The Relationship Between Hope and Depression in Adolescents and the Mediating Role of Social Support

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Abstract

Depression can have a major detrimental impact on adolescents during this important time of development. A sense of hope is associated with reduced depressive symptoms, as is the degree of social support experienced. However, how these factors interact to protect against depression during adolescence remains unclear, and specifically whether social support mediates the relationship between hope and depression. The aim of this study was to investigate whether different sources of social support mediate the relationship between hope and depression in adolescents. A self-report cross-sectional survey was used to measure hope, social support and depression in 44,037 high school students aged 12-18 years (M = 14.17, SD = 1.62), including 20,189 (45.8%) males, 21,937 (49.8%) females, 963 (2.2%) identifying as ‘other’ and 948 (2.2%) who preferred not to report gender. Results show that after controlling for individual age and socioeconomic status, hope was a significant predictor of depression. Family, teacher and friend support all partially mediated this relationship, with family support being the strongest mediator, followed by friend support and then teacher support. This study, which had a very large sample of Australian adolescents, demonstrates the importance of a sense of hope on mental health outcomes, specifically depression, but importantly outlines the role that social support structures have on this relationship. These results help us to identify areas of young people’s lives that can be used to better promote mental health outcomes.

Keywords: adolescents, hope, depression, social support

Declaration

This thesis contains no material which has been accepted for the award of any other degree of diploma in any University, and, to the best of my knowledge, this thesis contains no material previously published except where due reference is made. I give permission for the digital version of this thesis to be made available on the web, via the University of Adelaide's digital thesis repository, the Library Search and through web search engines, unless permission has been granted by the School to restrict access for a period of time.

Contributor Roles

ROLE	ROLE DESCRIPTION	STUDENT	SUPERVISOR 1
CONCEPTUALIZATION	Ideas; formulation or evolution of overarching research goals and aims.	X	X
METHODOLOGY	Development or design of methodology; creation of models.	X	X
PROJECT ADMINISTRATION	Management and coordination responsibility for the research activity planning and execution.	X	X
SUPERVISION	Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team.		X
RESOURCES	Provision of study materials, laboratory samples, instrumentation, computing resources, or other analysis tools.		X
SOFTWARE	Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code.		
INVESTIGATION	Conducting research - specifically performing experiments, or data/evidence collection.		X
VALIDATION	Verification of the overall replication/reproducibility of results/experiments.		X
DATA CURATION	Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later re-use.	X	X
FORMAL ANALYSIS	Application of statistical, mathematical, computational, or other formal techniques to analyse or synthesise study data.	X	X
VISUALIZATION	Visualization/data presentation of the results.	X	
WRITING – ORIGINAL DRAFT	Specifically writing the initial draft.	X	
WRITING – REVIEW & EDITING	Critical review, commentary or revision of original draft	X	X

Depression is a highly prevalent mental health disorder that affects a large percentage of the population, including adolescents. Alone it is a detrimental disorder, however, depression is often comorbid with other disorders and problem behaviours that compound the harmful impact on an individual's life and can disrupt vital stages of development. Therefore, there is a great need for the evolution of strategies that can help combat the disorder for those who already have it, as well as help prevent its onset. To accomplish this, it is important to identify protective factors. One emerging factor of importance is the sense of personal agency, or hope. The extent that hope predicts depressive symptoms in the general adolescent community and how hope might interact with known protective factors of depression, such as levels of social support, remains to be evaluated. This assessment could identify valuable targets for novel preventative and therapeutic intervention strategies for this vulnerable age group.

The most severe form of depression is major depressive disorder (MDD); a relatively common mental illness that is one of the most predominant causes of disability worldwide (McCarron et al., 2021). According to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (2013), the two prominent features of MDD are depressed mood and anhedonia, defined as the reduced ability to feel pleasure. A combination of other symptoms such as suicidal ideation, fatigue, feeling guilty or worthless, changes in sleep duration, appetite or weight fluctuations, inability to concentrate or make decisions and psychomotor agitation or retardation, occur for more milder forms of the disease as well as sub-clinical presentations. A diagnosis of MDD requires the occurrence of five symptoms being present nearly every day for at least two weeks, with at least one being anhedonia or depressed mood. Additionally, the symptoms must distinctly diverge from how the individual formerly functioned. Although a lot is unknown about MDD and why it occurs, there are some well-established risk factors, including a personal or family history of MDD, comorbid medical ailments and low socioeconomic status (McCarron et al., 2021).

Globally it is estimated that 4.4% of the population live with depression overall (World Health Organization, 2017). Between 25.2% and 34% of children and adolescents worldwide display

clinically elevated depressive symptoms (Racine et al., 2021; Shorey et al., 2022). In Australia, 22.8% of adolescents in high school display depressive symptoms, with the trajectory increasing in recent years (Santamaria & Kohler, 2022).

Approximately 40% of people who have experienced depression will encounter their first depressive episode prior to the age of 20 (Malhi & Mann, 2018). Depression can be particularly damaging during adolescence, negatively impacting developmental pathways and being associated with comorbid mental health conditions, functional impairment and depression reoccurrence as an adult. During adolescence, depression is associated with risky behaviour, social challenges, substandard school work and most devastatingly, suicide (Parikh et al., 2018). Worldwide every year there are approximately 800,000 deaths by suicide, with depression being the most dominant contributor, and in individuals aged 15-29 it is the second biggest cause of death (World Health Organization, 2017). Each year, more than 3,000 people die by suicide in Australia and in individuals aged 15-24 it is the leading cause of death, with 112 children and adolescents reported to have died by suicide in 2021, 71% of who were between the ages of 15-17 years (Australian Institute of Health and Welfare, 2023). Individuals who develop depression during adolescence tend to present with more severe depression as adults, such as increased rates of reoccurrence, additional residual symptoms and longer periods of depression, as well as demonstrating disadvantageous psychosocial outcomes, including reduced social support, earlier pregnancies, unemployment and increased rates of divorce (Shorey et al., 2022). The likelihood of recovery drastically decreases the longer it takes to recover from depression (Malhi & Mann, 2018). Concerningly, by the age of 14 around 50% of mental health disorders have occurred, however, these are commonly not identified or treated until much later in life (Shorey et al., 2022). There is a need to identify and investigate protective factors for depression and develop feasible and broadly applied strategies focused on adolescence. One such factor that has been emerging in the literature is a sense of hope.

Snyder et al. (1991) proposed that hope is composed of two aspects: *agency* and *pathways*. Agency is comprised of favourable goal-orientated dedication and pathways is comprised of

favourable goal-oriented planning. Therefore, increased hope requires increased mutually obtained impressions of agency and pathways as goals are contemplated. Critically, Snyder et al. (1991) proposed that hope is not a bimodal factor, something that an individual either does or does not have. Instead, hope exists on a spectrum where individuals can vary in the amount of hope they possess.

Elements of Snyder et al.'s (1991) hope theory are also evident in the concept of self-efficacy. Bandura's (1977) self-efficacy theory contains two components: *outcome expectancies* and *efficacy expectations*. Outcome expectancy is a person's assessment on whether a certain behaviour will prompt a particular outcome. This concept is consistent with Snyder's theory of pathways. Both concepts think ahead about what is needed to achieve a goal, which involves planning and consideration of whether a particular behaviour will generate a desired outcome. Efficacy expectation is an individual's confidence they can successfully accomplish the necessary behaviour to generate the desired outcome. This concept is consistent with Snyder's concept of agency as both focus on personal belief in one's own ability. Bandura's two expectations differ, as an individual may speculate that certain tasks will generate particular outcomes. However, if there is a lack of conviction that they can execute the required tasks, simply knowing whether a particular action will lead to a particular outcome may not be sufficient to affect their actions. Confidence in individual proficiency influences commencement and perseverance of coping behaviours, thus is a critical factor in an individual's coping in a given scenario (Bandura, 1977). Regarding behaviour commencement, if an individual is faced with threatening circumstances that they perceive to surpass their coping capabilities, they generally are afraid and avert the situation. Comparatively, if an individual is faced with threatening circumstances that they believe they are proficient in managing, they are more likely to act confidently and participate in the associated activities. Perceived self-efficacy can also impact an individual's perseverance. Efficacy expectations dictate the degree of effort that an individual will implement and how long they will persevere when presented with hurdles and undesirable situations. Therefore, increased levels of self-efficacy are associated

with increased effort. Individuals who persevere in subjectively threatening tasks will strengthen their perception of efficacy, ultimately leading to the reduction of avoidance behaviour (Bandura, 1977).

It has been well established that increased hope is associated with decreased depression in adolescents (Kirby et al., 2022; Salloum et al., 2019; Zhang et al., 2019; Zhang et al., 2023). This may be because hopeful thoughts allow for emergence of adaptive strategies and therefore improve adaptive functioning broadly (Ricker et al., 2022). In contrast, individuals with low levels of hope are less likely to accomplish their goals due to the reduced belief in personal agency and ability to adapt to changing circumstances, such as when goals are hindered (Snyder et al., 1997). Consequently, the lack of hope results effectively in hopelessness, a pre-cursor for depressive symptoms and depression to take hold. Hopelessness theory contends that the major source of depression symptoms originates from two fundamental components: *negative outcome expectancy* and *helplessness expectancy* (Abramson et al., 1989). Negative outcome expectancy is the belief that goals which are greatly valued will not be fulfilled, whilst helplessness expectancy is the viewpoint that extremely aversive outcomes will occur and nothing the individual can do will alter the outcome (Abramson et al., 1989). Despite many studies identifying a significant relationship between hope and depression, Finch et al. (2020) investigated the constructs hope, efficacy, resilience, and optimism in relation with wellbeing and mental health in children aged 9-14. They found that hope was negatively associated with depression, however, when hope was combined with the other predicting factors it no longer remained predictive of depressive symptoms. This study suggests that it is not hope directly but other associated factors that are causative, such as efficacy. However, as discussed previously, the concepts of hope and efficacy describe overlapping ideas. This study used very similar items to assess both constructs and also reported the two to correlate highly. This raises the question whether the two constructs in this study were ultimately measuring the same thing.

As the relationship between hope and depression has been demonstrated, it would seem critical to investigate how hope can be promoted to mitigate symptoms of depression. Children

develop within a network of relationships, such as their immediate family, neighbourhood, school and local community (Berk, 2013). The various types of social support are likely to play a role in influencing a child's sense of hope, and thereby contribute to the impact of hope on symptoms of depression.

Social support represents the actual or perceived resources an individual has available from the network of people around them. Two key elements of social support are: i) the *type* of social support the individual is receiving, and ii) the *source* of who the social support is originating from (McIntosh, 1991). Social support is comprised of four key types: informational, social companionship, self-esteem and instrumental. Informational support, also commonly referred to as cognitive guidance, advice and appraisal support, is the assistance in identifying, comprehending and dealing with precarious situations. Social companionship, also known as belongingness and diffuse support, is participating with others in relaxation and entertainment activities. Self-esteem, also referred to as expressive support, close support, ventilation and emotional support, is increased by interacting with individuals who are accepted regardless of personal failings, and are appreciated for their individual value and experiences. Instrumental support, also known as tangible support, aid and material support, is the distribution of material supplies, financial assistance and required services. It is thought to assist in alleviating stress by resolving instrumental difficulties or by allowing the individual to have more time to partake in recreational activities and leisure (Cohen et al., 1985). Social support is considered to be an influential protective factor for mental health across the lifespan, particularly during adolescence (Bauer et al., 2021). Findings consistently indicate that greater social support is associated with reduced depression, leading to the presumption that social support protects adolescents against adverse stressors and elevates positive mental health outcomes (Bauer et al., 2021; Cheng et al., 2014). For adolescents, social support primarily can emerge from teachers, family and friends (Gariépy et al., 2016; Rueger et al., 2016).

Teacher support consists of teachers being emotionally reassuring, compassionate and dedicated to their students' well-being. Such support facilitates students' perception that they can

openly express their emotions and rely on their teachers for assistance (Wang & Kamphaus, 2009). The negative association between teacher support and depressive symptoms is commonly supported in research (Mizuta et al., 2016; Reddy et al., 2003; Way et al., 2007). Teachers have a critical role in the development of adolescents as they can be supportive mentors, providing guidance in a safe environment on a daily basis (Reddy et al., 2003). Although numerous studies have found a significant link between teacher support and depressive levels, a small number have shown otherwise. It was found that when assessed individually, teacher support was associated with depressive symptoms. However, when combined with family and friend support, teacher support no longer remained a significant predictor (Kang et al., 2022). Therefore, the relative influence of teacher support in the broader context of social support, when considering the relationship with depression, remains unclear.

Family support originates from family members, including extended family, siblings, parents and guardians (Heerde et al., 2015). A significant negative relationship has consistently been found between levels of family support and depression in adolescents (Burke et al., 2017; Ringdal et al., 2020; Sobol et al., 2021; Weber et al., 2010). Despite the substantial change in family dynamics during the transition through adolescence, family appears to maintain its influential position in shaping the individual. Family can provide a support network which disseminates unconditional love and compassion, equipping adolescents to be able to handle stressful situations and adverse feelings. This occurs through the provision of an environment in which emotions can be safely and openly articulated and alternative solutions can be examined (Licitra-Kleckler & Waas, 1993). This promotes adequate regulation of emotions and healthy development during the transition into adolescence and can contribute in preventing the onset of depression at a young age (Rueger et al., 2016).

Friend support derives from peers who provide encouragement and are there to listen in times of need, demonstrating positivity and kindness (McMurtry et al., 2020). It has been found in many studies that there is a significant negative relationship between friend support and depressive

symptoms, with greater levels of friend support linked to decreased depressive symptoms (Burke et al., 2017; Ringdal et al., 2020; Sobol et al., 2021; Weber et al., 2010). As individuals proceed into adolescence, the friends around them become increasingly pertinent in helping them perform developmental tasks, as well as providing support in stressful times (Licitra-Kleckler & Waas, 1993). Despite the significant link, a small number of studies have questioned the relationship between friend support and depression (Eisman et al., 2015; Helsen et al., 2000). A possibility for these discrepant findings is that such studies tend to focus on participants coming from the same localised area, where they were facing extreme adversity, including high unemployment and high crime (Eisman et al., 2015). A further difficulty in generalising findings is that many studies of youth extend the age range through to early adulthood, well beyond the context of secondary schooling (Helsen et al., 2000). Finally, the construct of broader emotional problems is often used in studies, rather than measurement of specific aspects of mental health or wellbeing, making it difficult to generalise findings to depression in isolation (Helsen et al., 2000).

It has been most commonly found that greater family, friend and teacher support individually are associated with reduced depression during adolescence. It has been found that when combined, family support is the stronger predictor, followed by friend support, with the relative support from teachers being unclear and potentially accounted for by the other sources of support when these are in place (Kang et al., 2022). To add to the confusion, Pössel et al. (2018) found that friend support does not predict depression when combined with family and teacher support. Overall, a meta-analysis and separate systematic review indicate that family support provides the greatest protection against depression during adolescence, followed by teachers and then friends (Gariépy et al., 2016; Rueger et al., 2016).

In addition to the association with depression, it has been found that social support is significantly associated with hope in adolescents, with individuals reporting more social support also reporting higher levels of hope (Hagen et al., 2005; Ling et al., 2015; Merkas & Braja-Zganec, 2011; Xiang et al., 2020). Overall, these studies suggest that hope and social support potentially have a bi-

directional relationship with each other. This is perhaps not unexpected, as individuals with high reported hope, are also more likely to be interested in both their personal goals and the goals of those around them, as well as being easy-going and lenient with friends and other people (Snyder, 2002). In contrast, individuals with low hope are often isolated, unforgiving, and apprehensive of close relationships, making people less inclined to spend time with them (Snyder, 2002).

Tao et al. (2022) conducted a study examining how social support and spiritual coping mediated the relationship between hope and depression in adult advanced cancer patients. It was thought that social support might influence the relationship between personal factors and developmental outcomes, as it is proposed in hope theory and previous research that social support has a heightening impact on hope (Chen et al., 2021). It was found that both social support and spiritual coping significantly mediated the relationship between hope and depression. Social support was found to both directly and indirectly effect depression. It was therefore determined that social support intensifies the impact of hope on depression and protects against psychological barriers (Tao et al., 2022). Given the separately reported relationships between social support and hope on depression for adolescents, it would be informative to investigate whether the same mediation pathway occurred in this population.

An aim of this study was therefore to investigate the relationship between hope and depression in adolescents, hypothesising that there would be a negative relationship between self-reports of the two constructs. A further aim was to determine whether the relationship between hope and depression in adolescents was mediated by social support. It was hypothesised that there would be a significant mediation by social support of the relationship between hope and depression. A final aim of this study was to investigate the effects of the individual types of social support in mediating the relationship between hope and depression in adolescents. Based on previous research it was hypothesised that family support would most significantly affect the relationship between hope and depression, followed by teacher support, with friend support being the least influential mediating factor.

Methods

Participants

Participants were school aged children residing in Australia who had taken part in the Resilience Survey in 2022, conducted by Resilient Youth Australia. Data collected in 2022 included responses from 100,597 students aged 7-19. This study included adolescents aged 12-18 in high school for analysis, with 44,401 individuals meeting these criteria. A total of 364 further participants with relevant missing data were excluded from analysis, leaving a final sample size of 44,037. The mean age of the participants was 14.17 years with a standard deviation of 1.62. Approximately half of the participants identified as male, half as female, with a small percentage identifying as 'other' or 'prefer not to say' (see Table 1). Approximately two thirds of the participants identified their nationality as Australian or New Zealander, followed by 11.9% identifying as Asian, with the remaining identifying as European, African, Aboriginal and/or Torres Strait Islander, Māori or Pasifika, and 'other' (see Table 1). The largest proportion of grade responses were from grades 7, 8 and 9 and after this the number of participants tended to decline as the grade increased (see Table 1). Socioeconomic status (SES), derived from the Australian Bureau of Statistics Socio-Economic Indexes for Areas scores were relatively evenly distributed across decile ranks (see Table 1), with a mean of 991.55 and standard deviation of 72.55, which is consistent with Australian national norms (Australian Bureau of Statistics, 2021).

To estimate a minimum required sample for the proposed analysis, expected effect sizes were based on a study conducted by Tao et al. (2022) who investigated how social support and spiritual coping mediated the relationship between hope and depression in adult advanced cancer patients. Using their finding of a medium effect of $r^2 = -.12$, with an alpha at .05 and power at .80, the estimated minimal sample size including the number of hypothesised predictors was 111. Based on this, the available data was more than sufficient to test the hypothesised relationships. The University of Adelaide's Human Research Ethics Committee granted ethics approval to use data from the Resilience Survey for research (Approval number: 20/87).

Table 1

Participant Demographic Characteristics

Variable	Group	*n* (%)
Gender	Male	20,189 (45.8%)
	Female	21,937 (49.8%)
	Other	963 (2.2%)
	Prefer not to say	948 (2.2%)
Nationality	Australian or New Zealander	29,965 (68.1%)
	European	3,078 (7.0%)
	Asian	5,236 (11.9%)
	African	824 (1.9%)
	Aboriginal and/or Torres Strait Islander	1,338 (3.0%)
	Māori or Pasifika	781 (1.7%)
	Other	2,815 (6.4%)
Grade	7	8,943 (20.3%)
	8	9,542 (21.7%)
	9	8,998 (20.4%)
	10	6,840 (15.5%)
	11	5,607 (12.7%)
	12	4,107 (9.3%)
SES Decile	1	2,933 (6.7%)
	2	4,309 (9.8%)
	3	4,102 (9.3%)
	4	3,547 (8.1%)
	5	5,028 (11.4%)
	6	6,461 (14.7%)
	7	4,079 (9.3%)
	8	3,812 (8.7%)
	9	4,620 (10.5%)
	10	5,146 (11.7%)

Note. n = number of individuals in sample.

Materials

Resilience Survey

All measures were derived from the Resilience Survey, distributed by Resilient Youth Australia Pty Ltd, which is a widely used survey tool currently utilised in more than 2,400 Australian schools, with over 600,000 students aged 7-19 having participated. The 2022 Resilience Survey consisted of 76 items; eight demographic, such as age and grade, eight optional risky behaviours, such as drinking alcohol and smoking cigarettes, and 60 core items which were measured through

the integration of standardised measures including the Children's Hope Scale (CHS) and the Patient Health Questionnaire (PHQ-2) as well as the utilisation of factor derived constructs, such as social support. Specifically, this survey measured the resilience of young individuals in regards to their coping style, hopefulness, strengths, risk and protective behaviours, life satisfaction, depression and anxiety.

Children's Hope Scale (CHS)

The Children's Hope Scale (CHS) developed by Snyder et al. (1997) is one of the most predominantly used and widely recognised measure of children's hope. The CHS is a six-item, self-reported, 6-point Likert scale (1 = *none of the time*; 6 = *all of the time*), with higher scores indicating higher levels of hope. Hope is comprised of two components: *agency*, which is the thoughts the individual has about whether they can commence and maintain working towards a goal they wish to achieve, and *pathways*, which is the individual's perceived ability that they can generate methods to achieve these goals. Three items measure agency, with statements such as "I am doing just as well as other kids my age", and three items measure pathways, with statements such as "when I have a problem, I can come up with lots of ways to solve it". For this study the phrase "in most situations" was added before each statement, to replicate the paper format of the original survey. In the initial analysis, Snyder et al. (1997) found that the internal consistency was between .74 and .81 and the test-retest reliability after one month was .71. Whilst Hellman et al. (2018) found that the average internal consistency was .81 and the test-retest reliability was .71.

Patient Health Questionnaire-2 (PHQ-2)

The Patient Health Quesionnaire-2 (PHQ-2) is a popular brief measure designed to quickly screen for depression (Kroenke et al., 2003). The PHQ-2 contains two items on a 4-point Likert scale (0 = *not at all*; 3 = *nearly every day*), with higher scores indicating greater severity of depression symptoms. The two items ask participants how often in the previous two weeks they have had "little interest or pleasure in doing things" and were "feeling, down, depressed or hopeless". The PHQ-2 is strongly associated with overall mental health (.70), indicating strong convergent validity, and for

general health perceptions (.47) and social functioning (.46) adequate criterion validity is demonstrated (Kroenke et al., 2003). Cronbach's alpha was .81, indicating good internal reliability (Kroenke et al., 2009).

Social Support

Factors representing areas of social support were constructed by combining items from the Resilience Survey that have previously demonstrated to form reliable measures of *friend*, *teacher* and *family* support using factor analysis techniques (Dhingra, 2022). Friend support was represented as the mean of responses to four items: "I am good at keeping friends", "I have at least one good friend at school", "I spend time with friends" and "my friends and I can disagree about things and still be friends". Teacher support was based on the mean of responses to five items: "I have at least one teacher who encourages me", "my school enforces rules fairly", "my school gives students clear rules", "I feel safe at school" and "I have a teacher at my school who cares about me". Finally, family support was based on the mean of six items: "I get love and support from my family", "I have a parent/carer who listens to me", "I have parents/carers who encourage me to do well", "I feel safe at home", "I have an adult in my life who I can talk to about my worries" and "I have adults who set good examples for me". All items were measured on a 4-point Likert scale (1 = *never or rarely*; 4 = *always or almost always*), with higher scores reflecting increased levels of support.

Using the current sample, internal reliability for family support was found to be very high (Cronbach's alpha, = .89), friend support was in the acceptable range (Cronbach's alpha = .73), and teacher support showed acceptable to high reliability (Cronbach's alpha = .79).

Procedure

Originally, as stated in the research plan (see Appendix A), there was a broader exploratory question about how the different types of social support may have varying significance in the mediation model. However, upon further investigation, numerous studies were found that had examined the relationship between different types of social support and depression. Based on this

new information the hypothesis was formed that family support would be the most influential mediating factor, followed by teacher and then friend.

The Resilience Survey was part of a voluntary Resilient Youth Australia Pty Ltd program that schools could elect to participate in for a cost per student. Following participation, schools received a report providing statistical comparisons of their school to national averages across a range of wellbeing metrics. Parents were told of the survey and the students participated voluntarily, with their responses remaining anonymous. The survey was completed securely online during school hours under school staff supervision.

Analysis

The data was cleaned, excluding participants who did not fit the criteria of high school students aged 12-18, as well as cases that had missing data. A visual inspection of QQ plots was conducted to determine if data was sufficiently normally distributed and a Welch one-way ANOVA was used to compare between gender groups. Pearson correlations were run to assess intercorrelations between variables. Due to small but significant correlations between SES and age with all factors included in the model, these variables were included as covariates in subsequent mediation analyses. Bootstrapped (5000 samples) mediation was conducted with hope (CHS) as the independent variable, depression (PHQ-2) as the dependent variable and family support, teacher support and friend support as mediators in the parallel mediation model (Hayes, 2022).

Results

Correlations between variables are presented in Table 2. Hope and depression were significantly correlated in the predicted direction with greater hope predicting reduced depression. Hope was positively related to all social support factors, whilst depression was negatively related to all social support factors. All of the social support factors were positively associated with each other, such that higher support in one domain was associated with higher support from the other domain. The correlations were all in the small to moderate range, but statistically significant. SES and age

showed small but significant correlations between all factors. Therefore, SES and age were included as covariates in all subsequent mediation models.

Table 2

Correlations Between Variables

Variable	Hope	Depression	Family Support	Friend Support	Teacher Support
Hope	-				
Depression	-.48*	-			
Family Support	.49*	-.46*	-		
Friend Support	.40*	-.36*	.45*	-	
Teacher Support	.44*	-.35*	.53*	.41*	-
SES Score	.09*	-.47*	.13*	.07*	.08*
Age	-.02*	.11*	-.09*	-.08*	-.07*

Note. Values = Pearson's *r*

* $p < .001$.

Differences in outcomes between the different gender groups: male, female and those who reported as 'other', were explored. Data for those who indicated 'prefer not to say' were not included for this analysis. Differences between genders were significant across all variables, however, effect sizes were very small suggesting differences were predominantly driven by the large sample size (see Table 3). Given the aims of this investigation, it was decided not to examine subsequent models according to gender, in order to provide an overall picture of hypothesised relationships only.

Table 3

Differences Between Genders

Variable	Gender			*F*-value	*p*-value	Effect Size
	Male *M* (*SD*)	Female *M* (*SD*)	Other *M* (*SD*)			
Age	14.13 (1.62)	14.22 (1.63)	14.16 (1.53)	14.64	<.001	.001
SES Score	985.43 (67.08)	997.87 (76.78)	981.93 (72.54)	111.71	<.001	.008
Hope	23.24 (6.43)	21.35 (6.14)	17.89 (6.44)	506.76	<.001	.035
Depression	3.62 (1.70)	4.26 (1.89)	5.45 (2.00)	695.11	<.001	.047
Family Support	3.37 (0.64)	3.31 (0.69)	2.71 (0.81)	332.06	<.001	.030
Friend Support	3.41 (0.56)	3.34 (0.58)	3.04 (0.68)	193.01	<.001	.017
Teacher Support	2.95 (0.67)	2.90 (0.67)	2.56 (0.69)	177.03	<.001	.013

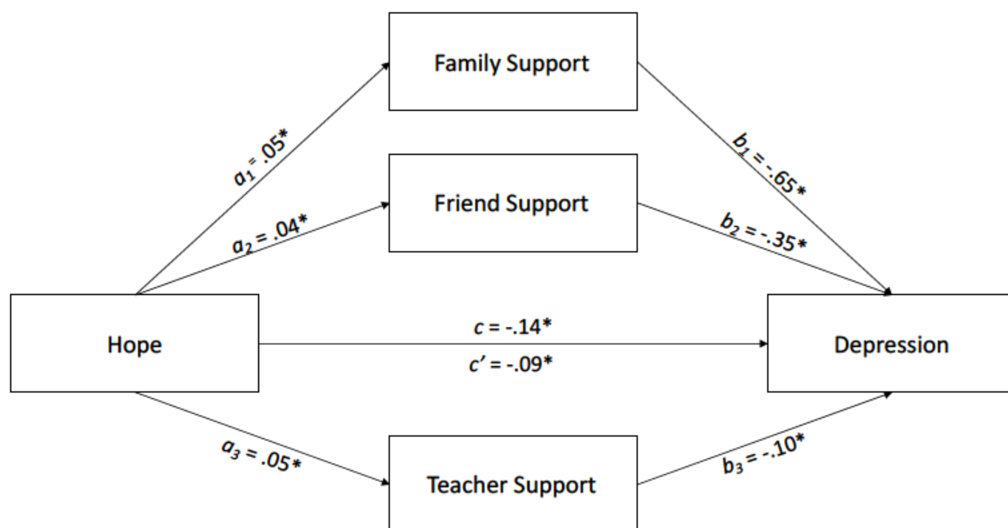
Note. M = mean, *SD* = standard deviation. Effect size = eta squared, small = .01, medium = .06, and large = .14.

Post hoc analysis using Sidak correction for multiple comparisons showed that females were older than males ($p < .001$), however, there were no differences between males and ‘others’ ($p = .99$), and females and ‘others’ ($p = .89$). Females reported a higher SES score than males ($p < .001$), and ‘others’ ($p < .001$), however, there was no difference between males and ‘others’ ($p = .60$). Males reported higher levels of hope than females ($p < .001$) and ‘others’ ($p < .001$), whereas females reported higher hope than ‘others’ ($p < .001$). ‘Others’ reported higher levels of depressive symptoms than females and males ($p < .001$ for both), whilst females reported higher depression than males ($p < .001$). Males reported higher levels of family support than females ($p < .001$), and both males and females more than ‘others’ ($p < .001$ for both). Males reported higher levels of friend support than females ($p < .001$), with both males and females reporting higher friend support than ‘others’ ($p < .001$). Males reported higher levels of teacher support than females ($p < .001$) and ‘others’ ($p < .001$), while females also reported higher teacher support than ‘others’ ($p < .001$).

The results from the parallel mediation analysis are summarised in Figure 1, with indirect effects detailed in Table 4. Individuals with higher hope levels were significantly more likely to have increased family support, $B_{a1} = .05$, $t(44,036) = 115.02$, $p < .001$, and increased family support was subsequently related to lower depressive symptoms, $B_{b1} = -.65$, $t(44,036) = -46.87$, $p < .001$. Individuals with higher hope levels were significantly more likely to have increased friend support, $a_2 = .04$, $t(44,036) = 89.96$, $p < .001$, and increased friend support was subsequently related to lower depressive symptoms, $b_2 = -.35$, $t(44,036) = -23.83$, $p < .001$. Individuals with higher hope levels were significantly more likely to have increased teacher support, $a_3 = .05$, $t(44,036) = 102.63$, $p < .001$, and increased teacher support was subsequently related to lower depressive symptoms, $b_3 = -.10$, $t(44,036) = -7.23$, $p < .001$. Holding all control variables and remaining support factors constant, the indirect path of hope on depression via family support was statistically significant ($a_1b_1 = -.03$, 95% CI [-.04, -.03]), the indirect path via friend support was also statistically significant ($a_2b_2 = -.01$, 95% CI [-.014, -.011]), and the indirect path via teacher support was statistically significant ($a_3b_3 = -.004$, 95% CI [-.006, -.003]). The total effect of hope on depression was significant ($c = -.14$, $p < .001$). Whereas the direct effect of hope on depression when keeping all potential mediators and covariates constant remained significant ($c' = -.09$, $p < .001$), but reduced when compared to the total effect. Overall findings show that the relationship between hope and depression appears to be partially mediated by family, friend and teacher support.

Figure 1

Mediation Pathway Model



Note. Model showing the mediating effect of social support between hope and depression. *a* = effect of hope on the mediators; *b* = effect of the mediators on depression; *c'* = direct effect of hope on depression; *c* = total effect of hope on depression. Values = standardised coefficients.

* $p < .001$.

Table 4

Indirect Effects of Hope on Depression as Mediated Through Family, Friend and Teacher Support

Variable	Standardised Effect	Unstandardised			
		Effect	*SE*	LLCI	ULCI
Mediators Combined	-.172	-.050	.001	-.052	-.048
Family Support	-.114	-.033	.001	-.035	-.031
Friend Support	-.043	-.012	.001	-.014	-.011
Teacher Support	-.015	-.004	.001	-.006	-.003

Note. SE = standard error, LLCI = lower limit 95% confidence interval, ULCI = upper limit 95% confidence interval.

Discussion

This study assessed whether a sense of hope was predictive of depressive symptoms in adolescents, in addition to whether this relationship was mediated by social support reported from

family, teachers and friends. Overall, the results showed that hope was a moderate predictor of depressive symptoms in adolescents and this relationship was partially mediated by different sources of social support that adolescents receive. These findings have particular implications for understanding targets for improving adolescent mental health or better understanding the factors influencing depression in adolescents.

The hypothesis that increased hope would predict reduced depression was supported, which is consistent with results from previous studies (Kirby et al., 2022; Salloum et al., 2019; Zhang et al., 2019; Zhang et al., 2023). These findings are congruent with the theory that having hope permits the development of flexible thinking, leading to overall increased functioning when faced with a variety of different situations (Ricker et al., 2022). It is also consistent with thoughts of associations between low levels of hope and diminished beliefs in an individuals' own capacity to be able to accomplish a task, particularly when obstacles appear (Snyder et al., 1997), generating hopelessness, which can often lead to the development of depressive symptoms (Abramson et al., 1989). Whilst a significant mediation effect was found for social support between hope and depression as hypothesised, the caveat was it represented a partial mediation only and not full mediation. As predicted family support was the most influential mediating factor in the relationship between hope and depression, which has consistently been found in previous studies (Burke et al., 2017; Ringdal et al., 2020; Sobol et al., 2021; Weber et al., 2010). These findings are understandable considering families can display positive and caring emotions, enabling adolescents to be capable when faced with worrisome scenarios and experiencing negative emotions, by allowing a safe space where their emotions can be communicated and solutions can be examined (Licitra-Kleckler & Waas, 1993). This then endorses emotional control during this critical stage of development, thereby reducing the chances of depressive symptoms emerging (Rueger et al., 2016). It was found that all types of individual social support played a significant role in in the mediation between hope and depression. According to Bronfenbrenner's ecological systems theory, children grow in a system of various relationships which are influenced by different sources within their environment; particularly family and those at school

(Berk, 2013). Therefore, it is evident that all types of social support are important for adolescents in the home and within the school environment and have an effect on how adolescents develop.

However, a discrepancy in the findings was that friend support was the next most influential factor, with teacher support having the least impact on the relationship. Within the literature there have been many inconsistencies about whether friend or teacher support is the next most influential factor on depression (Fiorilli et al., 2019; Gariépy et al., 2016; Rueger et al., 2016), with some finding that one is not significant at all when combined with other social support factors (Kang et al., 2022; Pössel et al., 2018). Possible reasons for variations include that previous studies had different sample sizes (Fiorilli et al., 2019), sample sources (Kang et al., 2022), cultures (Fiorilli et al., 2019; Kang et al., 2022), and a small range of schools (Fiorilli et al., 2019) where the quality of the school climate could have affected the results based on individual or small sample of schools (Krane et al., 2017). In the current study there was a broad sample from many different schools across Australia, allowing for a larger variety of different school quality.

Another possible explanation for the different findings is that in recent years, mental health, including depression, has been getting worse with prevalence rates rising (Australian Bureau of Statistics, 2018). Whilst there is less data on adolescent mental health, the limited data available suggests that the pattern is the same for adolescents (Santamaria & Kohler, 2022). Mental health and depression are even worse due to the impact of COVID-19. The pandemic majorly impacted many vital areas of life, including by causing delays and stopping mental health services from carrying out their duties, increasing unemployment and financial troubles, creating uneasiness and by causing mass isolation and loneliness (World Health Organization, 2022). Overall, these results provide additional knowledge in how hope, depression and different types of social support interact and which types of social support are more important in this relationship for adolescents.

Gender, age and SES were found to not be strong predictors of the factors, suggesting the effects shown are evident and important across secondary school children. Despite differences in outcomes across genders being small, there was a tendency for those selecting ‘other’ to report

increased levels of depressive symptoms, followed by females and then males. A strength of this study is that, due to the large sample size, this is one of a few studies to include for analysis adolescents who identified their gender as 'other' and not just males and females. Despite findings that internalising mental health disorders, particularly depression, are significantly more prevalent during adolescence in individuals identifying their gender as 'other' (Borgogna et al., 2019; Källström et al., 2022), followed by females (Girgus & Yang, 2015; Shorey et al., 2022), this study suggests that while the patterns of effects might vary subtly across genders, these factors are universal and affect all adolescents.

Findings from this study are particularly important when it comes to identifying protective factors that can be used to implement strategies to mitigate depression and understanding social support structures in society. Due to the low rate of diagnosis (Malhi & Mann, 2018), the increased risk of developing a comorbid mental disorder and the severe impact delayed diagnosis can have on future mental health prognosis, it is imperative that early detection and prevention strategies are implemented before long-term and possibly permanent damage is done (Parikh et al., 2018). It is also important to catch depression early and stop the onset of symptoms as it can prevent the loss of life by suicide, which is common for adolescents suffering from depression (Parikh et al., 2018). By understanding and acting on this vital knowledge for adolescents at an important stage of development, risky behaviours, social challenges and problems with school work can be dealt with appropriately. This study helps to provide useful insight into how approaches to a sense of hope and emphasis on social support might prevent children at risk of developing depression or help those who are already presenting with symptoms. It confirmed and extends the understanding in the way that hope predicts depressive symptoms in a broad sample of adolescents. It demonstrates that social support not only mediates between hope and depression for adults with advanced cancer (Tao et al., 2022), but effects also extend to younger groups who are affected by less adversity. This highlights the order of most important type of social support, family, therefore where attention should be focused first or more largely focused on. In individual cases for at risk children with a poor

family environment, there is a role for increased friend and teacher support, which could be conducted in the form of school and peer programs.

Despite the large and representative sample, this study had some limitations including the use of a cross-sectional survey. Although there is confidence that the relationships exist, the use of a cross-sectional survey only provides retrospective insight. Therefore, this prevents discovering how the variables interact and what order they develop, particularly with known bi-directional variables like hope and social support (Xiang et al., 2020). In order to determine causal pathways, a longitudinal study is required. A further limitation was that this study only measured depressive *symptoms* and did not identify adolescents with existing psychiatric diagnoses, particularly MDD. These results are applicable in the community population; however, it is unknown how strong the relationship is between the study variables in more severe cases of depression. As significant results have been found with this unique combination of variables in adolescents with depressive symptoms, the next step would be to see if similar occurrences happened with adolescents with clinically diagnosed depression.

Significant findings were found for adolescents in our high school sample and, as 50% of individuals have a mental health disorder by age 14 (Shorey et al., 2022), it is important to identify and implement preventative action as early as possible. Therefore, further research should be done with young children in primary school to ascertain if the same factors are also influential and whether there is any divergence in where attention should predominantly be focused. As significant findings were found for depressive symptoms, anxiety and other broader mental health and wellbeing factors should be investigated to determine what role hope and social support have. Previous studies have already found some relationships between hope and anxiety (DiPierro et al., 2018; Martins et al., 2018), and social support and anxiety (Osborn et al., 2020; Peñate et al., 2020), so further studies should explore these relationships in more depth. This study has determined family support is the most influential type of social support in the mediation of hope and depression. However, it remains unclear what aspect of family support in particular is so vital in the relationship

and what specific areas of family support constitute as a protective factor for depression. Whilst mediation occurred, it was only partial, so exploration of other factors should be conducted to determine what broader variables have an effect.

This study has an uncharacteristically large and representative sample, providing unique insight into the role hope and different types of social support have on depressive symptoms. It was found that hope is predictive of depression and social support partially mediates the relationship between hope and depression. All social support, family, friend and teacher were found to play a significant role in the mediation between hope and depression. However, family support in particular was found to be the most influential factor in the relationship, indicating the importance of focusing on this area for interventions and future research to discover further implications. It is important to note that whilst friend and teacher support were not as influential as family support, they still remained significant factors in the mediation relationship between hope and depression. Therefore, there may be a role for investing in school or peer support programs if family support is lacking. These results support the need for a longitudinal study that could determine causality by establishing the direction of relationships between variables. Similarly, future investigation of individuals with clinical depression, rather than those with depressive symptoms, as well as extending the research to other mental health conditions such as anxiety, will provide a more thorough understanding of the role of hope and social support in mental health. The wellbeing of Australian adolescents is incredibly important, particularly in the context of rising mental health issues and global and social challenges. Therefore, finding ways to instil hope and support adolescents will be a critical focus moving forward into the future to develop strategies for both prevention and intervention.

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Appendix A

Psychology Honours Project 2023 – Research Plan

Student ID: [redacted]

Study Information

Design Plan

Sampling Plan

Analysis Plan

Other

Reference List

Study Information

1. Title: The relationship between hope and depression in adolescents and the mediating role of social support.

2. Target Journal: The target journal for this project is Developmental Psychology, which focuses on lifetime psychological development, as well as the influence varying factors have on development, such as social factors. This corresponds with the aims of this study of examining young adolescents and the relationship that is present between hope and depression, along with investigating how social support impacts this relationship.

3. Research Aim/s: The aims of this research are to find out what the relationship is between a sense of hope and symptoms of depression in adolescents and if social support mediates this relationship. It is also an aim to examine different types of social support and whether they have varying levels of significance in mediating the relationship between hope and depression in adolescents.

4. Research Question/s: What is the relationship between hope and depression in adolescents and is this relationship mediated by social support?

5. Use of Theory: For this study a primarily inductive approach will be used to guide the research. The hypotheses for this study are that there will be a negative significant relationship between hope and depression and that there will be a statistically significant mediation of social support between hope and depression. There is also a broader exploratory question about how the different types of social support - peer, family and school - may have varying significance in the mediation model. For this study, Bronfenbrenner's ecological systems theory will be applied. This theory proposes that the child develops within an intricate network of relationships, influenced by different levels of the environment around the child. The first level is the microsystem, which is the child's close surroundings, including interaction patterns and activities. The next level is the mesosystem, which incorporates the links between microsystems, including school, child care centres, neighbourhood, and home (Berk, 2013). This study is looking at the factors at this level, in the shape of different types of social support and how they interact, and their overall effect on the child.

Design Plan

6. Tradition (optional): The tradition used for this project will be frequentist.

7. Study Design: This study consists of a self-report cross-sectional survey. As the survey was self-reported it allowed the information to be gathered directly from the child, instead of viewpoints from adults, allowing for a first-person perspective. The survey was cross-sectional, rather than experimental, as the relationship between factors was unclear.

8. Study Measures (optional): One of the key measures is hope, which is comprised of two components, agency and pathways. Agency is the thoughts the individual has about whether they can commence and maintain working towards a goal they wish to achieve and pathways is the individual's perceived ability that they can generate methods to achieve these goals. Hope was operationalised through use of the Children's Hope Scale (CHS), consisting of six items and self-reported using a 6-point Likert scale, ranging from 1 = none of the time to 6 = all of the time, with higher scores indicating higher levels of hope. The odd numbered questions measure agency, with statements such as "I think I am doing pretty well" and the even numbered question measure pathways, with statements such as "I can think of many ways to get the things in life that are most important to me" (Snyder et al., 1997). Depression was operationalised through use of the Patient Health Questionnaire-2 (PHQ-2), which contains two items on a 4-point Likert scale, with 0 = not at all and 3 = nearly every day, with higher scores indicating an increased likelihood of major depressive disorder. The two items asked participants how often in the previous two weeks they have had "little interest or pleasure in doing things" and were "feeling, down, depressed or hopeless" (Kroenke et al., 2003). The construct of social support was previously determined by results of factor analysis conducted by the primary supervisor. The domain of social support included *peer*, with statements such as "I am good at keeping friends", *school,* with statements including "I have at least one teacher who encourages me", and *family*, with statements such as "I get love and support from my family".

9. Study Materials (optional): The Resilience Survey distributed by Resilient Youth Australia was used to collect the data. The survey consists of 76 items; eight demographic, eight optional risk behaviour, and 60 core items primarily utilised with six validated measures: The Cantril Self Anchoring Scale (CSAS), The Children's Hope Scale (CHS), Patient Health Questionnaire

(PHQ-2), General Anxiety Disorder (GAD-2), Patient Health Questionnaire (PHQ-4) and The Coping Strategies Inventory [avoidance subscale] (CSI).

10. Study Procedure: For the survey, the scales were provided in a fixed order for all participants. Within the context of this study the domains appeared in the order of social support, depression, and lastly hope.

Sampling Plan

11. Existing Data/Partial Existing Data/Original Data (choose one): This project is using existing data, collected in 2022 by my primary supervisor, in collaboration with Resilient Youth Australia, to portray the wellbeing in individual schools and provide a report on the status of wellbeing.

12. Data Collection Procedures: The Resilience Survey was part of a voluntary Resilient Youth Australia program that schools could elect to participate in for a cost per student. Following participation, schools would be given a report providing statistical comparisons of their school to national averages. Parents were told of the survey and the students participated voluntarily, with their responses staying anonymous. The survey was completed securely online during school hours under school staff supervision.

13. Type of Data Collected: The data collected was quantitative, ordinal, Likert scale survey responses.

14. Sample Size: The sample size of all the participants who completed the survey was 100,597. As this study is investigating adolescents in high school, only high school students aged 12-18 will be included.

15. Stopping Rule: Data collection was stopped at the end of 2022 in order to create a report of Australian children's wellbeing in 2022.

Analysis Plan

16. Data Analyses: The data analysis will be conducted by myself under guidance from my primary supervisor. The software that will be utilised to analyse the data for this study will be SPSS (using the PROCESS macro) and the type of analysis will be bootstrapped mediation analysis as proposed by Hayes (2009). The data analysis procedure will consist of data cleaning, creating domain scores, checking assumptions, producing descriptive and inferential statistics, as well as reporting the results. Data screening will occur for missing cases and data, as well as for cases of incorrect survey completion and data entry. For this study, data will be excluded for participants that are not high school students aged 12-18 years old. The assumptions the mediation analysis that will be used makes are that all of the variables are on a continuous scale, that the variables are linearly related, which can be checked with a scatterplot, that the data doesn't show multicollinearity, which can be tested by looking at intercorrelations and that the variables should be normally distributed with no extreme outliers, which can be tested by using a QQ plot. If the assumptions are violated the data will be transformed and alternative analyses will be used, for example logistic regression. To account for outliers if this is not achievable, a statistical threshold will be applied to remove outliers for cases more than 1.5 times the interquartile range.

Other

17. Other (Optional): Each year similar data is collected with this survey, in order to view the progression of children's wellbeing in Australia. The results from this survey have been used in multiple research projects, with the research questions and exclusion criteria varying for each project in the respective year.

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