that among adolescents in the Comparable Problems group, the proportion of adolescents who perceived a need for professional help showed little variation across the different categories of gender, language spoken at home and father‟s and mother‟s paid employment status.

However, in the Comparable Problems group, there was significant variation in the proportion of adolescents who perceived a need for professional help, across the categories of parental status. This variation was largely driven by adolescents with parents who were separated or divorced and those with parents who lived together. The proportion of

adolescents who perceived a need for professional help among those with parents who were separated or divorced almost doubled the proportion among those with parents living together. While the proportion of adolescents who perceived a need for help varied across the other parental status categories, the numbers of adolescents in these categories were quite low.

In the More Problems group, a greater proportion of females than males perceived a need for professional help ($p<.01$). There was little variation in the proportion of adolescents who perceived a need for professional help by language spoken at home and parental status categories. However, a greater proportion of adolescents with mothers who were not in paid employment (either full time or part time) than those with mothers in full time or part time paid employment perceived a need for professional help. A smaller proportion of adolescents with fathers in full time paid employment perceived a need for professional help than those with fathers who worked in part time paid employment, those not working in paid employment (either full time or part time) and those with father who were retired perceived a need for professional help.

In summary, the socio-demographic characteristics of gender, father"s paid employment status and mother"s paid employment status were significantly associated with perceiving a need for professional help among adolescents in the More Problems group. However, only parental status was significantly associated with perceiving a need for professional help among those in the Comparable Problems group. The relationships between each of these socio-demographic characteristics and perceiving a need for professional help were then investigated through logistic regression analyses among both problem recognition groups for completeness.

Table 7.1

Adolescents who perceived a need for professional help (%) for each category of the socio-demographic characteristics, among adolescents in the Comparable Problems group[a] and the More Problems group[b]

	Comparable Problems group[a]			More Problems group[b]		
	n	% Perceived need for prof. help	$\chi^2_{(df)}$	*n*	% Perceived need for prof. help	$\chi^2_{(df)}$
Gender						
Male	495	9	$.52_{(1)}$	362	28	$8.92_{(1)}$**
Female	707	10		639	38	
Language spoken at home						
English	1054	13	$1.39_{(2)}$	11	36	$.46_{(2)}$
English & another language	134	12		139	36	
Another language	8	9		849	34	
Parental status						
Parents living together	783	7	$18.15_{(4)}$**	571	31	$8.99_{(4)}$
Separated or divorced	342	13		347	38	
One or more parent deceased	25	16		33	46	
Parents never lived together	18	6		17	18	
Another parental situation	31	23		27	37	
Mother‟s paid employment						
Full time	457	9	$.56_{(3)}$	413	32	$9.02_{(3)}$*
Part time	393	10		291	32	
Not working	321	8		257	41	
Retired	17	6		18	50	
Father‟s paid employment						
Full time	926	9	$.87_{(3)}$	696	32	$9.68_{(3)}$*
Part time	129	10		135	39	
Not working	90	9		87	38	
Retired	24	4		26	58	

Note. Prof. = professional; Subscript numbers represent degrees of freedom for each analysis.

[a] Adolescents who perceived they had emotional or behavioural problem, but not more than their peers.

[b] Adolescents who perceived they had more emotional or behavioural problems than their peers.

*p<.05,**p<.01,***p<.001.

Logistic regression analyses

To further investigate the relationships between socio-demographic characteristics and perceiving a need for professional help, logistic regression analyses were performed among the Comparable Problems group (adolescents who perceived they had emotional or behavioural problems but not more problems than their peers), and the More Problems group (those who perceived they had more emotional or behavioural problems than their peers). For each sub-group of adolescents, the categories of the (binary) outcome variable were coded as:

1 = Perceived a need for professional help, and

0 = Did not perceive a need for professional help.

Relationships between socio-demographic characteristics and perceiving a need for professional help among adolescents in the Comparable Problems group

Results of the univariate (unadjusted) logistic regression analyses

Table 7.2 reports the results of the univariate (unadjusted) logistic regression analyses with each socio-demographic characteristic entered individually as a predictor of perceiving a need for professional help among adolescents in the Comparable Problems group. Gender and parents‟ employment status categories were not significantly associated with perceiving a need for professional help. However, having parents who were separated or divorced or who lived in another (unspecified) parental situation was significantly associated with perceiving a need for professional help among this group of adolescents.

Table 7.2

Results of univariate (unadjusted) logistic regression analyses with socio-demographic characteristics as predictors of perceiving a need for professional help among adolescents in the Comparable Problems group[a]

Socio-demographic characteristics	*n*	*B*	*SE*	*OR*	95% *CI*	*p* value[†]
Gender						
Male	495			1.00		
Female	707	.15	.56	1.17	.78-1.74	.453
Parental status						
Parents living together	783			1.00		
Separated or divorced	342	.67	.21	1.95	1.29-2.97	.002
One or more parent deceased	25	.93	.56	2.52	.84-7.60	.101
Parents never lived together	18	-.25	1.04	.78	.10-5.96	.810
Other parental situation	31	1.35	.45	3.86	1.59-9.36	.003
Mother‟s paid employment						
Full time	457			1.00		
Part time	393	.06	.24	1.06	.67-1.68	.812
Not working	321	-.10	.26	.91	.55-1.51	.707
Retired	17	-.49	1.04	.62	.08-4.77	.644
Father‟s paid employment						
Full time	926			1.00		
Part time	129	.08	.31	1.08	.59-2.00	.804
Not working	90	-.06	.39	.94	.44-2.01	.875
Retired	24	-.87	1.03	.42	.06-3.14	.398

Note. *B*=Unstandardised regression coefficient; *SE*=Standard Error; *OR* = Odds ratio; *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

[a] Adolescents who perceived they had emotional or behavioural problems, but not more than their peers.

[†] *p* value is based on a comparison of the appropriate estimate with the "reference" category.

Compared to adolescents with parents who lived together, adolescents with separated or divorced parents had nearly double the odds of perceiving a need for professional help. Furthermore, adolescents with parents who lived in another (unspecified) situation had nearly four times the odds of perceiving a need for professional help, although this result was based on a very small group of adolescents who were likely to be from a diverse range of parental situations (excluding the other parental status categories assessed in the survey).

Results of the multivariable analysis

To investigate the unique contribution of these parental status categories in explaining the variance in perceiving a need for professional help independent of the other socio-demographic characteristics, a multivariable analysis was performed (see Table 7.3). The model consisting of the four predictor variables was had limited ability to reliably distinguish between adolescents who did and did not perceive a need for professional help, χ^2 (11, n= 1157) = 19.07, p=.060. As evident from Table 7.3, the results of the multivariable analysis did not differ from those found in the univariate analyses, with the same two parental categories remaining significantly associated with the outcome variable. These results indicate that these parental status categories and the other socio-demographic characteristics explained little common variance in the outcome variable.

Table 7.3

Results of the multivariable logistic regression analysis with socio-demographic characteristics as predictors of perceiving a need for professional help among adolescents in the Comparable Problems group[a]

n=1157	*n*	*B*	*SE*	Wald test (z-ratio)	*OR*	95% *CI*	*p* value[†]
Gender							
Male	477				1.00		
Female	680	.19	.21	.82	1.21	.80-1.85	.365
Parental status							
Parents living together	779				1.00		
Separated or divorced	318	.67	.22	9.09	1.96	1.27-3.03	.003
One or more parent deceased	18	1.11	.66	2.85	3.04	.84-11.05	.092
Parents have never lived together	15	.00	1.05	.00	1.00	.13-7.89	.997
Other parental situation	27	1.64	.47	12.08	5.18	2.05-13.09	.001
Mother‟s paid employment							
Full time	447				1.00		
Part time	388	.05	.24	.04	1.05	.65-1.68	.852
Not working	306	-.08	.27	.10	.92	.55-1.55	.758
Retired	16	-.20	1.11	.03	.82	.09-7.17	.858
Father‟s paid employment							
Full time	920				1.00		
Part time	126	-.25	.35	.51	.78	.39-1.54	.477
Not working	89	-.30	.40	.55	.74	.34-1.64	.458
Retired	22	-.78	1.09	.51	.46	.05-3.89	.474

Note. B= Unstandardised regression coefficient; *SE*=Standard error; *OR* = Odds ratio; *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

[a] Adolescents who perceived they had emotional or behavioural problems, but not more than their peers.

[†] *p* value is based on a comparison of the appropriate estimate with the “reference” category.

Results of the multivariable analysis adjusting for covariates (mental health problems)

It is possible that some of these previous findings were due to the fact that there were higher levels of mental health problems among adolescents from some of these socio-demographic categories. Therefore, the associations between adolescents‟ socio-demographic characteristics and perceiving a need for professional help were also examined adjusting for levels of mental health symptoms (SDQ total difficulties score, CESD score and Anxiety score). Results adjusting for the SDQ total difficulties score, CESD score and Anxiety score simultaneously are reported in Table 7.4 and those adjusting for each of these scores individually are described in Appendix B (see Table B8). Gender and mother‟s and father‟s paid employment status were also included in these analyses for completeness.

The model consisting of the seven predictor variables was able to distinguish reliably between adolescents who did and did not perceive a need for professional help, χ^2 (14, n = 1123) = 93.35, p<.001. Furthermore, the model explained 17.5% of the variance in the outcome variable. Therefore these results indicate the inclusion of adolescents‟ levels of mental health problems greatly improved the model.

The results did not differ from those found in the univariate (unadjusted) analyses or the multivariable analysis with all socio-demographics entered as predictors, with the same parental status categories still significantly associated with perceiving a need for professional help. While adjusting for level of mental health symptoms produced a small decrease in the odds ratio estimate for adolescents with parents who were separated or divorced, the odds ratio remained significantly greater than 1. These results suggest the parental status category “having parents who were separated or divorced” explained a small amount of common variance in the outcome variable with adolescents‟ level of mental

health problems. However, adolescents with divorced or separated parents were still significantly more likely than those with parents living together to perceive a need for professional help beyond that explained by their levels of mental health symptoms.

Adjusting for levels of mental health problems produced a large increase in the odds ratio estimate for the small group of adolescents with parents who lived in another (unspecified) situation. Once again, this result is based on a very small number of adolescents from a diverse range of parental situations. These results confirm the previous finding that the only meaningful difference evident between adolescents who did or did not perceive a need for professional help in terms of their socio-demographic characteristics was that adolescents with divorced or separated parents were more likely to perceive a need for professional help compared to those with parents who lived together.

Table 7.4

Results for multivariable logistic regression analysis of perceiving a need for professional help adjusting for levels of mental health problems[a] among adolescents in the Comparable Problems group[b]

n=1123	*n*	*B*	*SE*	Wald test (z-ratio)	*OR*	95% *CI*	*p* value[†]
Gender							
Male	461				1.00		
Female	662	.09	.24	.14	1.09	.69-1.74	.709
Parental status							
Parents living together	759				1.00		
Separated or divorced	306	.55	.24	5.23	1.73	1.08-2.77	.022
One or more parent deceased	17	1.34	.73	3.40	3.81	.92-15.78	.065
Parents never lived together	15	-.01	1.08	.00	.99	.12-8.23	.992
Other parental situation	26	1.92	.54	12.50	6.82	2.35-19.79	<.001
Mother‟s paid employment							
Full time	431				1.00		
Part time	377	.10	.37	.15	1.11	.67-1.83	.697
Not working	299	-.22	.47	.56	.80	.45-1.43	.456
Retired	16	-.60	1.09	.27	.55	.06-5.26	.602
Father‟s paid employment							
Full time	897				1.00		
Part time	121	-.38	.37	1.04	.69	.33-1.41	.307
Not working	84	-.52	.47	1.25	.60	.24-1.48	.264
Retired	21	-.45	1.09	.17	.64	.08-5.43	.680

Note. *B*= Unstandardised Regression Coefficient; *SE*=Standard error; *OR* = Odds ratio; *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

[a] Mental health symptoms were the CESD score, SDQ total difficulties score and Anxiety score.

[b] Adolescents who perceived they had emotional or behavioural problems, but not more than their peers.

[†] *p* value is based on a comparison of the appropriate estimate with the “reference” category.

Relationships between socio-demographic characteristics and perceiving a need for professional help among adolescents in the More Problems group

The previous analyses were repeated among adolescents in the More Problems group.

Results of univariate (unadjusted) logistic regression analyses

Results of univariate logistic regression analyses conducted among the adolescents in the More Problems group are reported in Table 7.5. As evident from the odds ratio, females were significantly more likely than males (*OR*=1.54) to perceive a need for professional help. For parental status, only adolescents with parents who were separated or divorced were found to be significantly more likely (*OR*=1.32) than those with parents who lived together to perceive a need for professional help. Adolescents with mothers who were not working in paid employment were significantly more likely (*OR* =1.50) than those with mothers who were in full time paid employment to perceive a need for professional help.

Adolescents with fathers who were retired had almost three times the odds of perceiving a need for professional help compared to those with fathers who were in full time paid employment. However, this result was driven by a very small number of adolescents. Therefore, as none of the other father‟s paid employment categories were significantly associated with perceiving a need for professional help, these results provide little evidence that father‟s paid employment status had a significant role in predicting whether adolescents did or did not perceive a need for professional help.

Table 7.5

Results of univariate (unadjusted) logistic regression analyses with socio-demographic characteristics as predictors of perceiving a need for professional help among adolescents in the More Problems group[a]

Socio-demographic characteristics	*n*	*B*	*SE*	*OR*	95% *CI*	*p* value[†]
Gender						
Male	362			1.00		
Female	639	.43	.14	1.54	1.17-2.04	.002
Parental status						
Parents living together	571			1.00		
Separated or divorced	347	.32	.14	1.32	1.04-1.82	.027
One or more parent deceased	33	.61	.36	1.85	.91-3.73	.091
Parents never lived together	17	-.75	.64	.47	.13-1.67	.244
Other parental situation	27	.26	.41	1.30	.58-2.89	.522
Mother‟s paid employment						
Full time	413			1.00		
Part time	291	.02	.16	1.02	.74-1.41	.892
Not working	257	.41	.17	1.50	1.09-2.08	.014
Retired	18	.78	.48	2.18	.84-5.61	.107
Father‟s paid employment						
Full time	696			1.00		
Part time	135	.29	.20	1.34	.91-1.96	.135
Not working	87	.27	.24	1.31	.82-2.07	.258
Retired	26	1.07	.41	2.91	1.32-6.44	.008

Note. B=Unstandardised regression coefficient; SE=Standard error; *OR* = Odds ratio; *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

[a] Adolescents who perceived themselves to have more emotional or behavioural problems than their peers.

[†] *p* value is based on a comparison of the appropriate estimate with the "reference" category.

Results of the multivariable analysis

To investigate the unique contribution of each of the socio-demographic characteristics in explaining the variance in perceiving a need for professional help independent of each other, the socio-demographic characteristics were also subjected to a multivariable logistic regression analysis adjusting for the effects of each other (see Table 7.6). The model with the four predictor variables was able to distinguish between adolescents who did and did not perceive a need for professional help, χ^2 (11, n = 928) = 28.00, p<.01. However, the variance explained in the outcome variable was very small at 4.1% . Furthermore, prediction success of the model was 66.1%, which barely improved on the null model (65.8%). The results of the multivariable analysis did not greatly differ from those found for the univariate analyses, indicating the socio-demographic characteristics explained little common variance in the outcome variable.

Table 7.6

Results of the multivariable logistic regression analysis with socio-demographic characteristics as predictors of perceiving a need for professional help among adolescents in the More Problems group[a]

n=928	*n*	*B*	*SE*	Wald test (*z*-ratio)	*OR*	*95% CI*	*p* value[†]
Gender							
Male	317				1.00		
Female	578	.37	.15	5.99	1.45	1.08-1.94	.014
Parental status							
Parents living together	540				1.00		
Separated or divorced	302	.31	.15	4.11	1.36	1.01-1.83	.043
One or more parent deceased	18	.62	.47	1.75	1.86	.74-4.64	.186
Parents never lived together	13	-1.09	.78	1.94	.34	.07-1.56	.164
Other parental situation	22	.12	.45	.07	1.12	.47-2.71	.794
Mother‟s paid employment							
Full time	377				1.00		
Part time	274	-.01	.17	.01	.99	.70-1.39	.935
Not working	229	.38	.18	4.53	1.46	1.03-2.07	.033
Retired	15	.40	.54	.55	1.49	.52-4.29	.459
Father‟s paid employment							
Full time	664				1.00		
Part time	131	.15	.20	.51	1.16	.78-1.72	.476
Not working	79	.06	.25	.06	1.07	.65-1.74	.801
Retired	21	.89	.45	3.94	2.44	1.01-5.89	.047

Note. B = Unstandardised regression coefficient, *SE*=Standard Error; *OR* = Odds ratio, *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

[a] Adolescents who perceived themselves to have more emotional or behavioural problems than their peers.

[†] *p* value is based on a comparison of the appropriate estimate with the “reference” category.

Results of the multivariable analysis adjusting for covariates (mental health problems)

A further multivariable analysis was conducted with all socio-demographic characteristics entered as predictors of the outcome variable simultaneously adjusting for adolescents‟ levels of mental health problems (the SDQ total difficulties score, CESD score and Anxiety score), with results reported in Table 7.7. These analyses determined whether the significant associations found between adolescents‟ socio-demographic characteristics and perceiving a need for professional help persisted beyond that explained by adolescents‟ levels of mental health problems. Analyses were also conducted adjusting for each of these scores individually with results described in Appendix B (see Table B9). When these results differ to those found adjusting for the scores simultaneously, comments are made in the text.

The model was able to reliably distinguish between adolescents who did and did not perceive a need for professional help, χ^2 (14, n = 895) = 133.46, p<.001. The variance explained in the outcome variable exceeded that of the model consisting of only the socio-demographic characteristics (4.1%) at 19.2%. Furthermore, prediction success of the model was 71.3%, which improved on the null model (66.7%) and also the model consisting of only the socio-demographic characteristics (66.1%). These results indicate that the addition of adolescents‟ levels of mental health problems in the model substantially improved the model.

Table 7.7

Results for multivariable logistic regression analysis with socio-demographic characteristics as predictors of perceiving a need for professional help, adjusting for covariates (levels of mental health symptoms[a]) among adolescents in the More Problems group[b]

n=895	*n*	*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	[†] *p* value
Gender							
Male	317				1.00		
Female	578	.29	.17	2.88	1.34	.96-1.87	.090
Parental status							
Parents living together	540				1.00		
Separated or divorced	302	.35	.17	4.44	1.42	1.03-1.96	.035
One or more parent deceased	18	.41	.53	.62	1.51	.54-4.23	.431
Parents never lived together	13	-1.08	.81	1.76	.34	.07-1.68	.185
Other parental situation	22	.03	.49	.00	1.03	.39-2.69	.954
Mother"s paid employment							
Full time	377				1.00		
Part time	274	-.08	.19	.17	.93	.64-1.34	.683
Not working	229	.35	.20	3.14	1.41	.96-2.08	.076
Retired	15	.25	.60	.17	1.28	.40-4.17	.678
Father"s paid employment							
Full time	664				1.00		
Part time	131	.04	.22	.03	1.04	.67-1.60	.868
Not working	79	-.06	.28	.05	.94	.55-1.61	.826
Retired	21	.94	.50	3.52	2.56	.96-6.86	.061

Note. B=Unstandardised regression coefficient; *SE*=Standard Error; *OR* = Odds ratio; *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

[a] SDQ total difficulties score, CESD score and Anxiety score.

[b] Adolescents who perceived themselves to have more emotional or behavioural problems than their peers.

[†] *p* value is based on a comparison of the appropriate estimate with the "reference" category.

Adjusting simultaneously for adolescents‟ scores on the SDQ, CESD and Anxiety scale, altered the odds ratio estimates for all socio-demographic characteristics, but only to a small extent. In addition, results were no longer statistically significant for being of a female gender, having mothers who were not working in paid employment and having fathers who were retired. Adjusting for the scores individually produced slightly different results (See Table B9 Appendix B); however, overall, only the association between having parents who were separated or divorced (as opposed to having parents who lived together) and perceiving a need for professional help persisted after adjusting for adolescents‟ levels of mental health symptoms either individually or simultaneously. These results indicate levels of mental health symptoms did not explain this association, but did explain the significant associations found between being female, having mothers who were not working in paid employment and having fathers who were retired and perceiving a need for professional help.

Discussion

No previous studies have examined the relationships between socio-demographic characteristics and perceiving a need for professional help among the groups assessed in this study: adolescents who perceived they had more emotional or behavioural problems than their peers and those who perceived they had emotional or behavioural problems, but not more than their peers. It is, perhaps, not surprising that the results of this study differed slightly to those of previous studies (Saunders et al., 1994; Sears, 2004). Specifically, there were few significant associations found between socio-demographic characteristics and perceiving a need for professional help among adolescents who perceived they had emotional or behavioural problems, but not more than their peers.

Gender

Saunders et al. (1994) found that females were more likely than males to perceive a need for professional help when examined among adolescents who perceived they had emotional, behavioural or mental health problems. In contrast, Sears (2004) found that there was no difference in the likelihood that males and females perceived a need for professional help when examined among adolescents who reported they had emotional, behavioural or *physical* problems. The inclusion of physical problems in Sears‟ study may have obscured the gender differences in perceiving a need for professional help that may only occur in relation to emotional, behavioural and/or mental health problems and not physical problems. Consistent with Saunders et al., the results of this chapter indicate that there was a gender difference in perceiving a need for professional help. However, this association was found only among adolescents who perceived they had more emotional or behavioural problems than their peers. Furthermore, this association became weak after adjusting for adolescents‟ levels of depression (CESD score) and anxiety (Anxiety score), such that females were no longer significantly more likely than males to perceive a need for professional help. While these results offer some support for Hypothesis 7.1, i.e., that females are more likely than males to perceive a need for professional help, they additionally suggest that levels of mental health problems explained the gender difference in perceiving a need for professional help found among adolescents who perceived they had more problems than their peers.

Language spoken at home

Hypothesis 7.2 was not supported by the results of this study. Adolescents from English speaking backgrounds and those from non-English speaking background were equally likely to perceive a need for professional help. This finding was observed among both

problem recognition groups. This is consistent with findings of a study conducted by Saunders et al. (1994) who found that „race" (non-Caucasian versus Caucasian) was not significantly associated with perceiving a need for professional help for emotional, behavioural and mental health problems. Similar to the current study, Saunders et al. examined the relationship between race and perceiving a need for professional help among those who had attained the initial stage of help-seeking i.e. perceived themselves to have emotional, behavioural or mental health problems. Therefore, it may be that after accounting for the difference in problem recognition by race or coming from a non-English speaking background, there is no difference in subsequent stages of help-seeking by race or coming from a non-English speaking background.

Parental status

Hypothesis 7.3 was supported by the results of this chapter. Adolescents from families where parents were divorced or separated were significantly more likely than those with parents who lived together to perceive a need for professional help among both problem recognition groups. Furthermore, the significance and strength of these associations persisted after adjusting for adolescents" levels of mental health symptoms indicating that levels of mental health symptoms did not explain these associations.

This finding contrasts with those of both Saunders et al. (1994) and Sears (2004). The results of their studies indicated that parental status was not significantly associated with perceiving a need for professional help, although different assessment methods may have contributed to this difference in results. For example, each of these studies assessed parental status slightly differently and each of the comparative studies assessed a wider age group of adolescents from school Years 7 to 12. In contrast, this study assessed adolescents from only one school year (Year 8 only). Parental status may have more of an impact on

the help-seeking behaviour of younger adolescents, as they may be more sensitive to their current family situation than older adolescents.

Perhaps the combined effect of experiencing mental health problems in addition to a disrupted family situation may intensify adolescents‟ perceptions of need for professional help beyond that explained by their levels of mental health symptoms. Alternatively, adolescents may feel more comfortable acknowledging a need for professional help for their emotional or behavioural problems when they perceive their problems to be caused by external factors, such as the family situation. The family situation may allow them to acknowledge they need professional help in a way that is less threatening, e.g., they won‟t be perceived as vulnerable as the family situation (parental divorce or separation) makes it more understandable or justifiable that they may require professional help.

Parental paid employment

There was little evidence to support Hypothesis 7.4 in the results of this study. The significant associations found between parents‟ paid employment status categories and perceiving a need for professional help did not persist beyond that explained by adolescents‟ levels of mental health problems.

Summary

It is noteworthy that the models containing variables of adolescents‟ levels of mental health problems in addition to socio-demographic characteristics explained substantially more variance in the outcome variable than the models consisting only of socio-demographic characteristics. These results confirm that higher levels of mental health problems are strongly related to a greater likelihood of perceiving a need for professional help (as reported in Chapter 6). The only meaningful significant association that was found between

socio-demographic categories and perceiving a need for professional help that was not explicable by levels of mental health symptoms, was the significant association found between having parents who were separated or divorced and perceiving a need for professional help.

Subsidiary analyses

Further exploratory analyses were conducted with all variables from Chapter 6 and 7, i.e., socio-demographic characteristics, levels of mental health problems and psychosocial variables, as predictors of perceiving a need for professional help, using both forwards and backwards stepwise logistic regression analyses. These analyses determined the minimal number of predictors of perceiving a need for professional help among adolescents from the Comparable Problems group and those from the More Problems group.

Results of stepwise analyses among the Comparable Problems group

For adolescents in the Comparable Problems group, both forward and backward logistic regression analyses identified the same variables as significantly associated with perceiving a need for professional help. Therefore, these results are only reported once (see Table 7.8). Both models were statistically significant, χ^2 (6, n =1053) = 88.17, p<.001, and explained the same proportion of variance (18%). The prediction success (91.4%) was high but generally uninformative as the prediction success of the null model was also high (91.3%) due to the very small proportion of adolescents who perceived a need for professional help in this group. Both models identified that higher CESD scores and SDQ total difficulties scores significantly increased the likelihood of adolescents perceiving a need for professional help. Both models also identified that adolescents with one or more parents deceased or parents living in another (unspecified) situation were also more likely to

perceive a need for professional help. However, as discussed earlier in the results, these findings were based on a very small number of adolescents.

Table 7.8

Results of stepwise logistic regression analyses (forwards and backwards selection) of the outcome variable " perceiving a need for professional help" among adolescents in the Comparable Problems group[a]

n=1053	*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	*p* value
CESD	.61	.13	22.41	1.85	1.43-2.38	<.001
SDQ-TOT	.49	.15	10.21	1.64	1.21-2.21	.001
Parental status						
Parents living together				1.00		
Separated or divorced	.37	.25	2.21	1.45	.88-2.38	.137
One or more parent deceased	1.47	.72	4.16	4.35	1.06-17.84	.041
Parents never lived together	[b]			[c]		
Another parental situation	1.65	.54	9.43	5.19	1.82-14.85	.002

Note. B=Unstandardised regression coefficient, *SE*=Standard Error; *OR* = Odds ratio, *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

[a] Adolescents who perceived themselves to have emotional or behavioural problems but not more than their peers.

[b] Large negative number

[c] Not reliably estimable due to very small numbers.

Results of stepwise analyses among the More Problems group

The two procedures (forwards and backwards logistic regression analyses) also yielded similar models among adolescents in the More Problems group. The forwards selection model was statistically significant (see Table 7.9) as was the backwards selection model (see Table 7.10), indicating that both models were able to reliably differentiate between adolescents who did and did not perceive a need for professional help. The variance explained by the forward selection model was 19.2% and prediction success was 71.6% (null model was 66.3%). The backwards selection model explained a similar proportion of variance in the outcome variable at 20%, and prediction success was not improved at 71.4%.

Table 7.9

Stepwise logistic regression analyses (forwards selection) of the outcome variable "perceiving a need for professional help" among adolescents in the More Problems group[a]

n=837	*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	*p* value
CESD score	.46	.09	27.75	1.58	1.33-1.87	<.001
SDQ total difficulties score	.45	.11	17.40	1.56	1.27-1.93	<.001
Initiating relationships subscale	.29	.08	14.70	1.34	1.15-1.55	<.001
Father"s paid employment						
Full time				1.00		
Part time	.17	.22	.62	1.19	.77-1.84	.432
Not working	.19	.27	.49	1.21	.71-2.07	.483
Retired	1.39	.51	7.43	4.01	1.48-10.88	.006

Note. B=Unstandardised regression coefficient, *SE*=Standard Error; OR = Odds ratio, CI = Confidence Interval. Reference category is the first group in each socio-demographic category.

[a] Adolescents who perceived themselves to have more emotional or behavioural problems than their peers.

Both of the procedures identified the CESD score, the SDQ total difficulties score and the Initiating Relationships score (Interpersonal Skills subscale) as significantly increasing the likelihood that adolescents perceived a need for professional help. Both models also identified having a father who was retired (as opposed to having a father in full time paid employment), but as noted earlier, this result was based on a very small number of adolescents (*n*=20), very few of whom perceived a need for professional help. The backwards selection procedure additionally identified being female and the Friend Social Support score (Social Support subscale), although neither of these subscales was found to be significantly associated with perceiving a need for professional help. Moreover, the inclusion of these factors did not produce a substantial increase in the variance explained in the outcome variable or the prediction success of the model.

As found in analyses described in Chapter 6, adolescents with higher scores on the CESD scale and SDQ total difficulties scale were significantly more likely to perceive themselves to need professional help. While adolescents with higher scores on the Initiating Relationships subscale were found to be significantly more likely to perceive a need for professional help in both models, the results shown in Chapter 6 indicated that there was no statistically significant difference on adolescents' Initiating Relationships score between those who did and did not perceive a need for professional help (see Table 6.5). Further analyses revealed this change in significance was due to adjusting for the SDQ total difficulties score and the CESD score in the model.

Table 7.10

Stepwise logistic regression analyses (backwards selection) of the outcome variable "perceiving a need for professional help" among adolescents in the More Problems group[a]

n=837	*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% *CI*	*p* value
CESD score	.42	.09	22.74	1.53	1.28-1.82	<.001
SDQ total difficulties score	.44	.11	16.27	1.56	1.26-1.93	<.001
Initiating relationships subscale	.34	.08	15.33	1.36	1.17-1.59	<.001
Friends relationships subscale	-.14	.07	3.64	.87	.75-1.00	.056
Gender						
Male				1.00		
Female	.34	.18	3.47	1.41	.98-2.01	.063
Father"s paid employment						
Full time				1.00		
Part time	.15	.22	.43	1.16	.75-1.79	.513
Not working	.16	.28	.33	1.17	.68-2.01	.566
Retired	1.38	.51	7.27	3.97	1.46-10.82	.007

Note. B=Unstandardised regression coefficient; *SE*=Standard Error; *OR* = Odds ratio, *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

[a] Adolescents who perceived themselves to have more emotional or behavioural problems than their peers.

Overall summary of the factors associated with perceiving a need for professional help

Overall, socio-demographic characteristics explained only a small proportion of variance in perceiving a need for professional help. Furthermore, the most important socio-demographic predictor of perceiving a need for professional help was having parents who were separated or divorced and this was not explained by higher levels of mental health problems among those adolescents with parents who were separated or divorced. The results shown in Chapter 5 indicated that socio-demographic characteristics were important in determining adolescents‟ perceptions they had emotional or behavioural problems, beyond that explained by their levels of mental health symptoms. Therefore, these results suggest that the relationship between socio-demographic characteristics and help-seeking behaviour is primarily confined to the initial stage of help-seeking behaviour, "perceiving emotional or behavioural problems".

Adolescents‟ levels of total difficulties (SDQ total difficulties score), depression (CESD score) and anxiety (Anxiety scale) showed strong associations with perceiving a need for professional help that were not explained by levels of psychosocial functioning. However, anxiety levels did not account for any unique variance in the outcome variable after adjusting for SDQ total difficulties score and the CESD score. The results also indicated that having higher levels of any type of mental health problems, whether internalising or externalising in nature, increased the likelihood of perceiving a need for professional help. This pattern of results was reminiscent of those found with problem recognition.

The simple analyses described in Chapter 6 indicated there was a significant difference between adolescents who did and did not perceive a need for professional help on some psychosocial variables, although the magnitude of these differences was quite small.

Furthermore, the results of the stepwise logistic regression analyses of this chapter confirmed that the role of psychosocial factors in perceiving a need for professional help was minimal.

CHAPTER 8: THE RELATIONSHIP BETWEEN ADOLESCENTS' LEVELS OF MENTAL HEALTH SYMPTOMS AND THEIR REPORTS THEY RECEIVED THE HELP THEY NEEDED

Introduction

The reader is reminded that in this Chapter and in Chapter 9, reference is made to whether adolescents had "received the help that was needed". This reference is based on adolescents" acknowledgement that they themselves feel they have received help for a self-perceived emotional or behavioural problem for which they had recognised their own need for professional help. For simplicity, the term used is "receiving the help that was needed", although it must be remembered that this is always in the context of the adolescents" self-perception of need and not external (i.e., families, friends or defined by a clinician or diagnostic assessment) perceptions of need.

The previous chapters of this thesis examined the relationships between levels of mental health problems and socio-demographic characteristics and the first and second stages of adolescent help-seeking, namely, problem recognition and perceiving a need for professional help. This chapter examines the relationships between adolescents" level of mental health problems and the last stage of help-seeking assessed in this study, viz., adolescents" reports they received the help they needed.

While many studies have found a relationship between adolescents" levels of mental health symptoms and different indicators of the final stage of help-seeking, e.g., seeking professional help and service attendance, the exact nature of the relationship is unclear. A commonly held perception is that higher levels of mental health problems will prompt help-seeking behaviour; however, there is evidence that some types of mental health

problems may inhibit help-seeking. For example, the results of a study conducted by Saunders et al. (1994) suggested that, while adolescents with higher levels of suicidal ideation were more likely to perceive a need for professional help with their problems, they were less likely to report they had sought professional help. Other studies have also found this negative association between suicidal ideation and adolescents‟ help-seeking intentions (Carlton & Deane, 2000; Deane et al., 2001).

While this negative association has primarily been found between suicidal ideation and adolescents‟ help-seeking intentions or their reports they sought professional help (Barnes et al., 2001; Carlton & Deane, 2000; Deane et al., 2001; Saunders et al., 1994), there is some evidence it may also be observed with other types of mental health problems. Sears (2004) found adolescents who reported they had sought professional help had lower levels of anxiety than those who did not seek professional help. Furthermore, Wilson et al. (2007) found adolescents and young people with higher levels of depression had lower intentions to seek help for a personal emotional problem; however, only from parents and not from professional sources of help.

An aim of this study was to determine whether this negative association may extend to other types of mental health problems and also to adolescents‟ reports they received help appropriate to their perceived need. Therefore, this chapter explores the nature, strength and significance of the associations between levels of total difficulties (SDQ total difficulties score), depression (CESD score) and anxiety (Anxiety score), and adolescents‟ reports they received the help they needed when they had perceived a need for professional help. This analysis is necessarily restricted to adolescents who attained the first two stages of help-seeking assessed in this study, namely, problem recognition and perceiving a need for professional help with these problems, so that the factors that determined whether

adolescents who perceived a need for professional help actually received this help could be identified.

It should be noted that the final stage of help-seeking assessed in this study (receiving the help that was needed) differs from previous studies that have assessed the extent to which adolescents attend services or seek professional help (Barker & Adelman, 1994; Boldero & Fallon, 1995; Gasquet et al., 1997; Santor et al., 2006; Saunders et al., 1994; Schonert-Reichl & Muller, 1996; Sears, 2004). These studies did not ascertain whether adolescents felt that they had received the help they actually perceived themselves to need. This study enables the determination of the factors that may significantly increase or decrease the likelihood that adolescents consider themselves to have received the professional help they felt they needed.

As mentioned in Chapter 4, the results of studies conducted by Zwaanswijk, Van der Ende et al. (2003) and Sears (2004) suggest that different types of problems may be more strongly related to different stages of help-seeking. Both Sears and Zwaanswijk, Van der Ende et al. found that levels of internalising and externalising problems were significantly associated with the final stage of help-seeking assessed in their respective studies. However, Zwaanswijk, Van der Ende et al. additionally found there was no significant association between levels of internalising problems and receiving a referral for mental health services beyond that accounted for by levels of externalising problems. This chapter further investigates whether different types of mental health symptoms (internalising or externalising problems) are more strongly associated with adolescents' reports they received the help they perceived themselves to need, conditional on the fact that they have at least acknowledged they have emotional or behavioural problems and a need for professional help with such problems.

Proportion of adolescents who reported they received the help they needed

Consistent with methods used by both Sears (2004) and Saunders et al. (1994), in this chapter, adolescents‟ reports of receiving the help that was needed were examined among those who perceived themselves to have emotional or behavioural problems and a need for professional help with these problems. This enabled the determination of the factors that may increase or decrease the likelihood that adolescents who perceived a need for professional help actually received the help they had perceived themselves to need. However, as mentioned previously, another group of adolescents also reported they had received the help they needed when they had not perceived a need for professional help. As discussed in Chapter 2, it is likely that these adolescents received this help from an informal source. These adolescents are investigated in Chapter 10 in subsidiary analyses. The main focus of this chapter is to determine the factors that were significantly associated with adolescents‟ reports they had received the help they needed among the 457 adolescents who recognised they needed professional help for their self-perceived emotional or behavioural problems.

Hypotheses

Based on the results of previous studies that found negative associations between suicidal ideation and anxiety and adolescents‟ reports they sought professional help when they had also perceived a need for professional help for their problems (Saunders et al., 1994; Sears, 2004), it is hypothesised that:

Of adolescents who perceived a need for professional help, those with higher scores on the SDQ total difficulties scale, the CESD scale and the Anxiety scale will be less likely to report they received the help they needed (Hypothesis 8.1).

It is likely that psychosocial variables and mental health problems (SDQ total difficulties scale, the CESD scale and the Anxiety scale) explain some common variance in adolescents‟ help-seeking behaviour. Therefore, the associations specified in Hypothesis 8.1 will also be examined adjusting for psychosocial variables (interpersonal skills, constructive problem solving ability and social support) to determine whether they explain the significant associations found between levels of mental health symptoms and adolescents‟ reports they received the help they needed.

The results of the study conducted by Zwaanswijk, Van der Ende et al. (2003) suggested that adolescents with higher levels of internalising problems may have been less likely to have received a referral for mental health services than those with higher levels of externalising problems. The possibility that this pattern also extends to adolescents‟ perceptions they received the help they needed is investigated in this chapter. Based on findings of Zwaanswijk, Van der Ende et al. (2003), it is hypothesised that:

Of adolescents who perceived a need for professional help, those with higher levels of internalising (emotional) symptoms will be less likely than those with higher levels of externalising symptoms (conduct problems, peer problems and hyperactivity) to report they received the help they needed (Hypothesis 8.2).

As in previous chapters, the positively worded Prosocial Behaviour subscale, which assesses adolescents‟ levels of Prosocial Behaviour, will also be included in the analyses with the other SDQ subscales for completeness.

Chapter structure

Chapter 8 is similar in structure to previous chapters. First, the mean scores and standard deviations for the SDQ total difficulties scale and subscales, the CESD scale, the Anxiety scale and the psychosocial scales and subscales were compared between adolescents who did and did not report they had received the help they needed. A series of independent samples t-tests were also conducted to determine whether there were statistically significant differences in adolescents‟ scores on the SDQ total difficulties scale and subscales, CESD scale, Anxiety scale and psychosocial scales and subscales between adolescents who did and did not report they had received help they needed.

A series of univariate and multivariable logistic regression analyses were then conducted to further explore the relationships between these variables. These analyses tested the strength and significance of the associations between the SDQ total difficulties score, CESD score and Anxiety score and adolescents‟ reports they received the help they needed and also determined whether the strength and statistical significance of these associations were maintained after adjusting for scores on the psychosocial scales and subscales. These analyses also determined whether each SDQ subscale score was more strongly associated with adolescents‟ reports they had received the help they needed.

Results of independent samples t-tests

SDQ total difficulties scale and subscales, CESD scale and Anxiety scale

For each scale and subscale in Table 8.1, among adolescents who perceived a need for professional help, those who reported they had received the help they needed had lower mean scores than those who reported they did not receive the help they needed, as hypothesised. There was one exception, however, which was the positively worded Prosocial Behaviour scale. For the Prosocial Behaviour subscale, adolescents who reported they had received the help they needed had a higher mean Prosocial Behaviour score than those who did not.

A series of t-tests revealed that there were only significant differences evident between the mean scores of the SDQ total difficulties scale, the CESD scale and the SDQ subscales of Conduct problems and Hyperactivity. Effect sizes are not reported with these results, as the results of the logistic regression analyses reported later in this chapter report the quantitative measures of the associations between these variables and adolescents‟ reports they received the help they needed.

This pattern of results is in the opposite direction to that found with previous stages of help-seeking, as hypothesised (Hypothesis 8.1). For example, in previous chapters, adolescents who perceived themselves to have emotional or behavioural problems and those who perceived a need for professional help with these problems had higher scores on these scales and subscales (excluding the Prosocial Behaviour subscale) than those who did not perceive themselves to have emotional or behavioural problems or a need for professional help. However, as evident from Table 8.1, adolescents who reported having received the help they needed had lower scores on each of these scales and subscales

(excluding the Prosocial Behaviour subscale) than those who reported they had not received they help they needed.

Table 8.1

Mean (SD) scores of adolescents who did and did not receive the help they needed, for the CESD scale, Anxiety scale, SDQ total difficulties scale and SDQ subscales among adolescents who perceived a need for professional help

Scale	Received the help they needed		*t* (*df*)
	Yes (*n*= 281)	No (*n*=175)	
SDQ Tot.	18.07 (6.08)	19.74 (6.05)	2.85** (450)
SDQ subscales			
Emotional symptoms	5.53 (2.71)	5.83 (2.55)	1.20 (450)
Conduct problems	3.98 (1.98)	4.43 (2.37)	2.18* (415)
Hyperactivity	5.32 (2.13)	5.87 (2.34)	2.53* (450)
Peer Problems	3.24 (2.18)	3.61 (2.40)	1.64 (450)
Prosocial behaviour	7.05 (2.06)	6.82 (2.28)	-1.11 (450)
CESD	27.98 (13.87)	31.71 (13.22)	2.83** (439)
Anxiety	11.17 (5.62)	12.02 (5.96)	1.50 (450)

Note. Effect sizes are not reported as the results of the logistic regression analyses reported later in this chapter report the quantitative measures of the associations between these variables.

*p<.05,**p<.01,***p<.001.

The “dose-response” nature of the relationships between adolescents‟ scores on the mental health scales and subscales and their reports they had received the help they needed were further investigated in Figures 8.1 and 8.2. These figures depict the percentage of adolescents who reported they had received the help they needed for the standardised scores on these scales and subscales. S*tandardised scores* were computed and used for ease of comparison between the measures (as each had a different range). The positively worded Prosocial Behaviour subscale was not included in these figures as it does not assess problem behaviour.

Figure 8.1 portrays, for those adolescents who perceived a need for professional help, the percentage of adolescents who reported they had received the help they needed for each standardised score on the CESD scale, Anxiety scale and SDQ total difficulties scale. Figure 8.2 portrays, among the same group of adolescents, the percentage of adolescents who reported they had received the help they needed for each standardised score on the SDQ subscales.

Compared to some of the previous stages of help-seeking behaviour examined by this thesis, there was a smaller number of adolescents in this group; therefore, the Figure 8.1 graph consists of numerous peaks and troughs. Despite the variation in the graph, the underlying trend is still evident for each of these scales and subscales in both graphs: as the standardised score increased, the percentage of adolescents who reported they had received the help they needed showed a general decline. Furthermore, this decline was evident in both the lower range of scores and the upper range of scores, such that the proportion declined in an almost linear fashion. For both Figures 8.1 and 8.2, there is little indication of a threshold score above which the percentage of adolescents who reported they had received the help they needed stabilised.

Therefore, while each of the scales and subscales measure different (although related) aspects of mental health, from these figures it is apparent that the proportion of adolescents who reported they had received the help they needed declined with increasing scores at a similar rate. This may be because adolescents‟ reports they had received the help they needed declined at a similar rate for increasing levels of each of the assessed mental health problems. Alternatively, these mental health problems may occur co-morbidly with each other. Therefore, while only one measure may be associated with this decline in adolescents‟ reports they received the help that was needed, because the other problems occur concurrently with this specific problem, it appears they are all associated with this decline. Multivariable logistic regression analyses are conducted in the next section to determine the unique contribution of each of these scales as predictors of receiving help, independent of each other.

While there was no statistically significant difference found between adolescents who did and did not report receiving the help they needed on the Anxiety scale and some of the SDQ subscales, they were still included in the logistic regression analyses for completeness.

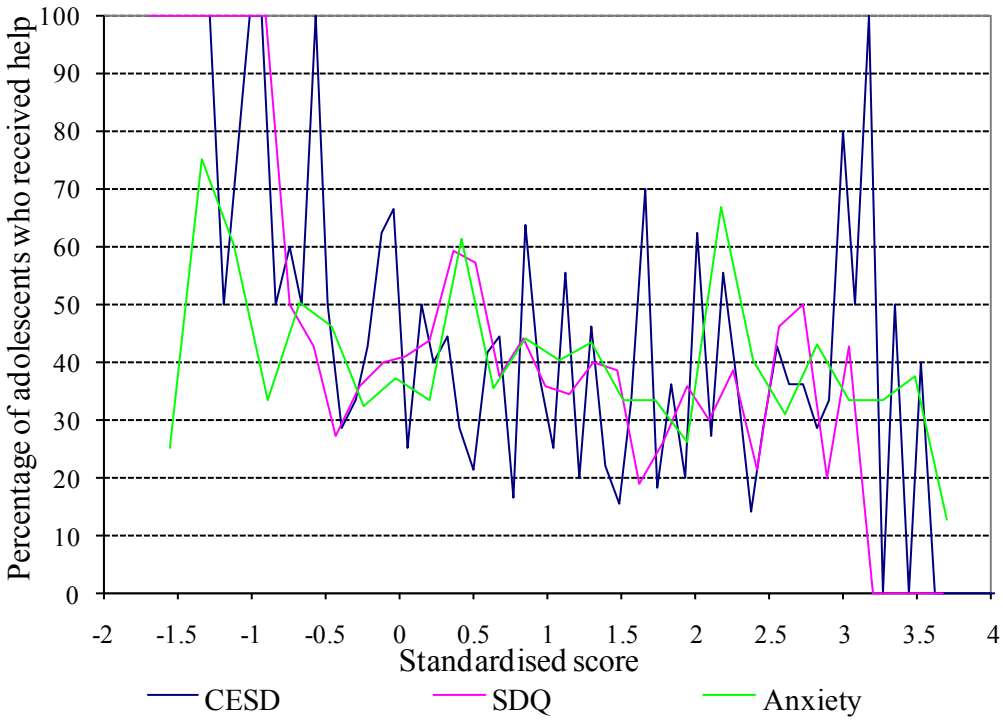

Figure 8.1. The percentage of adolescents who reported they had received the help they needed for each standardised score on the CESD, SDQ and Anxiety scales among adolescents who perceived a need for professional help.

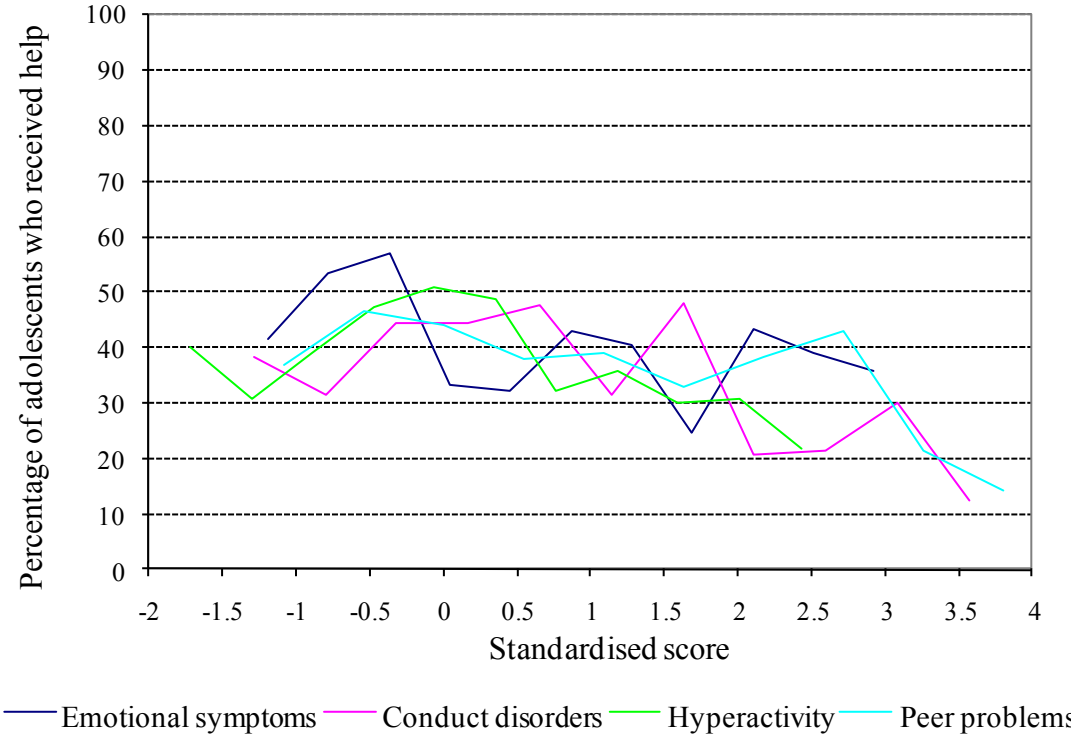

Figure 8.2. The percentage of adolescents who reported they had received the help the needed for each standardised score on the SDQ subscales among adolescents who perceived a need for professional help.

Adolescents‟ mean scores on the psychosocial scales and subscales were examined for adolescents who did and did not report receiving the help they needed (Table 8.2). Adolescents who reported they had received the help they needed had a higher mean score on each of the scales and subscales than adolescents who did not report receiving the help they needed (see Table 8.2). A series of t-tests revealed that there was a statistically significant difference between adolescents who did and did not report they received the help they needed on the mean scores for every scale and subscale in Table 8.2. Furthermore, the magnitude of the difference was "moderate" for the Constructive Problem Solving scale, the Family subscale and the Significant Other subscale, as indicated by the effect size (eta-squared) (Cohen, 1988). However, it was small for the remainder of the scales and subscales.

The direction of these associations is in the opposite direction to that found with the previous stages of help-seeking behaviour. For example, in previous chapters, adolescents who perceived themselves to have emotional or behavioural problems and a need for professional help with these problems reported lower scores on the psychosocial scales and subscales than those who did not perceive themselves to have such problems or a need for professional help. In contrast, in this chapter, adolescents who reported they had received the help they needed had higher scores on these scales and subscales than those who did not report they had received the help they needed. This is similar to the change in direction found for adolescents‟ scores on the SDQ total difficulties scale and subscales, the CESD scale and the Anxiety scale. Furthermore, conceptually, the direction of these associations is consistent with the way in which these factors have been suggested to affect adolescents‟ help-seeking behaviour (Andersen, 1995; Andersen & Newman, 1973; Rickwood et al.,

2005; Srebnik et al., 1996). For example, it is likely that having higher levels of social support, interpersonal skills and constructive problem solving ability would facilitate adolescents‟ help-seeking behaviour.

Table 8.2

Mean (SD) scores of adolescents who did and did not report they received the help they needed for the Constructive Problem Solving scale, Social Support subscales and the Interpersonal Skills subscales among adolescents who perceived a need for professional help

	Received the help they needed		*t* *(df)*	η^2
	Yes (*n*= 281)	No (*n*=175)		
Constructive Problem Solving	25.58 (9.60)	20.18 (10.24)	-5.57*** (450)	.06
Social Support subscales				
Family relations	5.38 (1.38)	4.60 (1.46)	-5.66*** (454)	.07
Friend relations	5.35 (1.40)	4.99 (1.55)	-2.43* (454)	.01
Significant other	5.81 (1.16)	5.15 (1.55)	-5.20*** (440)	.06
Interpersonal Skills subscales				
Initiating relationships	5.64 (2.09)	5.07 (2.35)	-2.71** (391)	.02
Emotional support seeking	6.57 (2.04)	6.14 (2.33)	-1.96* (437)	.01
Asserting influence	5.68 (1.95)	5.17 (2.20)	-2.49* (440)	.01
Self-disclosure	6.06 (1.96)	5.13 (2.32)	-4.50*** (402)	.04
Conflict resolution	5.08 (2.04)	4.41 (2.20)	-3.21** (442)	.02

Note. η^2=eta squared.

*p<.05,**p<.01,***p<.001.

The effect of adjusting for these psychosocial variables in the associations between adolescents‟ mental health symptoms and their‟ reports they received the help they needed is investigated in the logistic regression analyses reported later in this chapter. Specifically, these analyses determined whether scores on the Interpersonal Skills subscales, Social Support subscales and the Constructive Problem solving scale explained the significant associations found between the SDQ total difficulties score, CESD score and the Anxiety score and adolescents‟ reports they received the help they needed.

Logistic regression analyses

To further investigate the relationships between adolescents‟ scores on the SDQ total difficulties scale, the CESD scale and the Anxiety scale and their reports they had received the help they needed, a series of logistic regression analyses were performed. The (binary) outcome variable was coded as follows:

0 = Did not report receiving the help they needed; and

1 = Reported receiving the help they needed.

Similar to previous chapters, standardised scores were used in the logistic regression analyses to allow for comparability across different measures. Each reported odds ratio estimate is therefore the factor by which the odds of adolescents‟ reporting they received the help needed increase with one *Standard Deviation* increase in the predictor. The reported *p*-values are those associated with a maximum likelihood χ^2 and associations were tested on the appropriate degrees of freedom.

SDQ total difficulties scale, CESD scale and Anxiety scale

Table 8.3 reports the results of univariate (unadjusted) logistic regression analyses with the SDQ total difficulties score, the CESD score and the Anxiety score entered separately as predictors of the outcome variable "receiving the help that was needed". It also reports the results of several multivariable logistic regression analyses adjusting both separately and simultaneously (see Table 8.3) for adolescents" scores on the Interpersonal Skills subscales, Social Support subscales and Constructive Problem Solving scale.

The results of the univariate analyses indicated that there was a statistically significant association between the SDQ total difficulties score and the CESD score and receiving the help that was needed (p=.005) [33,34]. The Anxiety score was not significantly associated with receiving the help that was needed (p=.133) [35]. With an increase of one standard deviation in the SDQ total difficulties score, the odds of adolescents reporting they received the help they needed decreased by a factor of 25%. Furthermore with an increase of one standard deviation in the CESD score, the odds of adolescents reporting they received the help they needed decreased by a factor of 20%. The direction of these associations was consistent with that hypothesised (Hypothesis 8.1). However, it should be noted that the variance explained in the outcome variable by each of the scores was only small at 2.4%.

[33] SDQ total difficulties scale, χ^2 (1, n = 452) =8.08.
[34] CES-D, χ^2 (1, n =441) = 7.93.
[35] Anxiety, χ^2 (1, n = 452) = 2.23.

Table 8.3

Results of univariate and multivariable logistic regression analyses (adjusting for scores on psychosocial scales and subscales) of the outcome variable "receiving the help that was needed" among those who perceived a need for professional help

Scale	*n*	Univariate analyses (no covariates)		*p* value	Adjusted for Social Support		*p* value	Adjusted for Interpersonal skills		*p* value	Adjusted for Const. Prob. Solving		*p* value	Adjusted for all psychosocial factors[a]		*p* value
		OR	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*	
SDQ Tot	452	.75	.61-.92	.005	.85	.69-1.06	.149	.81	.64-1.02	.069	.83	.68-1.03	.094	.88	.69-1.12	.282
CESD	441	.79	.68-.93	.005	.88	.74-1.04	.136	.85	.71-1.01	.067	.86	.73-1.02	.090	.91	.75-1.10	.344
Anxiety	452	.89	.77-1.04	.134	.92	.79-1.08	.319	.90	.76-1.07	.249	.91	.78-1.06	.236	.92	.77-1.11	.382

Note. OR = Odds ratio; *CI* = Confidence Interval; SDQ Tot= SDQ total difficulties score.

[a] All psychosocial factors included scores on the Social Support subscales, Interpersonal Skills subscales and the Constructive Problem Solving scale.

After adjusting for scores on each of the psychosocial measures individually or simultaneously, the odds ratio estimate moved closer to 1 and the statistical significance of the findings was reduced for the SDQ total difficulties score and the CESD score (see Table 8.3). These results suggest that the SDQ total difficulties score and the CESD score explained very little unique variance in the outcome variable beyond that shared with scores on the psychosocial scales and subscales. However, it should be noted that the variance in the outcome variable accounted for by either the SDQ total difficulties score and CESD score was only small to begin with. The Anxiety score was not significantly associated with adolescents‟ reports they had received the help they needed in the univariate logistic regression analysis and this result was unchanged by adjusting for the scores on psychosocial scales and subscales.

To determine the unique contribution that the SDQ total difficulties scale, the CESD scale and Anxiety scale had in the outcome variable adjusting for the effects of each other, these three scales were subject to a multivariable logistic regression analysis adjusting for each of the other two scales (see Table 8.4). Furthermore, to determine whether adjusting for adolescents‟ scores on the Social Support subscales, the Interpersonal Skills subscales and Constructive problem solving skills scale had any additional effect on these associations after adjusting for the other two mental health symptoms scales, psychosocial variables were additionally simultaneously adjusted for with results also reported in Table 8.4. Results adjusting for each of the psychosocial variables individually are described in Table B10, Appendix B.

Table 8.4

Results of the multivariate logistic regression analyses of the outcome variable " receiving the help that was needed" among adolescents who perceived a need for professional help, adjusting for the scores on other measures of mental health problems and psychosocial scales and subscales

Scale	Adjusted for other mental health problem scales *n*=433					*p* value	Adjusted for other mental health problems scales and all psychosocial variables[a] *n*=405					*p* value
	B	*SE*	Wald test (*z*-ratio)	*OR*	*95% CI*		*B*	*SE*	Wald test (*z*-ratio)	*OR*	*95% CI*	
SDQ Tot	-.23	.14	2.86	.80	.61-1.04	.091	-.11	.16	.44	.90	.66-1.23	.507
CESD	-.14	.11	1.61	.87	.70-1.08	.205	-.03	.13	.06	.97	.76-1.24	.801
Anxiety	.06	.10	.43	1.07	.88-1.29	.515	-.01	.11	.00	.99	.80-1.24	.958

Note. B= Regression coefficient; *SE*= Standard error; *OR* = Odds ratio per standardised unit in the predictor; *CI* = Confidence Interval.

[a] All psychosocial scales and subscales included Interpersonal skills subscales, Social Support subscales and Constructive Problem solving scale

The model with these three predictors (SDQ total difficulties score, CESD score and Anxiety score) was able to reliably distinguish between adolescents who did and did not report they had received the help they needed, χ^2 (3, n = 433) = 9.71, p<.05. However, variance in the outcome variable explained by these three variables was only 3%, which was only marginally higher than variance explained by the SDQ total difficulties score alone (2.4%) or the CESD score alone (2.4%).

The CESD score and SDQ total difficulties score were no longer significant predictors of receiving the help they needed, indicating the three scales explained common variance in the outcome variable and neither scale explained unique variance after adjusting for scores on the other two scales. The Anxiety score was not significantly associated with adolescents‟ reports they had received the help they needed in the univariate logistic regression analyses and this result was unchanged by adjusting for the scores on the CESD scale and SDQ total difficulties scale.

As the SDQ total difficulties score and CESD score were no longer significant predictors of the outcome variable after adjusting for each other and the Anxiety score, adjusting for adolescents‟ scores on the psychosocial scales and subscales did not have any further impact on the significance of the results. However, the odds ratio estimates moved even closer to 1 after adjusting for scores on these psychosocial scales and subscales (see Table 8.4).

SDQ subscale scores

To investigate whether different types of mental health symptoms were more strongly associated with adolescents‟ reports they received the help they needed, the five individual SDQ subscales were also subjected to univariate (unadjusted) and multivariable logistic

regression analyses (see Table 8.5). The results of the univariate logistic regression analyses indicated that only the Hyperactivity and Conduct Disorders subscales were significantly associated with receiving the help that was needed [36] ($p<.05$). Similar to the associations found with the SDQ total difficulties score and the CESD score, and also the results of the t-tests, the odds ratios indicated that adolescents with higher scores on the Hyperactivity and Conduct Disorders subscales were less likely to report they had received the help they needed. However, only 1.9% and 1.3% of the variance in the outcome variable was explained by scores on the Hyperactivity and Conduct Disorders subscales, respectively. After adjusting for all other SDQ subscale scores, these subscales were also no longer significant predictors of the outcome variable. These results indicate that these scores did not explain any unique variance in the outcome variable after adjusting for the other SDQ subscale scores.

[36] Conduct Disorders χ^2 (1, n = 452) =4.38, Hyperactivity χ^2 (1, n = 452) =6.36.

Table 8.5

Results of univariate and multivariable (for all other SDQ subscales) logistic regression analyses of the outcome variable "receiving the help that was needed" among adolescents who perceived a need for professional help

SDQ subscale	Univariate (unadjusted)						*p* value	Multivariable (adjusted for all SDQ subscales) (*n*=452)					*p* value
	n	*B*	*SE*	Wald test (*z*-ratio)	*OR*	*95% CI*		*B*	*SE*	Wald test (*z*-ratio)	*OR*	*95% CI*	
Emotion symptoms	452	-.11	.09	1.43	.90	.75-1.07	.232	-.03	.10	.10	.97	.80-1.18	.748
Conduct disorders	452	-.19	.09	4.29	.83	.69-.99	.038	-.08	.11	.48	.93	.75-1.15	.488
Hyperactivity	452	-.26	.10	6.25	.77	.63-.95	.012	-.20	.12	2.79	.82	.65-1.04	.095
Peer problems	452	-.13	.08	2.66	.88	.76-1.03	.103	-.09	.08	1.26	.91	.77-1.07	.261
Prosocial behaviour	452	.10	.09	1.22	1.10	.93-1.32	.269	.04	.10	.16	1.04	.86-1.26	.687

Note. B=Unstandardised regression coefficient; *SE*= Standard Error; *OR*=Odds Ratio; *CI*=Confidence interval.

Discussion

When interpreting the results of this chapter, it is important to note that the final stage of help-seeking in this study was assessed by determining whether adolescents felt they had received the help they needed when they had perceived a need for professional help. Adolescents who did not report they had "received the help they needed" may not have received professional help, or they may have received professional help but felt that it did not fulfil their needs. Therefore, attaining the final stage of help-seeking in this study does not simply reflect service attendance, or the rate at which adolescents sought professional help. Instead, it reflects whether adolescents felt they had received the professional help they had perceived themselves to need, i.e., that they received help *and* it was sufficient. As this is the first study to assess the final stage of help-seeking in this way, the results of this chapter are still interpreted within the context of findings of other studies that have assessed the final stage of help-seeking differently in order to compare and contrast the patterns of help-seeking that have been found across studies.

An interesting finding of this chapter was that less than half of the adolescents who perceived a need for professional help for their emotional or behavioural problems actually reported they had received the help they needed. These results highlight the discrepancy between the proportion of adolescents who feel they need professional help for emotional or behavioural problems and the proportion who actually report they receive the help they need from professional sources.

Mental health problems

The results of this chapter provide some support for Hypothesis 8.1, that is, adolescents with higher scores on the SDQ total difficulties scale, the CESD scale and the Anxiety scale will be less likely to report they received the help they needed. The results indicated that adolescents with higher levels total difficulties (SDQ total difficulties score) and depression (CESD score) were indeed less likely to report that they had received the help they needed, although there was no relationship found with increasing levels of anxiety (Anxiety score). However, together, levels of total difficulties, depression and anxiety explained only a small proportion in the variability that adolescents‟ reported they had received the help they needed, indicating that higher levels of these mental health problems were only weakly related to adolescents‟ reports they had received the help they needed.

Hypothesis 8.2, that adolescents with higher levels of internalising (emotional) symptoms will be less likely than those with higher levels of externalising symptoms (conduct problems, peer problems and hyperactivity) to report they received the help they needed, was not supported by the results of this study. Little of the variability in adolescents‟ reports of receiving help was explained by their levels of internalising or externalising problems. Furthermore, only two of the SDQ subscales that assessed externalising problems (Conduct Disorders subscale and the Hyperactivity subscale) had a significant association with adolescents‟ reports they had received the help they needed when they had perceived a need for professional help. Therefore these results did not offer support for Hypothesis 8.2 and indicate that experiencing any type of mental health problems (whether internalising or externalising in nature) had little contribution to increasing the likelihood that adolescents consider themselves to have received the help they needed from professional sources.

The results of this chapter are consistent with findings of the two previous studies that examined adolescents‟ reports they sought professional help among those who perceived a need for professional help (Saunders et al., 1994; Sears, 2004). For example, Sears found that adolescents who did or did not seek professional help did not differ greatly in respect to their levels of emotional or behavioural adjustment. Furthermore, Saunders et al. found that levels of emotional distress were not significantly associated with adolescents‟ reports they sought professional help. However, they also found that higher levels of suicidal ideation had a significant negative association with adolescents‟ reports they sought professional help.

With the exception of the relationship found between suicidal ideation and seeking professional help (Saunders et al., 1994), the weak relationships found between levels of mental health problems and the final stage of help-seeking in these previous studies (Saunders et al., Sears, 2003) and the present study may be due to a „filtering effect‟. For example, in each of these studies, the associations between levels of mental health problems and adolescents‟ attainment of each stage of help-seeking were examined among adolescents who also attained the previous stages. Therefore, these adolescents had already identified themselves as experiencing a significant level of emotional, behavioural, mental health or physical problems and thus were likely to have higher levels of mental health problems. Conversely, studies that have assessed the relationship between mental health problems and rates of seeking professional help or attending services among a full sample of adolescents often simply contrast those who have sought professional help or attended services with those who have not (Gasquet et al., 1997; Laitinen-Krispijn et al., 1999; Zwaanswijk, Van der Ende et al., 2003). These groups of adolescents would differ more on levels of mental health problems because analyses have not be confined to adolescents who have also attained earlier stages of help-seeking. This may explain why these studies

(Gasquet et al., 1997; Laitinen-Krispijn et al., 1999; Zwaanswijk, Van der Ende et al., 2003) find a strong positive relationship between levels of mental health problems and rates of seeking professional help or service attendance, in contrast to the weak negative relationships found by this study and others (Saunders et al., 1994; Sears, 2004) that have assessed these relationships among adolescents who attained previous stages.

While not strong, the direction of the significant univariate (unadjusted) associations that were found between levels of mental health problems and adolescents‟ reports they received the help they needed were consistent with that hypothesised and warrant further scrutiny. The results of this study suggest that higher levels of total difficulties (SDQ), conduct problems (SDQ), hyperactivity (SDQ) and depression (CESD) may negate the help-seeking behaviour of adolescents who had perceived a need for professional help. These results are similar to those found by Saunders et al. (1994), which suggested that higher levels of suicidal ideation were related to a lower likelihood of seeking professional help when adolescents had perceived a need for professional help. Furthermore, Carlton and Deane (2000) found that adolescents with higher suicidal ideation had lower intentions to seek professional help.

Saunders et al. (1994) suggested that suicidal adolescents encounter co-morbid psychiatric symptoms and diagnoses, e.g., irritability, anger and conduct disorders (Brent, Kolko, Allen, & Brown, 1990) that act as barriers to establishing a therapeutic alliance and that, in the same way, these symptoms may also act as a barrier to seeking professional help. In a similar vein, Carlton and Deane (2000) suggested the negative association they found may also be a result of thought patterns and symptoms associated with suicidal ideation, which could be explained by *help-negation*. As previously noted, *help-negation* pertains to „the refusal to accept or access available helping resources as a likely function or manifestation

of patient hopelessness, pessimism and cynicism regarding the efficacy of treatment‟ (p.499) (Rudd et al., 1995). While these explanations differ, they are similar in that they both suggest that the symptoms associated with adolescents‟ suicidal ideation may inhibit their help-seeking behaviour from professional sources of help and their help-seeking intentions, rather than prompt these behaviours or intentions.

While suicidal ideation was not assessed in this study, the very nature of some of the symptoms assessed in this study (e.g., conduct problems, hyperactivity and depression) may have similarly inhibited the establishment of a therapeutic alliance, which may have negatively affected the efficacy of the treatment that adolescents may have received. Furthermore, these symptoms may have also acted as a barrier to seeking professional help. For example, adolescents with higher levels of depression may have been less likely to perceive that the treatment they would receive from seeking professional help would be beneficial due to negative thoughts and attributions commonly associated with depression. It is likely that these adolescents would not seek professional help and would therefore be less likely to receive the help they need.

It is also important to note that in this study, adolescents‟ perceptions of whether they received the help they needed and their levels of mental health problems (including depression and anxiety) were each assessed at just one point in time. Therefore, causality cannot be assumed in either direction. For example, one cannot assume that higher levels of mental health problems or depression caused adolescents to be less likely to report they received the help they needed. It is also plausible that adolescents who reported they received the help they needed may have reported lower levels of problems because of the positive effects of the help that they received. However, other studies conducted in the area found that adolescents with higher levels of suicidal ideation had lower intentions of

seeking help for suicidal problems (Deane et al., 2001; Wilson et al., 2005). Because these studies assessed help-seeking intentions, i.e., adolescents‟ reports of whether they *would* seek professional help for suicidal problems, the associations found by these studies are unlikely to be due to the positive effects of intervention.

It is also possible that adolescents‟ levels of psychosocial functioning explained the negative associations found between levels of total difficulties (SDQ total difficulties) and depression (CESD) and their reports they received the help they needed. The results of this study indicated that levels of total difficulties (SDQ total difficulties score) and depression (CESD score) did not explain any unique variance in adolescents‟ reports they received the help they needed, beyond that explained by their levels of social support, interpersonal skills and constructive problem solving ability. Higher levels of total difficulties and depression are likely to be related to lower levels of social support, interpersonal skills and constructive problem solving ability and the correlations of Chapter 3 confirm these relationships. It is likely that having lower levels of social support, interpersonal skills and constructive problem solving ability inhibited adolescents‟ help-seeking behaviour and, thus, the likelihood that adolescents received the help they needed. However, as previously noted, the associations between adolescents‟ levels of total difficulties and depression and their reports they received the help they needed were not strong to begin with.

In summary, it is likely that the negative associations found between adolescents‟ levels of mental health problems and depression and their reports they received the help they needed were due to a combined effect of these predictors. Higher levels of total difficulties (SDQ total difficulties) and depression (CESD) may have impeded the likelihood that adolescents reported receiving the help they felt they needed. However, adolescents with higher levels of total difficulties and depression may have also had impaired psychosocial skills, which

reduced the likelihood that they would actually receive the help they needed. Furthermore, adolescents who reported receiving the help they needed may have had lower levels of total difficulties and depression than those who did not report receiving help, as the help they received may have improved their levels of mental health problems.

Psychosocial functioning

In addition to the suggested role that psychosocial functioning had in explaining the associations found between levels of mental health problems and adolescents‟ reports they received the help they needed, the results of the t-tests of this chapter indicated that adolescents who reported receiving the help they needed had significantly higher levels of constructive problem solving ability, interpersonal skills and social support than those who did not.

These results are consistent with the results of several studies that have indicated higher levels of social support or seeking help from informal sources may facilitate adolescents‟ help-seeking from professional sources of help (Barker and Adelman, 1994;Saunders et al., 1994; Schonert-Reichl & Muller, 1996). It was also interesting that the magnitude of the difference in mean scores was moderate for the Family and Significant Other social support subscales, but only small for the Friends subscale. These results suggest that having higher levels of support from family or from a significant other may be a more important facilitator in the help-seeking process than having support from friends. This may be because, while peers may be the preferred source of help for adolescents, they are generally not equipped to deal with problems of a severe psychological nature. For example, Kelly et al. (2006) found that only 23% of an Australian sample of adolescents (n=1,137) reported they would engage an adult (e.g., parent, teacher or school counsellor) to help with a friend

who was experiencing a range of symptoms reflective of either conduct disorder or depression.

The finding that adolescents who reported receiving the help they needed had higher levels of constructive problem solving than those who did not is consistent with models of help-seeking behaviour that have identified adolescents‟ problem solving and coping skills as factors that are likely to affect adolescents‟ help-seeking (Andersen, 1995; Rickwood et al., 2005; Srebnik et al., 1996). Adolescents with more proficient constructive problem solving skills may be more likely to have received the help they needed as they are more likely to think positively and rationally about the problems they experience and may, therefore, be more likely to devise adaptive ways of coping with problems, such as seeking out resources and sources of help to assist with their problems. Therefore, these skills may lead to a greater likelihood of adolescents receiving the help they needed.

The results of this chapter also indicate that adolescents who reported receiving the help they needed had higher levels of interpersonal skills than those who did not. Interpersonal skills are likely to affect an adolescents‟ ability to seek out and establish relationships with others and their ability to disclose and articulate their problems to others. Having established trusted relationships and being able to disclose to these sources, as well as to professional sources, of help are all likely to impact whether adolescents seek out help and thus receive the professional help they need (Rickwood et al., 2005).

As this study was cross sectional, again, causality cannot be assumed. While unlikely, it is possible that adolescents who reported receiving the help they needed perceived themselves to have higher levels of social support due to the help they received, e.g., they may feel generally more supported than those who did not receive help. Similarly, it may be that the help that adolescents received for their emotional or behavioural problems

improved their constructive problem solving skills and interpersonal skills. While unlikely, this is a limitation of the study and should be duly noted.

Summary

Higher levels of total difficulties and depression were related to a lower likelihood that adolescents reported receiving the help they felt they needed, although these factors explained little variability in adolescents‟ reports they had received the help they needed. Furthermore, the results indicate that having higher levels of any type of mental health problems, whether internalising or externalising in nature, explained little of the variability in adolescents‟ reports they had received the help they felt they needed.

Adolescents‟ levels of psychosocial functioning were able to explain the significant associations found between adolescents‟ levels of total difficulties (SDQ total difficulties score) and depression (CESD score) and their reports they had received the help they needed. However, the associations were not strong to begin with. It is also evident from these results that adolescents‟ levels of psychosocial functioning may play an important role in determining the likelihood that adolescents who perceive a need for professional help consider themselves to have received the help they needed. These factors are further investigated in the subsidiary analyses in Chapter 9.

CHAPTER 9: THE RELATIONSHIP BETWEEN SOCIO-DEMOGRAPHIC CHARACTERISTICS AND ADOLESCENTS' REPORTS THEY RECEIVED THE HELP THEY NEEDED AND SUBSIDIARY ANALYSES OF ALL PREDICTORS OF ADOLESCENTS' REPORTS THEY RECEIVED THE HELP THEY NEEDED

Introduction

This chapter examines the relationships between adolescents" socio-demographic characteristics and their reports they received the help they needed when they had perceived a need for professional help. This chapter also investigates whether the significance and strength of the associations found between adolescents" socio-demographic characteristics and their reports they received the help they needed persist after adjusting for adolescents" levels of mental health symptoms (scores on the SDQ total difficulties scale, the CESD scale and the Anxiety scale).

Hypotheses

Gender

Studies that have not assessed help-seeking in stages have found that females were significantly more likely than males to seek professional help (Schonert-Reichl & Muller, 1996; Gasquet et al., 1997). However, results of studies that have assessed help-seeking stages suggest that gender may be more strongly associated with earlier stages of help-seeking behaviour, i.e., problem recognition and perceiving a need for professional help, rather than with the latter stages of help-seeking, i.e., seeking professional help or receiving a referral for mental health services (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). This chapter investigates the strength and significance of the association between gender and adolescents" reports they received the help they needed

among adolescents who perceived themselves to have emotional or behavioural problems and a need for professional help. It is hypothesised that:

There will be no significant association between gender and adolescents' reports they received the help they needed (Hypothesis 9.1).

Language spoken at home

Little is known about the help-seeking behaviour of adolescents from ethnic minority backgrounds; however, it has been suggested that adolescents from an ethnic minority background may be reluctant to seek professional help and may encounter more barriers to help-seeking (Cauce et al., 2002; Rickwood et al., 2007). Studies conducted in the USA have found that adolescents from an ethnic minority background are less likely to use mental health services or to receive professional help (Kataoka et al., 2002; Kodjo & Auinger, 2004). The role of speaking a language other than English at home in Australian adolescents‟ participation in stages of help-seeking has not been assessed. In this study it is hypothesised that:

Adolescents from a non-English speaking background will be less likely than those from an English speaking background to report they received the help they needed (Hypothesis 9.2).

Parental status

Several studies have found a link between parental status and the proportion of adolescents who seek professional help, attend services or report receiving a referral for mental health services (Barker & Adelman, 1994; Laitinen-Krispijn et al., 1999; Saunders et al., 1994; Zwaanswijk, Van der Ende et al., 2003). Despite differences in the methods of assessing parental status and help-seeking (and other methodological differences between the

studies), the findings of these studies provide some evidence that certain parental situations, e.g., having divorced or separated parents, are related to a greater likelihood of seeking professional help, attending services and receiving a referral for mental health services. An aim of this study was to determine whether these relationships were evident at the final stage of help-seeking assessed in this study, i.e., receiving the help needed. In this study it is hypothesised that:

Adolescents from families where parents are not living together (i.e., parents separated or divorced, one or more is deceased, parents have never lived together or another different parental situation) will be more likely to report they received the help they felt they needed than those who have parents who live together (Hypothesis 9.3).

Parental paid employment

Parents‟ paid employment status may potentially influence whether adolescents report receiving the help they felt they needed by virtue of the effects that parents‟ resources, e.g. financial and time constraints, may have on adolescents‟ help-seeking when they experience mental health problems. While no previous studies have investigated the association between parental paid employment status and stages of help-seeking among an Australian sample of adolescents, in an Australian study conducted by Sawyer et al. (2001), parents reported that the cost of services was one of the main barriers to attaining help for their children‟s mental health problems. Due to the financial constraint that may be encountered by families with parents who do not work in full time paid employment, it is possible that adolescents in these families will be less likely to report they received the help they needed than adolescents with parents in full time paid employment. The effects of parental paid employment on adolescents‟ help-seeking were examined separately for mother‟s and father‟s paid employment status. In this study, it is hypothesised that:

Adolescents with fathers or mothers who are not in full time paid employment (i.e., do not work, in part time paid employment or retired) will be less likely to report they received the help they needed than adolescents with fathers or mothers in paid full time employment (Hypothesis 9.4)

Covariates: Mental health problems

It is possible that the relationships found between adolescents‟ socio-demographic characteristics and their reports that they received the help they needed are explained by their levels of mental health problems. Therefore, the aforementioned hypothesised associations will be examined adjusting for adolescents‟ levels of mental health problems (i.e., SDQ total difficulties score, CESD score and Anxiety score). It is hypothesised that associations will persist after adjusting for adolescents‟ levels of mental health problems.

Chapter structure

The present chapter consists of two sections as in previous results chapters. First the proportions of adolescents who reported receiving the help they needed were examined across categories of socio-demographic characteristics among adolescents who perceived a need for professional help. A series of Pearson‟s chi-square tests were performed to establish the significant associations between socio-demographic characteristics with adolescents‟ reports they received the help they needed. The results of these analyses guided which socio-demographic characteristics were investigated further in logistic regression analyses. Logistic regression analyses were then also conducted to further investigate the relationships between socio-demographic characteristics and adolescents‟ reports they received the help they needed.

Socio-demographic differences in the proportions of adolescents who reported they had received the help they needed

The proportions (%) of adolescents who reported receiving the help they needed for each category of the socio-demographic characteristics are reported in Table 9.1 among adolescents who perceived a need for professional help. As is evident from Table 9.1, there was little variation in the proportion of adolescents who reported receiving the help they needed by socio-demographic characteristics. Pearson‟s chi-square confirmed there was no significant association between gender, language spoken at home and mother‟s and father‟s paid employment status and adolescents‟ reports they received the help they needed. However, Pearson‟s chi-square indicated that there was a statistically significant variation in the proportion of adolescents who reported receiving the help they needed by parental status. Very small proportions of adolescents among adolescents with parents who had never lived together and among those with parents in another (unspecified) parental situation reported that they received the help the help they needed, compared to adolescents from the other parental situations. Only very small numbers of adolescents reported they had parents who had never lived together (n=4) and had parents in another (unspecified) parental situation (n=17). Therefore, little can be concluded from these results regarding these parental status categories. A logistic regression analysis that examined the relationship between the parental status categories and adolescents‟ reports they received the help they needed was still conducted to further assess this significant albeit minor difference.

Table 9.1

Adolescents who reported they received the help they needed (%) by socio-demographic characteristics among those who perceived a need for professional help

Socio-demographic	*n*	% Received help needed	$\chi^2_{(df)}$
Gender			
Male	143	36	$.24_{(1)}$
Female	313	39	
Language spoken at home			
English	382	39	$.66_{(2)}$
English & another language	68	34	
Another language	5	40	
Parental status			
Parents living together	236	40	$10.72_{(4)}$*
Separated or divorced	176	40	
One or more parent deceased	19	37	
Parents have never lived together	4	0	
Another parental situation	17	6	
Mother"s paid employment			
Full time	172	40	$2.29_{(3)}$
Part time	132	42	
Not working	133	33	
Retired	10	40	
Father"s paid employment			
Full time	310	39	$.48_{(3)}$
Part time	66	39	
Not working	41	37	
Retired	16	31	

*$p<.05$.

Logistic Regression Analyses

The results of the univariate (unadjusted) logistic regression analysis conducted among adolescents who perceived a need for help are reported in Table 9.2. The odds ratios indicated that adolescents with an "other parental situation" were significantly less likely to report they received the help they needed than those with parents who lived together. As found previously by the Chi-square analysis it is readily apparent that this association is based on a very small group of just 17 adolescents who were likely to be from diverse family situations, very few of whom reported receiving the help they needed. There was no evidence of any meaningful differences between the other parental situations and this would indicate, overall, that socio-demographic characteristics had little role in determining whether adolescents who perceived a need for professional help had actually received the help they needed. Due to the limited associations that parental status and other socio-demographic characteristics showed with adolescents" reports they received the help they needed, no multivariable analyses were conducted.

Table 9.2

Results of univariate logistic regression analysis with socio-demographic characteristics as predictors of the outcome variable "receiving the help that was needed" among adolescents who perceived a need for professional help

Parental status *n*=452	*n*	*B*	*SE*	*OR*	*95% CI*	†*p*-value
Parents living together	236			1.00		
Separated or divorced	176	.00	.20	1.00	.67-1.49	.986
One or more parent deceased	19	-.14	.49	.87	.33-2.28	.770
Parents have never lived together	4	[a]	[b]		[c]	
Other parental situation	17	-2.38	1.04	.09	.01-0.71	.022

Note. B= Unstardardised regression coefficient, *OR* = Odds ratio, *CI* = Confidence Interval.

† *p* value is based on a comparison of the appropriate estimate with the "reference" category (parents living together).

[a] A high negative value.

[b]A high positive value.

[c] Not reliably estimable due to very small numbers.

Discussion

As mentioned for Chapter 8, when interpreting the results of this chapter it is important to note that the final stage of help-seeking in this study was assessed by determining whether adolescents felt they had received the help they needed when they had perceived a need for professional help. No other studies have assessed the factors associated with the final stage of help-seeking, assessed in this way. Therefore, in the absence of comparable studies, the results of this chapter are interpreted within the context of findings of other studies that have assessed the extent to which adolescents sought professional help and attended services and their willingness to seek professional help.

Gender

The results of this chapter supported Hypothesis 9.1, such that gender was not significantly associated with adolescents‟ reports they received the help they needed among adolescents who perceived a need for professional help. The results indicate that males and females were equally likely to report receiving the professional help they had perceived themselves to need. These results are consistent with the results of previous studies (Saunders et al., 1994; Sears, 2004) that indicated the role of gender was predominantly in the earlier stages of help-seeking (problem recognition or perceiving a need for professional help), rather than in the latter stage that they assessed, i.e., seeking professional help. Sears found females were more likely than males to perceive themselves to have emotional, behavioural or physical problems, but were not more likely to seek professional help. Saunders et al. also found a higher proportion of females than males perceived themselves to have emotional or behavioural problems and a need for professional help with these problems, but were not more likely to seek professional help.

In contrast, other studies have found that females were more likely than males to report they had consulted a physician (GP, specialist or school doctor) or nurse for depression or had sought professional help (Gasquet et al., 1997; Schonert-Reichl & Muller, 1996). However, these studies examined the relationship between gender and indicators of help-seeking among the full sample and did not take into account the gender differences in earlier stages of help-seeking (problem recognition and perceiving a need for professional help). Therefore, gender may not be associated with adolescents‟ reports of seeking professional help or their reports they received the help they needed, but, rather, is associated with their having perceived themselves to have problems and a need for professional help.

This supposition is also consistent with the suggestion of Srebnik et al. (1996) that the gender differences in help-seeking are actually related to females‟ willingness to identify internal states and problems as mental health concerns that require help. This would explain the reasons for which there are gender differences in the earlier stages of problem recognition and perceiving a need for professional help, but not in adolescents‟ reports they received the help they needed.

Language spoken at home

Hypothesis 9.2 was not supported by the results of this study. Adolescents from a non-English speaking background and those from English speaking backgrounds were equally likely to report they had received the professional help they felt they needed. While these results are inconsistent with the results of studies that have found an association between ethnicity and service attendance (Kataoka et al., 2002; Kodjo & Auinger, 2004), they are consistent with findings of a study by Saunders et al. (1994). Saunders et al. found that "race", e.g. Caucasian vs. Non-Caucasian, was not significantly associated with seeking

professional help among a sample of adolescents from the USA. Saunders et al. and the current study both examined associations between adolescent characteristics (coming from a non-English speaking background or race) and the final stage of help-seeking among adolescents who had attained previous stages of help-seeking. Furthermore, in this study, a significant association was found between coming from a non-English speaking background and adolescents‟ perceptions they had emotional or behavioural problems. These results suggest that coming from a non-English speaking background may only be related to the initial stage of problem recognition. As suggested for gender, once the difference in problem recognition by coming from a non-English speaking background is taken into account, the association between this characteristic and subsequent stages of help-seeking may be diminished.

Parental status

The results of this chapter provide little support for Hypothesis 9.3. There were no meaningful relationships found between parental status categories and adolescents‟ reports they had received the help they needed. These results contrast the results of previous studies that have found an association between parental status with service attendance, seeking professional help and receiving a referral for mental health services (Barker & Adelman, 1994; Laitinen-Krispijn et al., 1999; Saunders et al., 1994; Zwaanswijk, Van der Ende et al., 2003). However, the indicators of help-seeking behaviour employed by these previous studies ascertained whether adolescents had sought professional help or attended services, but these methods of assessment do not ascertain whether adolescents perceived that the help they received fulfilled their needs. This study differed from these previous studies such that it examined adolescents‟ reports they received the help they felt they needed. Therefore, while the results of these previous studies suggest that adolescents‟ parental status affects the likelihood that adolescents will seek professional help or attend

services, the results of this study suggest it does not affect adolescents‟ perceptions that the help they received was actually the help that they needed.

Parental paid employment

The results of this study provided little support for Hypothesis 9.4. Mother‟s and father‟s paid employment status were not significantly associated with adolescents‟ reports they received the help they needed when they had perceived a need for professional help. The results of previous studies suggest that SES and household income may impact the likelihood that adolescents seek professional help or attend services (P. Cohen & Hesselbart, 1993; Saunders et al., 1994; Sawyer et al., 2000). However, no previous studies have assessed the differential effects that mother‟s and father‟s paid employment status may have on adolescents‟ reports they received the help they needed.

It is important to note that rather than focusing on adolescents‟ reports of seeking or receiving professional help or attending services, this study was concerned with adolescents‟ self-perception of having received the help they thought they needed. Hence, we cannot estimate the effect that parental paid employment may have on seeking professional help or attending services based on the results of this study.

The study was also limited in the socio-economic information it could assess as it relied on adolescents‟ self-reported information and parental paid employment status may not be a valid indicator of the financial resources available to a household. It is likely that there are financial barriers to accessing professional sources of help or services for emotional or behavioural problems in Australia (Sawyer et al., 2001); however, as this study assessed parental paid employment status and not other socio-economic factors, this relationship was not detected by this study.

Forwards and backwards logistic regression analyses with all variables as predictors of the outcome variable among both subgroups of adolescents

Further exploratory analyses were conducted with all variables (socio-demographic characteristics, mental health problems and psychosocial variables) from Chapters 8 and 9 as predictors of receiving the help that was needed using both forwards and backwards stepwise logistic regression analyses. These analyses determined the minimal number of predictors of the outcome variable "receiving the help that was needed" among adolescents who perceived a need for professional help.

Both forwards and backwards logistic regression analyses yielded similar models. The forwards selection procedure identified only two variables as significantly increasing the likelihood that adolescents reported receiving the help they needed: the Constructive Problem Solving score and the Family Relationships score (see Table 9.3). This model was able to discriminate between adolescents who did and did not report receiving the help they needed, χ^2 (2, n =396) = 36.5, p<.001. It had a prediction success of 68.8%, exceeding that of the null model (61.9%), and explained 12.6% of the variance in adolescents" reports they received the help they needed.

An interesting finding was that the socio-demographic characteristics and adolescents" scores on the SDQ total difficulties scale, the CESD scale and Anxiety scale were not identified by this procedure indicating they did not make a significant contribution to the model. These results are consistent with the results of Chapters 8 and 9, as socio-demographic characteristics were not found to be related to adolescents" reports they received the help they needed. Furthermore, adolescents" scores on the SDQ total difficulties scale, the CESD scale and Anxiety scale were found to explain only a small proportion of the variance in adolescents" reports they received the help they needed.

Table 9.3

Stepwise logistic regression analyses (forwards selection) of the outcome variable "receiving the help that was needed" among adolescents who perceived a need for professional help

n=375	*B*	*SE*	Wald test (*z*-ratio)	*OR*	*95% CI*	*p* value
Family relationships score	.37	.11	12.15	1.45	1.18-1.78	<.001
Constructive problem solving score	.35	.12	8.25	1.42	1.12-1.79	.004

Note. B=Unstandardised regression coefficient, *OR* = Odds ratio, *CI* = Confidence Interval.

The backwards logistic regression procedure similarly identified the same variables as significantly increasing the likelihood that adolescents reported receiving the help they needed; however, parental status was additionally selected by this procedure, although was not significantly associated with receiving the help that was needed (see Table 9.4). This model was also able to reliably distinguish between adolescents who did and did not report they received the help they needed, χ^2 (6, n =375) = 49.5, p<.001. While parental status was not significantly associated with receiving the help that was needed in this model, the variance explained in the outcome variable was greater than that of the previous model (from forwards selection) at 16.8%. Prediction success exceeded that of the null model (61.9%) at 67.7%, however, did not exceed that of the previous model. The inclusion of parental status slightly reduced the strength of association between the Family Relationships score with adolescents" reports that they received the help they needed. Similar to that found with the forwards selection procedure, no other socio-demographic characteristics or measures of mental health problems were identified by this procedure.

Table 9.4

Stepwise logistic regression analyses (backwards selection) of the outcome variable "receiving the help that was needed" among adolescents who perceived a need for professional help

n=375	*B*	*SE*	Wald test (*z*-ratio)	*OR*	95% CI	*p* value
Family relationships score	.33	.11	9.75	1.39	1.13-1.72	.002
Constructive problem solving score	.37	.12	9.09	1.45	1.14-1.84	.003
Parental status						
Parents living together				1.00		
Separated or divorced	-.02	.24	.01	.98	.62-1.55	.929
One or more parent deceased	.24	.68	.13	1.27	.34-4.83	.724
Parents never lived together	[a]	[b]			[c]	
Another parental situation	[a]	[b]			[c]	

Note. B=Unstandardised regression coefficient, *SE*=Standard Error; *OR* = Odds ratio; CI = Confidence Interval.

[a] A high negative value.

[b] A high positive value.

[c] Not reliably estimable due to very small numbers.

While the results of Chapters 8 and 9 indicated that socio-demographic characteristics and mental health problems explained little of the variance in receiving help, the results of these subsidiary analyses suggest that the Family Support score and the Constructive Problem Solving score were important factors in determining whether adolescents reported they received the help they needed. The association between family support and receiving the help that was needed was in the same direction as the results reported in Chapter 8 (t-tests), such that adolescents with higher levels of family support were more likely to report they received the help they needed. These results are consistent with the results of several

studies that have indicated that having higher levels of social support or seeking informal support may facilitate help-seeking from professional sources of help (Barker & Adelman, 1994;Saunders et al., 1994; Schonert-Reichl & Muller, 1996). Therefore, the results of this study suggest that having adequate family support may have facilitated adolescents receiving the help they needed.

Adolescents with higher levels of constructive problem solving skills were also more likely to report that they received the help they needed. This result is also consistent with models of help-seeking that postulate that adolescents require adequate problem solving and coping skills in order to obtain resources to deal with problems (Andersen, 1995; Srebnik et al., 1996). Therefore, it is probable that having higher levels of constructive problem solving skills facilitated adolescents to have received the help they needed.

Despite the feasibility of these explanations, it cannot be determined from this study whether having higher levels of constructive problem solving skills or family support facilitated adolescents to receive the help they needed, or whether adolescents who received the help they needed reported higher levels of constructive problem solving skills or family support due to the help that they received. However, if these results are interpreted within the context of help-seeking models that have conceptualised social support and problem solving or coping skills to have some impact on help-seeking behaviour (Andersen, 1995; Andersen & Newman, 1973; Rickwood et al., 2005; Srebnik et al., 1996), they suggest that having higher levels of family support and constructive problem solving skills increased the likelihood that adolescents reported they received the help they needed.

Overall summary of predictors of receiving the help that was needed

The results indicate that adolescents‟ socio-demographic characteristics had little role in determining whether adolescents who perceived a need for professional help actually reported they had received the help they needed. These results suggest that socio-demographics play more of a role in earlier stages of help-seeking, specifically in problem recognition.

The results also indicate that levels of mental health symptoms had a limited role in determining whether adolescents reported that they had received the help they felt they needed. It is therefore apparent that adolescents‟ levels of mental health symptoms are more strongly related to the initial stages of help-seeking, problem recognition and perceiving a need for professional help, rather than with the latter stage assessed in this study. Thus, these results suggest that, once adolescents have perceived themselves to have emotional or behavioural problems and a need for professional help with their problems, the likelihood of them attaining the subsequent stages of help-seeking are not greatly affected by their levels of mental health problems.

An important finding of this study was that some psychosocial variables appeared to have a substantial role in determining whether adolescents reported they had received the help they needed. Specifically, having higher levels of social support from family and constructive problem solving skills were found to be related to an increased likelihood of receiving the help that was needed. The finding that psychosocial factors had a more substantial role in receiving help rather than in the earlier stages of help-seeking (i.e., problem recognition and need for professional help) is consistent with how these factors have been conceptualised to affect help-seeking behaviour (Andersen, 1995; Andersen & Newman, 1973; Rickwood et al., 2005; Srebnik et al., 1996). For example, interpersonal

skills and problem solving skills (as conceptualised in this study) are more likely to assist adolescents in seeking out resources and sources of professional help rather than assisting them in the internal process of problem recognition and deciding whether they need professional help. Thus, while the results suggested these factors did not substantially affect the likelihood that adolescents attained the earlier stages of help-seeking, they had some effect on the likelihood that adolescents attained the latter stage of help-seeking investigated in this study.

CHAPTER 10: SUBSIDIARY ANALYSES AMONG ADOLESCENTS WHO DID NOT PERCEIVE A NEED FOR PROFESSIONAL HELP

The main aim of this thesis was to examine the factors that are associated with adolescents‟ attainment of the different stages of help-seeking through which they may progress to seek professional help for emotional or behavioural problems. Hence, the main focus of Chapters 8 and 9 were the adolescents who reported receiving the help they needed when they had also perceived a need for professional help (Chapter 8 and 9). This chapter investigates the adolescents who reported receiving the help they needed, although they had not perceived a need for professional help. It is likely that these adolescents received the help they needed from an informal source. However, since the source from which adolescents received the help they needed was not ascertained in this survey, the results of this chapter must be interpreted with caution.

Key analyses of Chapter 8 and Chapter 9 were repeated among this group of adolescents. The results of this chapter enable the determination of whether the relationships found between predictor variables and adolescents‟ reports they received the help they needed are similar among adolescents who perceived a need for professional help and those who did not.

It is interesting that a significantly larger proportion of adolescents who did not perceive a need for professional help reported they had received the help they needed (45%) than those who perceived a need for professional help (38%; $\chi^2(1)=6.44$, $p<.05$). If, as suspected, the adolescents of this chapter received help from an informal source, this result is consistent with findings of previous studies that have shown adolescents prefer to seek help from informal sources of help over professional sources of help (Boldero & Fallon, 1995; Gould et al., 2002; Rickwood, 1995; Schonert-Reichl & Muller, 1996).

Levels of mental health symptoms

Results of independent samples t-tests

Similar to Chapter 8, the mean scores and standard deviations for the SDQ total difficulties scale and subscales, the CESD scale, the Anxiety scale and the psychosocial scales and subscales were compared between adolescents who did and did not report they had received the help they needed. However, these analyses were only conducted among adolescents who did not perceive a need for professional help but had perceived themselves to have emotional or behavioural problems.

Table 10.1 reports the mean scores and standard deviations for the SDQ total difficulties scale and subscales, the CESD scale, the Anxiety scale for adolescents who did and did not report receiving the help they needed. For each scale and subscale in Table 10.1, adolescents who reported they had received the help they needed had lower mean scores than those who reported they did not receive the help they needed. The positively worded Prosocial Behaviour scale was the only exception. For the Prosocial Behaviour subscale, adolescents who reported they had received the help they needed had a higher mean Prosocial Behaviour score than those who did not. This pattern of results generally replicates that found among adolescents who perceived a need for professional help.

A series of t-tests revealed that there were statistically significant differences between the mean scores of adolescents who did and did not report they had received the help they needed for all scales and subscales in Table 10.1. However, the magnitude of the difference was only small for each of the scales and subscales, as indicated by the effect size (eta-squared) (Cohen, 1988).

Table 10.1

Mean (SD) scores of adolescents who did and did not receive help the help they needed, for the CESD scale, Anxiety scale, SDQ total difficulties scale and SDQ subscales among adolescents who did not perceive a need for professional help

Scale	Received the help they needed		*t*	η^2
	Yes (*n*=789)	No (*n*=959)	*(df)*	
SDQ Tot.	12.82 (5.64)	15.07 (5.82)	8.14*** (1734)	.04
SDQ subscales				
Emotional symptoms	3.46 (2.35)	3.72 (2.43)	2.29* (1736)	.003
Conduct problems	2.87 (1.94)	3.61 (2.15)	7.56*** (1722)	.03
Hyperactivity	4.45 (2.32)	5.30 (2.30)	7.65*** (1734)	.03
Peer Problems	2.04 (1.72)	2.43 (1.94)	4.39*** (1726)	.01
Prosocial behaviour	7.25 (1.78)	6.63 (2.05)	-6.75*** (1732)	.03
CESD	16.73 (10.32)	19.81 (11.32)	5.90*** (1702)	.02
Anxiety	7.86 (4.39)	8.44 (4.92)	2.58* (1708)	.004

*p<.05,***p<.001.

Level of psychosocial functioning

Results of independent samples t-tests

Mean scores on the psychosocial scales and subscales were also examined for adolescents who did and did not report they received the help they needed in this group (see Table 10.2). Adolescents who reported they had received the help they needed had higher mean scores on each of the scales and subscales than adolescents who did not report they had received the help they needed. A series of t-tests revealed that there was a statistically significant difference between each of the mean scores for every scale and subscale in Table 10.2. The magnitude of the difference was moderate for the Constructive Problem Solving scale, the Family social support subscale and the Significant Other social support subscale as indicated by the effect size (eta-squared); however, was small for the other scales and subscales.

Table 10.2

Mean (SD) scores of adolescents who did and did not report they received the help they needed for the Constructive Problem Solving scale, Social Support subscales and the Interpersonal Skills subscales among adolescents who did not perceive a need for professional help

	Received the help they needed		*t* *(df)*	η^2
	Yes (*n*=789)	No (*n*=959)		
Constructive Problem Solving	27.09 (8.85)	21.67 (9.48)	-12.29*** (1704.3)	.08
Social Support subscales				
Family relations	5.77 (1.06)	5.18 (1.22)	-10.83*** (1739)	.06
Friend relations	5.72 (1.11)	5.29 (1.28)	-7.59*** (1739)	.03
Significant other	6.02 (1.00)	5.44 (1.20)	-10.99*** (1743)	.06
Interpersonal Skills subscales				
Initiating relationships	5.50 (1.91)	5.06 (2.16)	-4.43*** (1678)	.01
Emotional support seeking	6.69 (1.72)	6.00 (2.12)	-7.29*** (1687)	.03
Asserting influence	5.93 (1.75)	5.54 (1.89)	-4.36*** (1662)	.01
Self-disclosure	6.19 (1.70)	5.38 (2.03)	-8.91*** (1684)	.05
Conflict resolution	5.43 (1.76)	4.78 (1.91)	-7.25*** (1658)	.03

Note. η^2=eta squared.

***p<.001.

Socio-demographic characteristics

Table 10.3 shows, among the adolescents who did not perceive a need for professional help, the proportions (%) who reported receiving the help they needed across categories of the socio-demographic characteristics.

Gender

It is evident from Table 10.3 that a greater proportion of females reported they had received the help they needed compared to males. Pearson‟s chi-square confirmed there was a significant association between gender and adolescents‟ reports they received the help they needed among this group of adolescents.

Language spoken at home

The proportion of adolescents who reported they received the help they needed was also slightly higher among adolescents who spoke English and another language at home, compared to those who spoke only English at home. However, there was no statistically significant variation in the proportion of adolescents who reported they had received the help they needed by language categories (as indicated by Pearson‟s chi-square).

Parental status

Equivalent proportions of adolescents from each parental status category reported they had received the help they needed and Pearson‟s chi-square confirmed there was no significant variation in the proportion of adolescents who reported they had received the help they needed by parental status categories.

Table 10.3

Adolescents who reported they received the help they needed (%) according to socio-demographic characteristics among those who did not perceive a need for professional help

Socio-demographic characteristics	*n*	% Received help needed	$\chi^2_{(df)}$
Gender			
Male	713	39	$20.70_{(1)}$***
Female	1034	50	
Language spoken at home			
English	1521	44	$3.84_{(2)}$
English & another language	206	52	
Another language	14	43	
Parental status			
Parents living together	1124	46	$.51_{(4)}$
Separated or divorced	508	44	
One or more parent deceased	39	46	
Parents never lived together	31	42	
Another parental situation	41	46	
Mother‟s paid employment			
Full time	702	41	$9.29_{(3)}$*
Part time	551	47	
Not working	444	49	
Retired	25	56	
Father‟s paid employment			
Full time	1315	46	$1.18_{(3)}$
Part time	200	43	
Not working	133	43	
Retired	34	44	

*p<.05,***p<.001.

Maternal paid employment

As is apparent from Table 10.3 there was some variation in the proportion of adolescents who reported receiving the help they needed by mother‟s paid employment status. The proportion of adolescents who reported receiving the help they needed was lowest among adolescents with mothers who were in full time paid employment, followed by those with mothers in part time paid employment, then those with mothers who were not working in paid employment and those with mothers who were retired. Pearson‟s chi-square confirmed there was a significant variation in the proportion of adolescents who reported receiving the help they needed by mother‟s paid employment status among this group of adolescents.

Paternal paid employment

Equivalent proportions of adolescents reported they received the help they needed for each of the father‟s paid employment status categories. Pearson‟s chi-square confirmed there was no significant variation in receiving help by father‟s paid employment status categories.

In summary, the results of these simple analyses indicated that, among adolescents who did not perceive a need for help, significant associations were present between the socio-demographic characteristics of gender and mother‟s paid employment status and adolescents‟ reports they received the help they needed.

Forwards and backwards logistic regression analyses

Further exploratory analyses were conducted with all measures of mental health problems, socio-demographic characteristics and psychosocial variables as predictors of receiving the help that was needed, using both forwards and backwards stepwise logistic regression analyses. These analyses determined the minimal number of predictors of receiving help among this group of adolescents (those who did not perceive a need for professional help).

The forwards and backwards logistic regression analyses yielded very similar models. The forwards selection procedure identified the Constructive Problem Solving score, Family Relationships score, SDQ total difficulties score, Significant Other relationships score, being female (as opposed to male) and the Asserting Influence score as significantly increasing the likelihood that adolescents reported they received the help they needed (see Table 10.4). This model was statistically significant, χ^2 (6, n =1515) = 182.7, p<.001, and explained 15.2% of variance in the outcome variable. Prediction success was 64.6% exceeding the null model (54.2%).

Table 10.4

Stepwise logistic regression analyses (forwards selection) of the outcome variable " receiving the help that was needed" among adolescents who did not perceive a need for professional help

n=1515	*B*	*SE*	Wald test (*z*-ratio)	*OR*	*95% CI*	*p* value
Constructive problem solving score	.43	.07	39.00	1.53	1.34-1.75	<.001
Family relationships score	.23	.07	10.27	1.26	1.09-1.45	.001
SDQ total difficulties score	-.21	.07	9.31	.82	.71-.93	<.001
Significant other score	.19	.08	6.51	1.22	1.05-1.41	.011
Gender[a]						
Male				1.00		
Female	.30	.12	6.48	1.35	1.07-1.71	.011
Asserting influence	-.15	.06	5.79	.86	.76-.97	.016

B=Unstandardised regression coefficient; *SE*=Standard Error; *OR* = Odds ratio; *CI* = Confidence Interval. Reference category is the first group in each socio-demographic category.

The backwards selection procedure identified the same variables as significantly increasing the likelihood that adolescents reported they received the help they needed, with the addition of the Self-disclosure subscale score (see Table 10.5). However, the Self-disclosure score was not significantly associated with adolescents" reports of receiving help and the proportion of variance (15.4%) explained and prediction success (64.7%) of this model was not substantially improved by the inclusion of this scale. The model was able to discriminate between adolescents who reported receiving the help they needed and those who did not, χ^2 (6, n =1515) = 185.8, p<.001.

Table 10.5

Stepwise logistic regression analyses (backwards selection) of the outcome variable "receiving the help that was needed" among adolescents who did not perceive a need for professional help

n=1515	*B*	*SE*	Wald test (*z*-ratio)	*OR*	*95% CI*	*p* value
Constructive problem solving score	.40	.07	31.21	1.48	1.29-1.71	<.001
Family relationships score	.22	.07	9.55	1.25	1.09-1.44	.002
SDQ total difficulties score	-.20	.07	9.18	.82	.72-.93	.002
Significant other score	.17	.08	4.98	1.19	1.02-1.38	.026
Asserting influence	-.20	.07	8.39	.82	.72-.94	.004
Gender						
Male				1.00		
Female	.26	.12	4.67	1.30	1.02-1.65	.031
Self disclosure	.13	.08	3.09	1.14	.99-1.32	.079

Note. B=Unstandardised regression coefficient; *SE*= Standard error; *OR* = Odds ratio; *CI* = Confidence Interval.

As found in the simple analyses of this chapter, females were significantly more likely than males to report they had received the help they needed. Furthermore, adolescents with higher scores on the Constructive Problem Solving score and the Family and Significant Other social support subscales were found to be more likely to report they had received the help they needed. Conversely, adolescents with higher scores on the SDQ total difficulties scale and the Asserting Influence scale were less likely to report they had received the help they needed.

Each of these significant associations was similar to those found in the results of the simple analyses of this chapter, with the exception of the Asserting Influence scale. The previous

results of this chapter indicated that adolescents who reported they received the help they needed had higher scores on the Asserting Influence scale than those who did not report receiving the help they needed. However, after adjusting for the other variables in Table 10.5, the direction of this association changed such that adolescents with higher levels of asserting influence skills were significantly less likely to have received the help they needed. Further analyses revealed this was a result of adjusting for all of the scales and subscales in Table 10.5, with the exception of gender, which produced little change in the association.

Discussion

Overall, the relationships found between socio-demographic characteristics, levels of mental health problems and levels of psychosocial functioning and adolescents‟ reports they received the help they needed were found to be similar among adolescents who did and did not perceive a need for professional help. An exception was that females were found to be significantly more likely than males to report they had received the help they needed when they did not perceive a need for professional help in the simple analyses and also in the stepwise analyses of this chapter. This relationship was not observed among adolescents who perceived a need for professional help in Chapter 9. This may, in part, be because adolescents who did not perceive a need for professional help were a much larger group of adolescents than those who perceived a need for professional help. It is likely the larger number of adolescents in the analyses of this chapter contributed to the significance of the association. However, if, as suspected, the adolescents of this chapter received help from an informal source, these results are consistent with the results of Raviv et al.‟s study (2000). Raviv et al. found that female adolescents were more willing than male adolescents to seek help from informal sources (parents and friends) for severe emotional problems.

Cauce et al. (2002) suggested that the gender difference found in help-seeking behaviour may be attributable to adolescents conforming to social norms and gender roles/stereotypes from family, friends and media that help-seeking behaviour is considered as a dependent and interpersonal behaviour that is more characteristic of females than males (Archer, 1996; Stefic & Lorr, 1974). The findings of this study suggest this may be applicable to help-seeking from informal sources of help as well as professional sources of help.

Overall, the results of this chapter suggest that levels of mental health problems and levels of psychosocial functioning may operate similarly to inhibit or facilitate, respectively, the likelihood that adolescents perceive themselves to have received the help they needed, regardless of whether or not adolescents perceive a need for professional help. For example, the way in which mental health problems may impede receiving help from professional sources, as described in Chapter 8, may also impede receiving help when a need for professional help was not identified; and the way in which psychosocial factors may facilitate receiving help from professional sources, also described in Chapter 8, may also facilitate receiving help when a need for professional help was not identified. Moreover, if the adolescents examined in this chapter had actually received the help they needed from informal sources of help, as suspected, these results would suggest additionally that these same factors may operate similarly to facilitate or inhibit the likelihood that adolescents perceive themselves to have received the help they needed from professional or informal sources of help. However, as previously noted, as the source from which adolescents received the help they needed was not assessed in this study, this is only speculative. A more detailed study of the factors associated with adolescents‟ help-seeking behaviour from informal sources of help would be required to substantiate and confirm this supposition.

CHAPTER 11: DISCUSSION

Mental health problems impose substantial burden on individuals and society, with projections that uni-polar depressive disorders will be the leading cause of burden of disease in high-income countries (including Australia) by 2030 (Mathers & Loncar, 2005). In light of increasing evidence that many lifetime psychiatric disorders have their onset during childhood or adolescence (Costello et al., 2005) and that a substantial proportion (13% to 19%) of adolescents from Western countries experience mental health problems (Fergusson et al., 1993; Sawyer et al., 2007; Zwaanswijk, Van der Ende et al., 2003), there is a need to intervene during this time to prevent problems from becoming entrenched and continuing into adulthood. Receiving appropriate treatment for mental health problems has been shown to improve symptoms and outcomes for children and adolescents (Casey & Berman, 1985; Kazdin, 1990; Weisz et al., 1987; Weisz et al., 1995).

Seeking help for emotional, behavioural or mental health problems is an adaptive way of coping with problems and is likely to lead to receiving timely and appropriate treatment; however, few adolescents who meet the criteria for psychiatric disorder actually attend services (Rickwood & Braithwaite, 1994; Sawyer et al., 2001; Sawyer et al., 2007; Zwaanswijk, Van der Ende et al., 2003) and few seek professional help even when they perceive themselves to have emotional, behavioural, physical and/or mental health problems (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). The aim of this study was to provide some insight into adolescents‟ help-seeking behaviour and to identify the factors that may facilitate or inhibit help-seeking behaviour for emotional or behavioural problems.

Many previous studies have assessed adolescent help-seeking as a one-step process and have compared the characteristics of adolescents who do or do not seek professional help

or attend services (Barker & Adelman, 1994; Boldero & Fallon, 1995; Gasquet et al., 1997; Santor et al., 2006; Schonert-Reichl & Muller, 1996). These studies provide insight into only one stage of the help-seeking process and do not investigate the characteristics of adolescents who are at earlier stages of help-seeking, e.g., those who perceive themselves to have emotional or behavioural problems and perceive a need for professional help with these problems. It is important to examine the characteristics of adolescents at these earlier stages, given that many adolescents who perceive that they have emotional or behavioural problems and a need for professional help with these problems do not seek professional help or attend services (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003).

This study conceptualised help-seeking behaviour as consisting of three fundamental stages, based on previous studies and models of help-seeking (Andersen, 1995; Andersen & Newman, 1973; Cauce et al., 2002; Kessler et al., 1981; Logan & King, 2001; Rickwood et al., 2005; Srebnik et al., 1996; Verhulst & Koot, 1992; Zwaanswijk, Verhaak et al., 2003). These stages are: (i) self-perceived problem recognition; (ii) perceiving a need for professional help; and (iii) receiving the help that was needed. The main aim was to identify the factors that had significant associations with each of these stages of help-seeking and also to examine the strength of these associations. This was the first study conducted with an Australian sample of adolescents that examined the factors associated with adolescents‟ help-seeking behaviour when it was conceptualised as consisting of stages.

A sample of 5,634 adolescents that were recruited at baseline as part of the *beyondblue* Schools Research Initiative (*bb*SRI) were the informants for this study (Sawyer et al., in

press). The remainder of this chapter will outline the limitations and strengths of this study, summarise the main findings and discuss the implications of these results.

Study limitations

When considering the limitations of this study, it is important to note that the study was intended for another purpose: to evaluate the effectiveness of the *beyondblue* Schools Research Initiative *(bb*SRI). Therefore, the measures and methods used in this study were selected based on their suitability for the purposes of assessing the effects of this intervention (*bb*SRI). However, the study provided the opportunity to examine adolescents‟ help-seeking behaviour and the factors associated with this behaviour.

The sample used in this study was a school based sample and the adolescents in this sample showed elevated levels of depression (CESD scores) and total difficulties (SDQ total difficulties scores) compared to levels found in other studies (Mellor, 2005; Meltzer et al., 2000; Roberts et al., 1991). While the broad patterns and relationships found with stages of help-seeking in this study are likely to be applicable to other adolescent populations, they should be interpreted with some caution.

The Anxiety scale and Interpersonal Skills subscales were modified for use in this study and the Constructive Problem solving scale was developed specifically for use in this study using items from previously used scales and subscales. However, these measures were piloted with 207 students prior to the study and were shown to demonstrate sound psychometric qualities (beyondblue, 2007a).

A limitation of the item used to assess the language adolescents predominantly spoke at home grouped all adolescents who reported speaking a language other than English together. The specific ethnic background of adolescents cannot be determined from this

measure and adolescents‟ help-seeking behaviour is likely to differ with different ethnic backgrounds (Cauce et al., 2002). Given that only 75 adolescents reported speaking only another language at home, splitting this group of adolescents into separate language groups would have resulted in very small groups with little statistical power to detect differences between groups. Therefore, while this measure was not ideal, it enabled a broad indication of the effect that coming from a non-English speaking background may have on the help-seeking behaviour of Australian adolescents. Ideally, a study that assesses the specific language adolescents spoke at home and their ethnic origin as well as the extent to which they identify with specific cultures is required; however, this was beyond the scope of the present study.

All measures used in this study were based on adolescents‟ self-report and, therefore, pose a risk of common method variance and a social desirability response bias. Furthermore, the study was limited in the socio-demographic information it could obtain from adolescents. For example, adolescents may not have accurate knowledge or recall of their father‟s or mother‟s paid employment status. However, adolescents‟ knowledge of their parents‟ paid employment status is likely to be more accurate than their knowledge of household income. Ideally, information regarding numerous economic factors, including SES, is required; however, this study was intended to provide only an initial investigation of the factors associated with stages of help-seeking among Australian adolescents.

The measure of help-seeking used in this study was based on a measure used previously in the adolescent component of the National Mental Health Survey (Sawyer et al., 2000) and was similar to other measures of help-seeking that have been used in other studies (Saunders et al., 1994; Sears, 2004). However, these measures have not been validated. A further limitation of the help-seeking measure used in this study was that it was self

reported and therefore relied on adolescents‟ subjective interpretation of i) emotional or behavioural problems, ii) whether they had experienced such problems, iii) their interpretation of what sources of help constituted professional help and iv) their perceptions of whether they had received the help they needed. While this reliance on adolescents‟ subjective perception of their behaviour may be considered a limitation, it also strengthens the study, in that the importance of adolescents‟ subjective perception is paramount to understanding their behaviour. Furthermore, adolescents‟ admission that they have emotional or behavioural problems for which they need professional help is likely to be a valid indicator that they are experiencing such problems and/or a significant level of distress. Similarly, their perceptions of whether they received the help they needed is also likely to be a valid indicator that they found the help they received as effective and as help that fulfilled their needs.

A limitation of the help-seeking measures employed by some previous studies (Saunders et al., 1994; Sears et al., 2004; Zwaanswijk, Van der Ende et al., 2003) was that they ascertained whether adolescents either attended services or sought professional help as the final stage of help-seeking, but neither of these methods established whether the adolescent perceived that the help they received fulfilled their needs. To address this issue, in this study adolescents were asked if they had received the help that they had perceived themselves to need. However, a limitation of this method is that it could not be conclusively determined from whom adolescents received the help they needed and also whether the help that was received by the adolescent was due to efforts made by the adolescent (i.e., the adolescent had sought professional help) or by someone else on their behalf, e.g., a parent, who may have encouraged them to seek professional help. While it is likely that the adolescents who perceived a need for professional help and then reported they had received the help they needed had in fact received this help from a professional

source, the study cannot conclusively determine if this was the case. Furthermore, whether adolescents who did not perceive a need for professional help but still reported they had received the help they needed actually received this help from informal sources cannot be conclusively determined from this study. In future studies, it would be useful to ask adolescents first whether they had sought professional help for themselves or if someone else had sought it on their behalf; second, whether they had received help as a result of these efforts; and third, whether they had found this help to be effective and their need(s) had been met.

Finally, this study was a cross-sectional study and, therefore, it cannot determine whether the „predictors" truly precede help-seeking behaviour. The study can only describe the process by which adolescents may seek help and the factors associated with each stage. It cannot be determined conclusively if any factor (e.g., mental health symptoms, socio-demographic characteristics or psychosocial factors) directly increased or decreased the likelihood that adolescents participated in each stage of help-seeking, or if adolescents" participation in each stage of help-seeking resulted in these factors. One possibility is that adolescents with higher levels of general mental health problems (SDQ total difficulties score) or depression (CESD score) were less likely to report they had received the help they needed because their symptoms negatively influenced their perceptions or the actual likelihood that they received the help they needed. For example, having higher levels of depression may have caused adolescents to be less likely to seek help or consider the help they received as effective, due to negative thoughts and attributions. Another possibility is that adolescents who received help may have reported a lower level of problems due to the positive effects of the intervention or the help that they received.

These limitations must be taken into account when interpreting the results of the study. However, the results still provide a valuable insight into the help-seeking behaviour of adolescents and assist in identifying the factors that are likely to affect their progression through stages of help-seeking behaviour, therefore providing a comprehensive basis to guide future research and practice in the area.

Strengths of the study

In considering the limitations of the study, the strengths of the study should also be noted. First, while the sample was school based, it was based on a large sample of adolescents from a broad sample of schools across metropolitan and non-metropolitan areas, different school types (government, Catholic and independent schools) and different SES rankings. Second, the study"s focus on adolescents" subjective reports of their help-seeking enabled an insight into their perceptions of their well-being and emotional state and their help-seeking behaviour. Third, the assessment of their level of mental health symptoms with formal measures (SDQ total difficulties score, CESD and Anxiety), in addition to the assessment of their subjectively perceived emotional or behavioural problems, allowed the study to examine how well their subjective perceptions corresponded to scores on formal measures of mental health symptoms.

This is the first study in Australia to examine the associations between adolescents" self reported help-seeking behaviour, assessed in stages, and a number of socio-demographic, psychological and psychosocial factors. Furthermore, only a few international studies (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003) have examined the relationships between different factors and adolescents" self-perceived help-seeking behaviour assessed in stages. The merits of assessing help-seeking in this way are discussed next.

Summary of results

A significant finding from this study was that different variables had differential associations with each stage of help-seeking, offering support for the distinctiveness of these stages and therefore for a model of help-seeking consisting of discrete stages. The value of this approach to assessing help-seeking behaviour is that it allows the examination of adolescents who are at the initial stages of help-seeking rather than only contrasting those who did and did not attain the final stage of help-seeking. Given that many adolescents with mental health problems do not seek or receive professional help or attend services, it is important to examine adolescents at the earlier stages of help-seeking.

The results from studies that have examined help-seeking as a one-step process and have focused only on what might be considered the final stage of help-seeking (Barker & Adelman, 1994; Boldero & Fallon, 1995; Gasquet et al., 1997; Santor et al., 2006; Schonert-Reichl & Muller, 1996) have often been inconsistent with results from studies that have examined help-seeking in stages (Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). The likely explanation for these inconsistencies is that these latter studies usually examine the relationships between certain factors and each help-seeking stage among adolescents who attained the previous stage and, therefore, these studies account for the relationships found between these factors and earlier stages of help-seeking (Saunders et al., 1994; Sears, 2004). Some studies that have assessed only the final stage of help-seeking may have detected these associations because they have not taken into account differences in earlier stages (e.g., problem recognition or perceived need for professional help).

Identifying differences between the characteristics of adolescents who are at different stages of the help-seeking process provides a more comprehensive understanding of the

factors that may facilitate and hinder help-seeking, rather than just focusing on characteristics of adolescents who do or do not seek professional help or attend services. It assists in the identification of key issues that, if addressed, may lead to an increase in adolescents‟ problem recognition and perceptions of a need for professional help and, therefore, may also lead to an increase in the proportion of adolescents receiving help. This is desirable because, as outlined in the Introduction, children and adolescents with mental health problems benefit from receiving treatment (Casey & Berman, 1985; Kazdin, 1990; Weisz et al., 1987).

The following summary provides a brief account of the results of this study for each stage of help-seeking. Detailed discussions of the results are available from each of the previous results chapters.

Problem recognition

Approximately two in five adolescents perceived themselves to have experienced emotional or behavioural problems. Of those adolescents who perceived they had experienced emotional or behavioural problems, almost half also reported they had experienced more of these problems than their peers. The following factors were found to be related to a greater likelihood of perceiving emotional or behavioural problems (beyond that explained by other factors):

- being of a female gender;
- coming from a non-English speaking background;
- having parents who did not live together; and
- having a higher level of mental health problems (SDQ, CESD and Anxiety scale).

In addition, having parents who did not live together and having a higher level of mental health problems (total difficulties, depression and anxiety) were also related to an increased likelihood of perceiving more problems than peers (beyond that explained by other factors).

Perceiving a need for professional help

Of those adolescents who perceived they had more emotional or behavioural problems than their peers, approximately one third reported a need for professional help for their problems. A substantially smaller proportion reported a need for professional help with their problems when they had perceived themselves to have emotional or behavioural problems, but not at a comparatively higher level than their peers.

Having parents who were separated or divorced and having a higher level of mental health problems (SDQ, CESD and Anxiety scale) were related to a greater likelihood of perceiving a need for professional help (beyond that explained by other factors).

Receiving the help that was needed (when a need for professional help was identified)

Approximately one third of the adolescents who perceived themselves to have emotional or behavioural problems and a need for professional help with such problems reported they had received the help they needed for their problems. Furthermore, few factors were found to be significantly associated with adolescents‟ reports they had received the help they needed when they had also perceived a need for professional help.

There was little evidence that socio-demographic characteristics had any meaningful relationships with adolescents‟ reports they had received the professional help they had perceived themselves to need. Furthermore, while having higher levels of total difficulties and depression were related to a decreased likelihood of adolescents‟ reports they had

received the help they needed, the variability in receiving help that was explained by these measures was very small. The results also indicated that these associations were explained by levels of psychosocial functioning (constructive problem solving, social support and interpersonal skills).

In addition, adolescents with higher levels of constructive problem solving and perceived levels of family support were more likely to report they had received the help they needed. This was an important finding given that few of the main factors investigated in this study were found to be strongly related to adolescents‟ reports they had received the help they needed.

Results of subsidiary analyses: Receiving the help that was needed (when a need for professional help was not identified)

A proportion of adolescents reported they had received the help they needed although they had not perceived a need for professional help. These adolescents were investigated in subsidiary analyses (Chapter 10). Among this group of adolescents, females were more likely to report they had received the help they needed, beyond that explained by levels of mental health symptoms, as were those whose mothers who were not working in paid employment. These results contrasted to those found among adolescents who perceived a need for professional help as none of the socio-demographic factors were found to be significantly associated with adolescents‟ reports they received the help they needed among this latter group.

Among adolescents who did not perceive a need for professional help, those with higher levels of mental health problems (SDQ, CESD and Anxiety scale) were less likely to report they had received the help they needed. This was similar to results found among the previous group of adolescents (those who had perceived a need for professional help).

However, once again, the variability in receiving help that was explained by these measures was very small and the results also indicated that these associations were at least partially explained by levels of psychosocial functioning. Also, similar to findings among the previous group of adolescents, those with higher levels of constructive problem solving and perceived levels of family support were more likely to report they had received the help they needed.

Implications and recommendations

The present study identified several areas that, if addressed, may lead to improvement in adolescents‟ help-seeking behaviour and thus better outcomes for adolescents who experience emotional or behavioural problems.

The disparity between perceiving a need for professional help and reported rates of receiving help

Despite perceiving themselves to have emotional or behavioural problems and a need for professional help, it is apparent from this study that many adolescents did not receive the help they actually perceived themselves to need. This may occur because adolescents believe there is a stigma associated with seeking help for emotional or behavioural problems. It is likely that adolescents do not like to be perceived as “abnormal” by their peers and, therefore, are likely to feel pressure to keep their problems to themselves and ignore emotional or behavioural problems. Attesting to this, Sawyer et al. (2000) reported that 14% of adolescents who met the criteria for mental health problems but had not sought professional help reported that they had not sought help because they were afraid of what people would think. Furthermore, Raviv et al. (2000) found that adolescents demonstrate a reluctance to seek help for themselves for problems for which they realise others need help.

Anti-stigma campaigns may be beneficial in reducing the effect of social barriers to help-seeking for adolescents. Such campaigns may reduce the stigma associated with acknowledging mental health problems and seeking professional help for these problems. In addition, educating adolescents and their parents, caregivers and teachers about the prevalence of mental health problems may raise the awareness of such problems and, therefore, also reduce the stigma associated with having and acknowledging emotional or behavioural problems.

Mental health problems

Problem recognition and perceiving a need for professional help

The results of this study suggested that, as adolescents" levels of total difficulties (SDQ total difficulties scores), depression (CESD scores) and anxiety (Anxiety scores) increased in severity, the proportion of adolescents who perceived themselves to have emotional or behavioural problems, more problems than their peers and a need for professional help also increased in an almost linear fashion. These results suggest that many adolescents are not engaging in these early stages of help-seeking (e.g., problem recognition or perceiving a need for professional help) until their symptoms become quite severe.

Mental health literacy

The term "Mental Health Literacy" pertains to the „„knowledge and beliefs about mental disorders which aid their recognition, management or prevention" (p. 182; Jorm et al., 1997). Adolescents have demonstrated varying abilities to recognise symptoms of depression in another person (a hypothetical character; Burns & Rapee, 2006) and limited knowledge as to where to seek help for mental health problems (Kuhl et al., 1997; Sawyer

et al., 2000). This lack of mental health literacy can act as a barrier to adolescents seeking professional help.

Increasing adolescents‟ knowledge of the signs and symptoms of mental health problems may facilitate earlier recognition of problems and also assist them in identifying the point at which problems are severe enough to require professional help. Early identification of problems and earlier recognition of a need for professional help with such problems may lead to receiving appropriate intervention sooner as well as better outcomes for adolescents.

Therefore, there is a need to increase adolescents‟ levels of mental health literacy with respect to all mental health problems. This includes increasing adolescents‟ knowledge of mental health problems to assist them in recognising when symptoms are problematic, the point at which such symptoms require professional help and how appropriate help can be sought. The need to increase adolescents‟ levels of mental health literacy has been recognised through school based interventions and prevention programs such as the *bb*SRI (Sawyer et al., in press) and the MindMatters initiative (Wyn et al., 2000). School-based initiatives are an efficient vehicle to implement such education programs, given the almost universal access to young people in schools.

Emotional competence

In addition to requiring knowledge of mental health problems (mental health literacy), the ability to recognise symptoms of distress as emotional or behavioural problems necessitates adolescents being able to understand their thoughts and feelings and being able to articulate them to others. This knowledge is referred to as emotional competence or intelligence (Ciarrochi et al., 2003). Conceptually, it seems reasonable to assume that adolescents‟

levels of emotional competence will influence their ability to recognise when they have emotional or behavioural problems, their decision to seek help for such problems and their ability to articulate these problems to others, which likely influences whether they will receive appropriate help. Previous studies have found that adolescents who were low in emotional competence were less likely to seek help from informal sources (e.g., parents, friends, teachers or clergy) for emotional problems and suicidal ideation (Ciarrochi et al., 2002; Ciarrochi et al. 2003). They were also less likely to seek help from formal sources (mental health professionals, doctors, teachers and priests) for suicidal ideation (Ciarrochi et al., 2003). Therefore, increasing adolescents‟ levels of emotional competence may increase their ability to recognise when they have an emotional or behavioural problem for which they need help and their ability to alert others when they experience these problems.

Receiving the help that was needed

The present results indicated that adolescents with higher levels of mental health problems were less likely to report they had received the help they needed. However, these associations were, in the most part, explained by levels of psychosocial functioning. Furthermore, due to the cross sectional nature of this study, it cannot be determined whether having higher levels of these mental health symptoms impeded adolescents‟ help-seeking behaviour and, therefore, the likelihood they reported they received the help they needed, or, conversely, whether adolescents‟ levels of symptoms had improved due to the positive effects of receiving help. However, other studies conducted in the area found that adolescents with higher levels of suicidal ideation had lower intentions of seeking help for suicidal problems (Deane et al., 2001; Wilson et al., 2005). Because these studies assessed help-seeking intentions, the associations found by these studies are unlikely to be due to the positive effects of intervention.

The help-negation effect

As previously mentioned, this negative association has been described as consistent with the theory of „help-negation" (Carlton & Deane, 2000). This theory suggests that adolescents with high levels of suicidal ideation may be less likely or willing to seek professional help, or less receptive to receiving treatment, due to their levels of hopelessness, pessimism and cynicism regarding the value of treatment (Rudd et al., 1995). The previous studies that have found this negative association have primarily found it with suicidal ideation (Barnes et al., 2001; Carlton & Deane, 2000; Deane et al., 2001; Saunders et al., 1994); however, the results of this study suggest this pattern may also be relevant for other mental health problems.

The results of the present study additionally suggest that the negative relationship found between levels of mental health problems and receiving the help that was needed may be, at least partially, explained by adolescents" levels of psychosocial functioning. For example, adolescents with higher levels of mental health problems are likely to have lower levels of psychosocial functioning, which may inhibit their help-seeking behaviour. Therefore, adolescents with higher levels of depression may have been less likely to have received the help they needed because they had lower levels of social support, constructive problem solving ability and interpersonal skills, which inhibited their efforts to seek professional help and decreased the likelihood of receiving the help they needed.

There is a need to alert the carers of adolescents to the fact that, while adolescents with mental health problems are generally reluctant to seek help, those with severe mental health problems may be even more reluctant to seek professional help. These adolescents may be pessimistic about the outcomes of treatment as a result of the depressive symptoms and suicidal ideation they experience and, therefore, may require assistance to access the help

they need. Furthermore, as suggested by Saunders et al. (1994), these adolescents may experience co-morbid problems, such as conduct problems, that interfere with establishing a therapeutic alliance and may, as a result, discourage adolescents from seeking professional help. Such problems could also affect their receptiveness to treatment when they receive it (perceiving the help they received as useful or effective). These adolescents are also likely to have impaired problem solving skills and interpersonal skills, as well as lower levels of perceived social support, which would also inhibit their help-seeking behaviour.

Constructive problem solving and coping skills

The results of this study suggest that adolescents" levels of constructive problem solving had a significant role in the final stage of help-seeking, such that those with higher levels of constructive problem solving skills were more likely to report they had received the help they needed. This was evident among adolescents who did and did not perceive a need for professional help, suggesting that higher levels of constructive problem solving are likely to be related to an increased likelihood of receiving the help that was needed from both professional and informal sources of help. It is also possible that adolescents who reported they had received the help they needed had higher levels of constructive problem solving ability as a direct result of the help they had received. However, problem solving and coping skills have been incorporated into models of help-seeking behaviour such that they are likely to facilitate help-seeking (Andersen, 1995; Srebnik et al., 1996). If interpreted in this context, it is most likely that having higher levels of problem solving and coping ability will facilitate the help-seeking process.

Many adolescents do not have prior experience or knowledge of help-seeking for emotional or behavioural problems on which they can draw to cope with new emotional or

behavioural problems and feelings they may encounter. Learning appropriate coping skills and problem solving skills can equip adolescents with resources and strategies that may be used throughout life to assist them to cope with problems effectively. Adolescents would most likely benefit from prevention or intervention programs aimed at improving their problem solving and coping skills to assist them in the way they experience and cope with problems. Furthermore, given that adolescence is a time of increasing autonomy, they may feel inclined or prefer to deal with problems alone. Therefore, adolescents may particularly benefit from learning problem solving and coping skills that incorporate seeking support to deal with problems.

Social support

Social relationships and social networks have been identified as barriers to help-seeking on one end of the continuum and as facilitators and enabling factors at the other end (Andersen, 1995; Andersen & Newman, 1973; Rickwood et al., 2005; Srebnik et al., 1996). For example, social support networks may facilitate the help-seeking process by encouraging adolescents to seek help from professional sources. This is conditional on adolescents‟ willingness to seek help from the support network and that the social support network is encouraging of seeking professional help (Cauce et al., 2002). Conversely, social support networks may hinder adolescents‟ help-seeking when the network discourages the adolescent from seeking professional help, or when the informal source of help is perceived as a sufficient source of help by the adolescent or the source itself.

A number of studies has found adolescents who reported they used informal support were more likely to report they sought help from professionals, providing evidence that social support can be a facilitator of seeking help (Barker & Adelman, 1994; Saunders et al., 1994; Schonert-Reichl & Muller, 1996). The current study found that adolescents with

higher levels of perceived support from family, friends and a significant other were more likely to report they had received the help they needed, suggesting higher levels of social support facilitated adolescents to receive the help they needed. It is also possible that receiving the help they needed increased adolescents‟ perceptions of having higher levels of support. However, most models of help-seeking have conceptualised social networks and relationships to be part of the help-seeking pathway and postulate that they can impact whether adolescents seek professional help or attend services (Andersen, 1995; Andersen & Newman, 1973; Rickwood et al., 2005; Srebnik et al., 1996). If interpreted within this context, the results suggest that increasing levels of support may encourage adolescents to seek both professional help and help from informal sources, thereby increasing likelihood of receiving effective help. Therefore, adolescents should be encouraged to establish, develop and maintain supportive relationships.

Mental health literacy of support networks

As previously noted, in order to facilitate professional help-seeking, the support network must be encouraging of adolescents seeking professional help. Help-seeking can be inhibited when social norms are not congruent with seeking professional help, or when the source of informal help is perceived as sufficient by the adolescent or the source of informal support (Cauce et al., 2002; Kuhl et al., 1997). Therefore, in addition to increasing the mental health literacy of adolescents, increasing the mental health literacy of the support network (e.g., caregivers of adolescents, teachers, or peers) may assist in the help-seeking process.

There are programs that train people in “first aid” responses to mental health problems (Kitchener & Jorm, 2006). Such programs are likely to be relevant for carers of adolescents; however, given that many studies have demonstrated that adolescents prefer to

seek help from their peers over all other sources of help (Deane et al., 2001; Raviv et al., 2000; Wintre & Crowley, 1993), it is also important that adolescents learn to support and assist their peers appropriately. Therefore, adolescents would also benefit from a peer training program that is relevant to adolescents and trains them in similar skills. A program aimed at educating adolescents in appropriate responses to peers with signs and symptoms of mental health problems may increase the capacity, confidence and willingness of adolescents to appropriately advise and assist their peers in the help-seeking process, thereby facilitating appropriate help-seeking behaviour. This may be most efficiently achieved through school based intervention and prevention programs and would complement programs that educate adolescents in mental health literacy and other life skills, such as problem solving and coping skills.

Gender

The results of this study suggested that females were more likely than males to perceive themselves to have emotional or behavioural problems and that this relationship was not explained by their levels of mental health problems (SDQ total difficulties scale, CESD and Anxiety scale). These results are consistent with the findings of previous studies that also found a similar gender difference among adolescents in the earlier stages of help-seeking, but not in the rate at which adolescents reported seeking professional help (Saunders et al. 1994; Sears, 2004).

It is possible that females were more likely than males to perceive themselves to have emotional or behavioural problems because they had higher levels of emotional competence than males. As noted earlier, there is a need to increase levels of emotional competence among all adolescents; however, this need may be especially pertinent for males. For example, Ciarrochi et al. (2003) found that female adolescents had higher levels

of emotional competence and help-seeking intentions than males. Males may need additional training to assist them in learning how to identify their emotions and how to vocalise their feelings and emotional needs.

As noted previously, for all adolescents there may be a stigma associated with seeking help for emotional or behavioural problems, but this stigma may be intensified for certain groups of adolescents, e.g., males. Cauce et al. (2002) suggested that adolescents may conform to gender roles/stereotypes from family, friends and media that portray help-seeking behaviour as a dependent and interpersonal behaviour that is more characteristic of females (Archer, 1996; Stefic & Lorr, 1974). Therefore, adolescents of both genders may feel it is more acceptable for females to seek help and, consequently, females may feel more comfortable than males in acknowledging they have emotional or behavioural problems.

Males may require reassurance that it is acceptable for them to express their feelings and emotions despite societal pressure to conform to gender role stereotypes (Cauce et al., 2002). This may be achieved through anti-stigma campaigns aimed at males to reduce the embarrassment associated with acknowledging mental health problems and seeking professional help. In addition, educating adolescents and their carers about the barriers that adolescents may encounter to seeking help may alert them to be sensitive to problems in those who are at risk (e.g., males) and the repercussions of not acknowledging problems or receiving help for emotional or behavioural problems.

Parental Status

Several studies have found a link between adolescents‟ parental status and their help-seeking behaviour (Barker & Adelman, 1994; Laitinen-Krispijn et al., 1999; Saunders et al., 1994; Sears, 2004; Zwaanswijk, Van der Ende et al., 2003). Likewise, the results of the

current study indicated that: i) adolescents with parents not living together were significantly more likely than those with parents who lived together to perceive themselves to have emotional or behavioural problems; and ii) adolescents with divorced or separated parents were more likely than those with parents who lived together to perceive a need for professional help with their emotional or behavioural problems. These results suggested that having certain parental situations, e.g., divorced or separated parents or parents not living together, was related to an increased likelihood that adolescents not only perceived themselves to have emotional and behavioural problems, but also the likelihood they perceived a need for professional help with these problems, regardless of their levels of mental health symptoms. Adolescents who have experienced recent family upheaval or conflict may more readily perceive themselves to have problems and be more sensitised to problems. They may assume they need professional help due to their parental situation, e.g., if they have divorced or separated parents or have one or more parents deceased, regardless of their actual level of distress. Furthermore, their family situations may provide them with an external justification for acknowledging they have emotional and behavioural problems, which may result in them feeling more comfortable reporting such problems and a need for professional help with these problems.

Despite the apparent increased levels of problem recognition and perceived need for professional help among adolescents from certain parental situations, these adolescents were not more likely to report they had received the help they needed. While only speculative, it is possible that having certain parental situations is only related to internal recognition processes (i.e., problem recognition and perceiving a need for professional help), and not the behaviours involved in receiving appropriate help, e.g., telling others of their problems and hence seeking help. Perhaps these adolescents were reluctant to seek help because their problems stemmed from their family situations and, hence, they may

have felt obligated to keep such problems within the family and deal with them themselves. Furthermore, if their problems originated from recent family conflict or upheaval (e.g., separation or divorce or death of a parent), they may feel they should not place any additional emotional burden on their parents/caregivers by alerting them to their own problems. While this is only speculative, these findings may suggest that adolescents with parents who are divorced or separated or not living together need reassurance that it is acceptable for them to seek help for their emotional or behavioural problems. This may highlight a need to educate parents/families to be sensitive to adolescents" emotional and behavioural problems, particularly when they have experienced a recent separation or divorce, death of a parent or family conflict/upheaval.

Ethnicity

There are very few studies that relate specifically to help-seeking for mental health problems among adolescents from ethnic minority groups, with no studies of this nature conducted in Australia (Cauce et al., 2002; Rickwood et al., 2007). However, adolescents" ethnic origin and cultural background are likely to play an important part in whether they perceive themselves to have emotional or behavioural problems and subsequently seek professional help, with researchers acknowledging adolescents from ethnic minority groups may be less likely to seek and/or receive professional help for mental health problems or attend services (Cauce et al., 2002; Rickwood et al., 2007).

A few studies conducted in the USA have found that adolescents from an ethnic minority background are less likely to seek professional help or attend services and encounter more barriers to seeking professional help than those who were not from an ethnic minority background (Kataoka et al., 2002; Kuhl et al., 1997; Zhang et al., 1998). In this study, adolescents who spoke predominantly another language at home were found to be less

likely to perceive they had emotional or behavioural problems than those who spoke English at home. While the specific ethnic origin of these adolescents could not be determined, these results suggest that adolescents from a non-English speaking background who are likely to be from an ethnic minority group in Australia may be less likely to perceive themselves to have emotional or behavioural problems than adolescents from an English speaking background. It is interesting to note that there was no relationship found between speaking a language other than English at home and perceiving a need for professional help or their reports they received the help they needed in this study. This was likely due to the smaller number of adolescents in these analyses and also because language differences in problem recognition had already been taken into account.

It is possible that some cultures may be more accepting of psychological symptoms as normal and some cultures advocate dealing with problems independently or within family/cultural groups. Therefore adolescents from these cultures may feel it is less acceptable to acknowledge or report they have emotional or behavioural problems, particularly to those outside their cultural group or family (Cauce et al., 2002). Adolescents from culturally and linguistically diverse backgrounds may also experience barriers to attending services due to language and cultural differences (Cauce et al., 2002; Rickwood et al., 2007). Adolescents from linguistically diverse backgrounds (and their parents) may have difficulty articulating problems to others and may therefore be less comfortable seeking out sources of professional help to assist with problems. They also may feel intimidated by attending formal services and professionals.

As noted previously, anti-stigma campaigns may be beneficial in reducing the effect of social and cultural barriers to help-seeking for adolescents, particularly among certain groups such as ethnic minorities. Furthermore, mental health services in Australia need to

address the diverse needs of adolescents from culturally and linguistically diverse backgrounds to ensure they are comfortable seeking out and using such services. This may be achieved by conscripting influential members of cultural groups that can assist services and mental health workers to establish relationships with ethnic minority groups and also to actively promote these services, as well as refer people experiencing mental health problems to these services.

Parental paid employment

In this study, father‟s and mother‟s paid employment status was used as an indication of the resources available to parents, e.g., financial resources, to assist adolescents‟ in the help-seeking process. While mother‟s and father‟s paid employment status is not a true financial indicator, there was limited availability of other indicators of household income as the study was restricted to adolescents‟ self-reported information. Results of the present study indicated that the influence of father‟s paid employment was predominantly in the stage of problem recognition, rather than with adolescents‟ reports they received the help they needed; however, this association was largely driven by levels of mental health problems (scores on the SDQ total difficulties scale, the CESD scale and the Anxiety scale). In contrast, mother‟s paid employment status was found to be more strongly related to adolescents‟ reports they received the help they needed; but this relationship was only evident among adolescents who did not perceive a need for professional help. Therefore, these results also suggest that mother‟s paid employment status was not strongly related to adolescents‟ perceptions they received the help they needed from professional sources of help in this study.

These findings should be considered with the limitation that father‟s and mother‟s paid employment status are unlikely to be a comprehensive assessment of the financial

constraint experienced by a household. Furthermore, adolescents may not have accurately recalled this information. Therefore, the impact of household income or other socio-economic indicators on adolescents‟ help-seeking should not be underestimated based on these results. Results of another Australian study, which relied on parental report, have suggested there may be financial barriers to accessing services in Australia for adolescents (Sawyer et al., 2000); therefore, a more detailed assessment of household income may be required to detect such relationships.

Parental paid employment status is only one of the many factors which comprise the complex construct of SES. SES is commonly cited in theoretical models of help-seeking as a facilitator or barrier to seeking professional help and attending services (Andersen & Newman, 1973; Srebnik et al., 1996), although, the association between SES and adolescents‟ help-seeking is likely to be dependent on the health system of the country in which the study is being conducted. Mental health services in Australia need to reduce financial and socio-economic barriers to seeking professional help. This may be achieved through the promotion of mental health services through media that are non-threatening to people of a lower SES, for example through services they commonly access (e.g., local GP, Centrelink), and through ensuring affordability of services. Ensuring equitable access to services is a priority for mental health services in Australia. Mental health services should traverse all socio-economic groups, cultures and language groups.

Directions for future research

While the model of help-seeking employed by this study offers a framework for understanding adolescent help-seeking, the data were collected from adolescents at one point in time. Therefore, a longitudinal study that follows adolescents over time is needed to confirm the stages of help-seeking and the actual process by which adolescents seek

help. Such a study would also enable the identification of factors associated with adolescents‟ progression through the help-seeking process and would enable the determination of whether mental health problems are antecedents or outcomes of stages of help-seeking. For example, such a study would assist in determining the extent to which adolescents‟ levels of mental health problems impede help-seeking and, conversely, to what extent adolescents‟ levels of mental health problems are improved by seeking and receiving help from different sources of help.

As previously noted, this study differed from previous studies (Saunders et al., 1994; Sears, 2004) as it did not ascertain as the final stage of help-seeking whether adolescents sought professional help, but determined whether they had received the help that they perceived themselves to need. However, further research is needed that combines these approaches to assessing help-seeking. For example, it would be useful to assess whether: i) adolescents sought help for themselves or someone else sought it on their behalf; ii) whether they received help and details about the type of help that was received; and iii) whether they felt this help fulfilled their need(s) and/or was beneficial and effective. It would also be valuable to determine whether adolescents‟ perceptions that the help that they received was useful or effective varied by the types of mental health symptoms adolescents experience, the type of help they received and whether help was sought by themselves or someone else on their behalf.

Final conclusion

This study highlights the need to increase the proportion of adolescents who seek professional help for their mental health problems, as many adolescents who perceived they had emotional or behavioural problems and who perceived they required professional help with such problems did not feel they received the help that they needed. Studies such

as this, which identify the factors associated with individual stages of the help-seeking process, can provide insight into possible facilitators and barriers to help-seeking as well as possible areas of modification that may be addressed to increase the proportion of adolescents who receive timely and appropriate help. Ideally, longitudinal research is needed to validate the stages of help-seeking and the relationships between factors of adolescents‟ progression through each stage of help-seeking. However, cross sectional studies such as the current study serve as an initial examination and snapshot of the factors associated with Australian adolescents‟ help-seeking behaviour, assessed as a series of stages, and also identify several areas of possible modification through which adolescent help-seeking behaviour may be improved.

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APPENDIX A: *beyondblue* STUDENT SURVEY

NOTE:
Appendix A is included in the print copy of the thesis held in the University of Adelaide Library.

APPENDIX B: ADDITIONAL RESULTS

Table B1

Results of multivariable logistic regression analyses with the SDQ total difficulties score, the CESD score and the Anxiety score as predictors of the outcome variable "perceiving emotional or behavioural problems" individually adjusting for psychosocial variables

Scale	Multivariable *n*=5395		*p* value	Adjusting forSocial Support *n*=5384		*p* value	Adjusting for Interpersonal skills *n*=5085		*p* value	Adjusting for Constructive Problem Solving *n*=5370		*p* value
	OR	95% *CI*		*OR*	95% *CI*		*OR*	95% *CI*		*OR*	95% *CI*	
SDQ Tot	1.71	1.56-1.87	<.001	1.73	1.58-1.90	<.001	1.83	1.65-2.02	<.001	1.75	1.59-1.92	<.001
CESD	2.17	1.97-2.39	<.001	2.10	1.90-2.32	<.001	2.16	1.95-2.40	<.001	2.19	1.98-2.41	<.001
Anxiety	1.10	1.01-1.19	.023	1.10	1.01-1.19	.033	1.07	.98-1.17	.123	1.09	1.01-1.17	.050

Note. *OR* = Odds ratio per standardised unit in the predictor; *CI* = Confidence Interval; SDQ Tot = SDQ Total difficulties score.

Table B2

Results of multivariable logistic regression analyses with the SDQ total difficulties score, the CESD score and the Anxiety score as predictors of the outcome variable "perceiving more problems than peers" individually adjusting for psychosocial variables

Scale	Multivariable *n*=2140		*p* value	Adjusting for Social Support *n*=2139		*p* value	Adjusting for Interpersonal skills *n*=2019		*p* value	Adjusting for Constructive Problem Solving *n*=2126		*p* value
	OR	95% *CI*		*OR*	95% *CI*		*OR*	95% *CI*		*OR*	95% *CI*	
SDQ Tot	1.37	1.20 - 1.55	<.001	1.36	1.20-1.55	<.001	1.41	1.22-1.63	<.001	1.42	1.47-1.86	<.001
CESD	1.64	1.46-1.84	<.001	1.62	1.44-1.82	<.001	1.63	1.45-1.85	<.001	1.66	1.24-1.62	<.001
Anxiety	1.06	.96 - 1.17	.283	1.06	.95-1.17	.314	1.08	.97-1.21	.170	1.04	.94-1.22	.423

Note. *OR* = Odds ratio per standardised unit in the predictor; *CI* = Confidence Interval; SDQ Tot = SDQ Total difficulties score.

Table B3

Results for multivariable logistic regression analyses of "perceiving emotional and behavioural problems", individually and simultaneously adjusting for SDQ, CESD and Anxiety scores

Demographic Characteristic	All socio-demographics entered simultaneously (*n*=5312)		Adjusting for SDQ (*n*=5273)		Adjusting for CESD (*n*= 5209)		Adjusting for anxiety (n= 5247)		With All Covariates (*n*=5135)	
	OR	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*	*OR*	95% *CI*
Gender										
Male	1.00		1.00		1.00		1.00		1.00	
Female	1.70***	1.56-1.94	2.05***	1.81-2.34	1.49***	1.31-1.69	1.41***	1.25-1.59	1.73***	1.51-1.98
Language spoken at home										
English	1.00		1.00		1.00		1.00		1.00	
English & another language	1.13	.92-1.28	1.14	.94-1.39	1.10	.90-1.34	1.03	.85-1.24	1.09	.89-1.34
Another language	.57*	.32-.90	.53*	.29-.98	.46*	.25-.87	.49*	.27-.88	.43*	.23-.84
Parental status										
Parents living together	1.00		1.00		1.00		1.00		1.00	
Separated/ divorced	1.83***	1.60-2.08	1.54***	1.33-1.79	1.60***	1.38-1.86	1.79***	1.57-2.07	1.52***	1.30-1.77
One or more parent deceased	2.54***	1.52-4.24	2.46**	1.38-4.36	2.15*	1.18-3.89	2.50**	1.45-4.30	2.37**	1.29-4.35
Parents never lived together	2.44**	1.34-4.47	2.02*	1.03-3.95	1.96*	1.01-3.82	2.11*	1.10-4.05	2.13*	1.04-4.38
Other parental situation	2.36***	1.53-3.64	2.09**	1.29-3.38	1.86*	1.11-3.12	2.40***	1.51-3.81	1.95*	1.16-3.28
Mother"s paid employment										
Full time	1.00		1.00		1.00		1.00		1.00	
Part time	.88	.79-1.02	.91	.79-1.06	.91	.78-1.05	.89	.77-1.02	.93	.80-1.08
Not working	.95	.90-1.18	.94	.80-1.11	.98	.83-1.15	.95	.81-1.10	.98	.83-1.16
Retired	1.23	.85-2.16	.99	.55-1.76	.98	.55-1.76	1.23	.71-2.12	.97	.53-1.79
Father"s paid employment										
Full time	1.00		1.00		1.00		1.00		1.00	
Part time	1.32**	1.22-1.73	1.05	.86-1.30	1.12	.91-1.38	1.24*	1.03-1.51	1.06	.86-1.32
Not working	1.17	1.14-1.73	.91	.71-1.17	.90	.69-1.16	1.08	.85-1.37	.82	.63-1.07
Retired	1.09	.92-1.96	.94	.59-1.48	.97	.62-1.54	1.12	.73-1.73	.91	.56-1.46

*p<.05, **p<.01, ***p<.001.

Table B4

Mean (SD) scores of the SDQ total difficulties scale, the CESD scale and the Anxiety scale for each language category, among adolescents in the Emotional or Behavioural Problems group[a]

Scores	*n*	Language spoken at home			*F* (*df1,df2*)	*p* value
		English	English and another language	Another language		
SDQ total difficulties	2204	15.10 (6.23)	14.98 (6.31)	16.75 (5.26)	.75 (2,2203)	.471
CESD	2177	20.84 (12.57)	20.64 (11.87)	22.50 (13.23)	.19 (2,2176)	.824
Anxiety	2190	8.83 (5.09)	9.49 (5.36)	8.89 (6.07)	1.98 (2,2189)	.139

[a] Perceived they had emotional or behavioural problems.

Table B5
Results for multivariable logistic regression analyses of the outcome variable "perceiving more problems than peers", adjusting individually and simultaneously for adolescents" SDQ, CESD and Anxiety scores

Demographic characteristic	All socio-demographics entered simultaneously (n=2229)		Adjusting for SDQ (*n*=2073)		Adjusting for CESD (*n*=2052)		Adjusting for anxiety (*n*=2061)		Adjusting for all covariates (*n*=2022)	
	OR	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*
Gender										
Male	1.00		1.00		1.00		1.00		1.00	
Female	1.27*	1.06-1.52	1.41***	1.17-1.72	1.10	.91-1.34	1.11	.92-1.34	1.20	.98-1.47
Language spoken at home										
English	1.00		1.00		1.00		1.00		1.00	
English & another language	1.31*	1.04-.71	1.37*	1.04-1.82	1.34*	1.01-1.78	1.27	.96-1.68	1.38*	1.02-1.84
Another language	1.79	.71-4.52	1.58	.60-4.14	1.57	.57-4.31	1.66	.63-4.42	1.32	.47-3.70
Parental Status										
Parents living together	1.00		1.00		1.00		1.00		1.00	
Separated/ divorced	1.36**	1.12-1.65	1.27*	1.04-1.56	1.26*	1.02-1.55	1.41**	1.15-1.72	1.29*	1.04-1.59
One or more parent deceased	1.48	.77-2.86	1.44	.72-2.87	1.36	.65-2.81	1.43	.73-2.82	1.40	.67-2.93
Parents never lived together	1.12	.52-2.40	1.19	.54-2.63	1.15	.51-2.58	1.05	.48-2.29	1.17	.52-2.65
Other parental situation	1.14	.65-2.01	1.23	.67-2.24	.92	.49-1.73	1.19	.66-2.14	1.03	.54-1.95
Mother"s paid employment										
Full time	1.00		1.00		1.00		1.00		1.00	
Part time	.79*	.64-0.98	.80*	.64-.99	.80	.67-1.01	.79*	.64-.98	.80	.64-1.00
Not working	.84	.67-1.05	.80	.63-1.01	.84	.66-1.07	.82	.65-1.03	.80	.62-1.02
Retired	1.02	.49-2.14	.85	.38-1.87	.84	.38-1.87	.91	.42-1.98	.76	.33-1.72
Father"s paid employment										
Full time	1.00		1.00		1.00		1.00		1.00	
Part time	1.33*	1.09-1.86	1.26	.95-1.68	1.27	.95-1.69	1.38*	1.05-1.82	1.26	.94-1.69
Not working	1.24	.91- .73	1.15	.82-1.61	1.14	.80-1.62	1.25	.89-1.74	1.13	.79-1.62
Retired	1.41	.76-2.63	1.39	.71-2.72	1.44	.74-2.81	1.39	.73-2.68	1.39	.69-2.79

*p<.05, **p<.01, ***p<.001.

Table B6

Results of multivariable logistic regression analyses with the SDQ total difficulties score, the CES-D score and the Anxiety score as predictors of the outcome variable "perceiving a need for professional help" among adolescents in the Comparable Problems group[a] *individually adjusting for psychosocial variables*

Scale	Multivariable *n*=1166		*p* value	Adjusting for Social Support *n*=1166		*p* value	Adjusting for Interpersonal skills n=1105		*p* value	Adjusting for Constructive Problem Solving *n*=1157		*p* value
	OR	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*	
SDQ Tot	1.62	1.21-2.15	.001	1.57	1.17-2.10	.003	1.49	1.08-2.08	.017	1.62	1.21-2.18	.001
CES-D	1.68	1.29-2.17	<.001	1.60	1.23-2.10	.001	1.69	1.28-2.27	<.001	1.69	1.30-2.21	<.001
Anxiety	1.07	.85-1.35	.573	1.08	.85-1.37	.518	1.10	.85-1.43	.459	1.06	.83-1.35	.641

Note. *OR* = Odds ratio per standardised unit in the predictor; *CI* = Confidence Interval; SDQ Tot = SDQ Total difficulties score.

[a] Adolescents who perceived themselves to have emotional or behavioural problems, but not more than their peers.

Table B7

Results of multivariable logistic regression analyses with the SDQ total difficulties score, the CES-D score and the Anxiety score as predictors of the outcome variable "perceiving a need for professional help" among adolescents in the More Problems group[a] individually adjusting for psychosocial variables

Scale	Multivariable *n*= 967		*p* value	Adjusting for Social Support *n*=966		*p* value	Adjusting for Interpersonal skills *n*=907		*p* value	Adjusting for Constructive Problem Solving *n*=962		*p* value
	OR	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*	
SDQ Tot	1.31	1.08-1.59	.007	1.30	1.06-1.58	.011	1.56	1.25-1.95	<.001	1.35	1.10-1.64	.004
CES-D	1.59	1.35-1.87	<.001	1.58	1.34-1.87	<.001	1.52	1.28-1.81	<.001	1.60	1.35-1.88	<.001
Anxiety	1.13	.98-1.30	.095	1.13	.98-1.30	.101	1.16	.99-1.35	.061	1.12	.98-1.29	.103

Note. OR = Odds ratio per standardised unit in the predictor; CI = Confidence Interval; SDQ Tot = SDQ Total difficulties score.

[a] Adolescents who perceived themselves to have more emotional or behavioural problems than their peers.

Table B8

Results for multivariable logistic regression analyses of "perceiving a need for professional" help among adolescents in the Comparable Problems group[a] adjusting individually and simultaneously for SDQ, CESD and Anxiety scores

Socio-demographic characteristics	*n*	All socio-demographics entered (*n*=1123)		Adjusting for SDQ score (*n*=1150)		Adjusting for CES-D score (*n*=1139)		Adjusting for anxiety score (*n*=1141)		Adjusting for all covariates (*n*=1123)	
		OR	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*
Gender											
Male	461	1.00		1.00		1.00		1.00		1.00	
Female	662	1.24	.80-1.85	1.46	.94-2.26	.98	.63-1.53	1.01	.66-1.56	1.09	.69-1.74
Parental Status											
Parents living together	759	1.00		1.00		1.00		1.00		1.00	
Separated/ divorced	306	1.96**	1.27-3.03	1.81*	1.16-2.85	1.71*	1.08-2.71	2.02**	1.29-3.16	1.73*	1.08-2.77
One or more parent deceased	17	3.04	.84-11.05	3.57	.92-13.87	3.06	.75-12.5	3.15	.84-11.81	3.81	.92-15.8
Parents never lived together	15	1.00	.13-7.89	1.06	.13-8.71	.92	.11-7.5	.85	.11-6.82	.99	.12-8.23
Other parental situation	26	5.18**	2.05-13.09	7.6***	2.83-20.36	4.73**	1.67-13.43	6.15***	2.30-16.42	6.82***	2.35-19.8
Mother"s paid employment											
Full time	431	1.00		1.00		1.00		1.00		1.00	
Part time	377	1.05	.65-1.68	1.07	.66-1.75	1.05	.64-1.72	1.06	.65-1.72	1.11	.67-1.83
Not working	299	.92	.55-1.55	.84	.49-1.44	.84	.48-1.47	.85	.50-1.46	.80	.45-1.43
Retired	16	.82	.09-7.17	.64	.07-5.72	.57	.06-5.51	.82	.09-7.27	.55	.06-5.26
Father"s paid employment											
Full time	897	1.00		1.00		1.00		1.00		1.00	
Part time	121	.78	.39-1.54	.65	.32-1.31	.78	.39-1.59	.70	.35-1.41	.69	.33-1.41
Not working	84	.74	.34-1.64	.71	.31-1.63	.72	.31-1.67	.64	.27-1.52	.60	.24-1.48
Retired	21	.46	.05-3.89	.61	.07-3.13	.58	.07-5.02	.50	.06-4.24	.64	.08-5.43

[a] Adolescents who perceived they had more emotional or behavioural problems than their peers.

*p<.05, **p<.01, ***p<.001.

Table B9

Results for multivariable logistic regression analyses of "perceiving a need for professional help" among adolescents in the More Problems group[a] adjusting individually and simultaneously for SDQ, CESD and Anxiety scores

Socio-demographic characteristic	*n*	All socio-demographics entered (*n*=928)		Adjusting for SDQ score (*n*=919)		Adjusting for CES-D score (*n*=909)		Adjusting for anxiety score (*n*=916)		Adjusting for all covariates (*n*=895)	
		OR	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*
Gender											
Male	317	1.00								1.00	
Female	578	1.45*	1.08-1.94	1.62**	1.18-2.21	1.30	.95-1.79	1.23	.90-1.67	1.34	.96-1.87
Parental Status											
Parents living together	540	1.00								1.00	
Separated/ divorced	302	1.36*	1.01-1.83	1.34	.98-1.83	1.41*	1.03-1.94	1.44*	1.06-1.95	1.42*	1.03-1.96
One or more parent deceased	18	1.86	.74-4.64	1.68	.65-4.31	1.60	.58-4.38	1.76	.67-4.66	1.51	.54-4.23
Parents never lived together	13	.34	.07-1.56	.32	.07-1.52	.33	.07-1.68	.35	.08-1.64	.34	.07-1.68
Other parental situation	22	1.12	.47-2.71	1.02	.40-2.59	1.05	.41-2.70	1.11	.46-2.71	1.02	.39-2.69
Mother"s paid employment											
Full time	377	1.00								1.00	
Part time	274	.99	.71-1.40	.95	.66-1.35	.96	.66-1.38	.96	.68-1.36	.93	.64-1.34
Not working	229	1.43*	1.00-2.02	1.41	.98-2.04	1.50*	1.03-2.18	1.46*	1.01-2.09	1.41	.96-2.08
Retired	15	1.42	.49-4.11	1.55	.51-4.76	1.15	.36-3.63	1.56	.52-4.70	1.28	.40-1.87
Father"s paid employment											
Full time	664	1.00								1.00	
Part time	131	1.16	.78-1.73	1.05	.69-1.59	1.02	.67-1.58	1.15	.76-1.73	1.04	.67-1.60
Not working	79	1.04	.63-1.70	.90	.54-1.51	1.04	.61-1.76	.95	.57-1.58	.94	.55-1.61
Retired	21	2.46*	1.02-5.95	2.42	.95-6.17	2.60*	1.01-6.65	2.83*	1.11-7.25	2.56	.96-6.86

[a] Adolescents who perceived themselves to have more emotional or behavioural problems than their peers.

*p<.05, **p<.01, ***p<.001

Table B10

Results of multivariable logistic regression analyses with the SDQ total difficulties score, the CES-D score and the Anxiety score as predictors of the outcome variable "receiving the help that was needed" among those who perceived a need for professional help adjusting individually for psychosocial factors

Scale	Multivariable *n*=433		*p* value	Adjusting for Social Support *n*=433		*p* value	Adjusting for Interpersonal skills *n*=408		*p* value	Adjusting for Constructive Problem Solving *n*=430		*p* value
	OR	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*		*OR*	*95% CI*	
SDQ Tot	.80	.61-1.04	.091	.88	.66-1.16	.356	.86	.64-1.16	.325	.86	.65-1.13	.268
CES-D	.87	.70-1.08	.205	.93	.74-1.17	.547	.90	.71-1.14	.376	.93	.74-1.16	.523
Anxiety	1.07	.88-1.29	.515	1.04	.85-1.27	.703	1.02	.83-1.26	.846	1.02	.84-1.25	.812

Note. *OR* = Odds ratio per standardised unit in the predictor; *CI* = Confidence Interval; SDQ Tot = SDQ Total difficulties score.