Digital resources for pain management: Psychologists' perspectives and suggestions

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Abstract

Chronic pain is a worldwide epidemic, with challenges pertaining to its high prevalence, complexity, management, psychosocial impact and economic impact. Due to the rarity of a cure for chronic pain, and a lack of access to in-person pain management services, there is a need for improving the accessibility of pain management options. Therefore, there has been growing interest towards the development and use of digital resources. These resources aim to promote an independent and self-management approach to living with chronic pain. They can be accessed through computers and electronic hand-held devices, as information websites, applications (apps), pain programs, and social support forums. There is limited research pertaining to client and health professional perspectives in this area. Furthermore, to date, there is no literature detailing psychologists' attitudes and perspectives, which is a noteworthy gap due to their involvement in the development of digital resources and their integral role in pain management. Using thematic analysis of qualitative interviews with eight registered psychologists, this study aimed to explore psychologists' perspectives of and suggestions regarding digital resources for pain management. Six overarching themes and their respective sub-themes were identified, indicating that digital resources are perceived as useful, although difficulties were identified pertaining to digital social support and client-decision making, with various perceived barriers and facilitators towards digital resource use (categorised by accessibility and support). Participants made suggestions about what an ideal digital resource would incorporate for pain management. These findings may inform the modification of existing resources, and formulation of additional appropriate and tailored co-designed digital resources for the management of chronic pain.

Presentation based on the data from this thesis

McKinlay, K., & Chur-Hansen, A. (2018, July). *Use of online resources for pain management: Psychologists' perspectives.* Presentation at the University of Adelaide Undergraduate Research Conference, Adelaide South Australia. (see Appendix E)

Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma in any University, and, to the best of my knowledge, this thesis contains no materials 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.

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CHAPTER 1

Introduction

1.1 Pain management

Chronic pain is a worldwide epidemic. It is estimated that one in five Australians are suffering from this condition, costing the Nation approximately $34 billion per annum (Pain Australia Factsheet 2, n.d.). Chronic pain is defined as persistent pain, such as feelings of discomfort or unpleasant sensations of varying severity, that persist for longer than three months, extending beyond the normal acute healing timeframe (Crowe et al., 2017). This creates a complexity since chronic pain can exist without an associated physical injury or tissue damage. Added to this, perceptions of the type and intensity of pain vary considerably between individuals and how the pain interferes in their daily activities (Lalloo, Jibb, & Rivera, 2015; Roditi & Robinson, 2011). Its multifaceted nature is associated with prevalent co-morbid physical disability and psychological distress such as anxiety and depression (Crowe et al., 2017; Gatchel, Peng, Peters, Fuchs, & Turk, 2007; Roditi & Robinson, 2011). For that reason, the subjective nature of pain adding to its complexity contributes to why there is no immediate cure or solution, thus pain often prevails for many years or can be lifelong (Crowe et al., 2017).

Common pharmacological therapies and surgery are often ineffective (Butchart, Kerr, Heisler, Piette, & Krein, 2009; Carpenter, Stoner, Mundt, & Stoelb, 2012), although are still regularly administered or promoted by general practitioners (Wan, 2014). It is argued that general practitioners receive inadequate medical training in chronic pain, which has resulted in dissatisfaction among chronic pain clients in believing their doctor will effectively manage their condition (Bergman, Matthias, Coffing, & Krebs, 2013; Wan, 2014). Crowe et al.

(2017) contends a biopsychosocial, thus holistic and multi-disciplinary approach, incorporating various health professionals and evidence-based practice as the most appropriate method for assessing and managing chronic pain (Crowe et al., 2017; Gatchel et al., 2007; Roditi & Robinson, 2011). However, in Australia, long waiting lists (between twelve months to two and a half years) preclude chronic pain sufferers from a timely interaction with this type of service (i.e. pain clinics), amid limited access to psychological services, proving difficult for attending in-person treatment for pain management (Burke, Mathias, & Denson, 2018).

1.1.1 Importance of self-management

Due to the inadequacy of existing services for pain management and the often lifelong experience of chronic pain, there is a necessity for self-management (Zufferey & Schulz, 2009). Barlow, Wright, Sheasby, Turner, and Hainsworth (2002) define self-management as an “Individual’s ability to manage the symptoms, treatments, physical and psychosocial consequences and lifestyle changes inherent in living with a chronic condition” (p. 178). This is a goal of pain management (Pain Australia Factsheet, 2016) and is assisted by pain acceptance, which is the ability to accept the associated consequences of physical pain, such as psychological distress (i.e. unwanted thoughts and emotions), and prevalent lifestyle impacts (e.g. reduction in working capability) to enjoy quality of life despite pain (Roditi & Robinson, 2011).

1.1.2 Role of the psychologist

Pain acceptance is challenging due to adjustments needed to cognitive, emotional, and behavioural processes (Perry, 2016). Psychologists can assist clients with chronic pain to modify and cope with these processes, and for that reason, these professionals can play a major role in pain management. Psychologists aim to guide clients to modify behaviours and promote lifestyle management, to assist people in living well despite pain (Roditi & Robinson, 2011). There is extensive evidence surrounding the effectiveness of evidence-based psychological techniques and treatments for pain management (Crowe et al., 2017; Roditi & Robinson, 2011).

1.2 Digital resources for pain management

Due to ineffective pharmacological approaches for chronic pain, limited in-person pain services and associated costliness, there is a need to improve the accessibility of and provide more pain management options at low cost (Butchart et al., 2009; Carpenter et al., 2012; Rini, Williams, Broderick, & Keefe, 2012). As such, there has been increasing interest and development towards non-pharmacological approaches such as digital resources (Bender, Radhakrishnan, Diorio, Englesakis, & Jadad, 2011). These resources are available through an internet connection, and can be accessed through a computer, mobile phone, and other electronic hand-held devices, via different formats such as a website, application (app) or program (Ranney, Duarte, Baird, Patry, & Green, 2016). Digital resources aim to promote health behaviour change to develop self-efficacy, by providing information, videos, courses and programs regarding pain and self-management skills, and social support in the form of personal stories, forums and groups (Lalloo et al., 2015; Murray, 2012).

Digital resources can be accessed without medical approval or supervision by a health professional, and simply requires self-motivation and efficacy (Murray, 2012; Nicholl et al., 2017). The advantage of utilising digital resources is that they are accessible and can compensate for long waiting lists for in-person treatment, are cost-effective, and convenient, particularly due to the high use of internet within the Australian population (approximately 80%) (Murray, 2012). In particular, people who have financial issues (McCloud, Okechukwu, Sorensen, & Viswanath, 2016), difficulties with physical mobility and psychological health (Bergman et al., 2013), and who live in rural or remote locations (Mann, LeFort, & VanDenKerkhof, 2013; Murray, 2012) can benefit from accessing digital resources to manage chronic pain.

1.3 Theoretical Framework - Self-Determination Theory

The theoretical framework guiding the present study is Self-Determination Theory. This is a theory of motivation that postulates intrinsic (internal) and extrinsic (external) motivation as means of influencing personality and behaviour (Deci & Ryan, 2000, 2008). Being intrinsically motivated means to conduct a behaviour or activity that is enjoyable or interesting, whereas extrinsic motivation is driven by external factors to conduct a behaviour aiming for a desired consequence, such as a reward or avoiding punishment (Deci & Ryan, 2000, 2008).

According to Deci and Ryan (2000, 2008), intrinsic and extrinsic motivation drives three basic and significant psychological needs. First, ‘autonomy’ is the need to self-regulate, organise and control one’s goals and behaviour. This extends to the need of ‘competence’, to feel capable and adapt to one’s environment to ensure actions produce valued results or outcomes. Third, the need for ‘relatedness’ involves the longing to interact, connect with and form meaningful relationships with other people. If all three needs are fulfilled, the result is optimal motivation, growth, wellbeing and psychological health to enable the attainment of health behavioural outcomes (Deci & Ryan, 2000, 2008).

In the context of this study, fulfilment of psychological needs using digital resources for pain management enhances motivation to internalise behaviours learnt and potentially maintain their use. This may enable confidence to conduct appropriate behaviours and coping strategies with an aim to accept, manage and reduce pain levels (Goubert & Trompetter, 2017; Mann et al., 2013).

1.4 Research question and aims

Despite psychologists' involvement in the development of and assisting chronic pain clients with digital resources, to date, no studies have explored psychologists' perspectives and attitudes towards these resources (Mann et al., 2013; Ruehlman, Karoly, & Enders, 2012). The present study aims to address this gap in the literature with an in-depth qualitative exploration addressing the following research question: "What are psychologists' perspectives of and suggestions regarding digital resources for pain management?" This question aims to specifically address how psychologists perceive digital resources as useful or effective, their views of the associated barriers and facilitators towards digital resource use by those with chronic pain, and suggestions for ideal digital resources for pain management. A qualitative approach is most suitable due to no research currently existing from a specialised psychological perspective, and the need for exploring perspectives to provide in-depth and rich understandings of views (Braun & Clarke, 2006, 2013; Pope & Mays, 2006). Findings from this study aim to provide information which could be used to modify existing resources and inform additional effective, appropriate and widespread co-designed (i.e. developed by health professionals and clients with chronic pain) digital resources for pain management (Bender et al., 2011; Zufferey & Schulz, 2009).

CHAPTER 2

Method

2.1 Participants

Purposive sampling was used in the present study. For inclusion in the study, participants were required to be psychologists who treat chronic pain clients on a regular basis, currently working in Australia and fluent in English. Seven participants were recruited via direct approach through networks of the supervisor, and one was recruited through snowball sampling, where a participant relayed details of the study to a psychologist eligible to participate. The sample comprised of eight registered psychologists, three men and five women, currently working in Adelaide with clients who live with chronic pain. All participants held full registration with the Psychology Board of Australia. Seven psychologists were endorsed in Clinical, Health or Organisational Psychology, whilst one psychologist held general registration with no endorsement. The length participants had been working with clients with chronic pain ranged from 4 to 25 years, with the average length being 13 years.

2.2 Procedure

The University of Adelaide Subcommittee for Human Research Ethics in the School of Psychology approved the present study (18/32). Participants were provided with an Information Sheet (see Appendix A) outlining details of the study and written and verbal informed consent was obtained prior to conducting interviews (see Appendix B). Participants were aware involvement in the study was voluntary and that they could withdraw at any time.

Upon consent, the researcher conducted in-depth semi-structured interviews at a convenient time and location for participants. An interview guide consisting of open-ended questions and prompts assisted the researcher to explore psychologists' perspectives of and suggestions regarding digital resources for pain management. Questions were based upon existing studies examining client perspectives of the use of digital resources for pain (Portelli & Eldred, 2017) and mental health conditions (Donkin & Glozier, 2012). Questions explored participants' perceived value of digital resources for pain management, associated barriers and facilitators, and suggestions of what an ideal resource would incorporate for pain management. The questions were asked flexibly, and the order and direction varied depending on participant responses. Thus, the interview guide was continually refined with additional questions and prompts added to expand perspectives raised in prior interviews (see Appendix C). Six interviews were conducted face-to-face at the participant's location of work in Adelaide, and two occurred via telephone. Interviews ranged between 26 and 54 minutes, with the average length being 42 minutes. Recruitment ceased following the eighth interview as saturation was reached, meaning no new patterns or themes were found within the data relevant to the research question (Francis et al., 2010).

With participant consent, interviews were audio-recorded and transcribed verbatim by the researcher. A number was assigned to each interview and identifiable information was removed to ensure anonymity of participants. Participants were offered the option of viewing and approving their interview transcript (member reflections) to substantiate the credibility of findings (Tracy, 2010), however no participant accepted. All participants opted to receive a summary of the overall research findings.

The researcher maintained an audit trail, noting all aspects of the qualitative research process. This ranged from noting the development of the research study, adjusting the interview guide accordingly, noting preliminary themes following each interview, and synthesising preliminary findings. This allowed for consistent comparison of data at each stage of analysis, thereby enhancing rigour (Tracy, 2010). In addition, the researcher maintained a reflexive stance by documenting personal influence and bias between and during interviews to ensure transparency. This is a requirement for successful qualitative research as it enhances the credibility and sincerity of research findings (Tracy, 2010). The researcher has personal experience using digital resources for pain management and aspires to work as a psychologist with clients with chronic pain in the future. Bias was mitigated through discussion with the supervisor at each stage of data collection, analysis and write-up of the report.

2.3 Data Analysis

Thematic analysis is a widely accepted and popular framework of qualitative research (Braun & Clarke, 2006, 2013; Pope & Mays, 2006). This method involves identifying, recording, and analysing relevant themes or patterns in qualitative data. Themes are identified when patterns or meaning in the data hold relevance to the research question (Braun & Clarke, 2006, 2013). Thematic analysis is considered a flexible analytical approach, by allowing deep exploration, interpretation and understanding to provide a rich and ‘thick description’ of the data (Braun & Clarke, 2006, 2013). Throughout analysis, inductive (themes generated were data-driven) and deductive (themes generated were theoretically driven) approaches, and semantic (codes capturing explicit meaning) and latent approaches (codes capturing implicit meaning) were used, by extracting meaning from the data obtained (Braun & Clarke, 2006, 2013).

The researcher analysed the data in six stages, as outlined and recommended by Braun and Clarke (2006, 2013). First, data familiarisation involved transcribing the interview into written text, re-reading transcripts in an active manner to be familiarised with the data and recording initial ideas of interest. In the second phase, initial codes were generated in the form of succinct labels or brief phrases by systematically working through the entire data set. The third phase involved generating themes - by organising and collating codes with relevant extracts of data to form themes and sub-themes (Braun & Clarke, 2006, 2013). Subsequently, themes were reviewed and refined accordingly against codes and extracts across the entire data set (Braun & Clarke, 2006, 2013). This was assisted by incorporating line numbers whilst transcribing to enable ease of location of the raw data. A thematic map was created to illustrate relationships between themes (see Appendix D). The themes were then defined and named, with the most relevant themes and data extracts included as results. It is important to note that the generated themes were not indicative of prevalence, rather words or extracts that held importance or meaning to answer the research question (Braun & Clarke, 2006, 2013).

The process of data analysis was recursive, meaning there was continual review of data by alternating between all stages of analysis. This approach enabled refinement of analysed data to demonstrate accuracy, coherence and consistency of findings (Braun & Clarke, 2006, 2013). For instance, transcription and preliminary analysis occurred following each interview, assisting in refining the interview guide and recognising data saturation as stated above, along with supervision discussion and reflection in the audit trail.

CHAPTER 3

Results

3.1 Overview

The aim of the present study was to explore psychologists' perspectives of and suggestions regarding digital resources for pain management. Analysis of the data resulted in six overarching themes and their respective sub-themes (see Appendix D - Thematic map). Overarching themes included: digital resources are perceived as useful for pain management; consumer-led digital resources related to social support are a "double-edged sword"; difficulties for client decision-making about digital resources; barriers and facilitators (categorised by accessibility and support) towards digital resource use for pain management (see Table 1); and participant suggestions of ideal digital resources for pain management.

3.2 Digital resources are perceived as useful for pain management

3.2.1 Promote active self-management

Participants described that clients are actively involved with their pain management when undertaking self-directed information seeking.

> … it's helpful in a sense for the person to take charge of their difficulties [as with] chronic pain often the person comes rather passive and a sufferer so this gives a person a chance to discover on their own. (Participant 6, lines 1068-1069)

'…' Ellipses have been used to omit text of less relevance

In addition, digital resources as an adjunct to therapeutic sessions were perceived as useful, to augment clients' knowledge of pain management skills and enable the client to actively guide discussion with a psychologist and other health professionals regarding resource use and perceived effectiveness.

> … so if someone is sort of coming in they might want to talk about a lot of individual things but there might be some gaps in their general knowledge about skills so it can kind of be propped up the self-management by going online having a look and then saying 'this is what I've tried this is how it worked'. (Participant 8, lines 1438-1444)

3.2.2 Ease of self-monitoring

Digital resources, particularly applications (apps), were stated as useful aids in self-monitoring because of their ability to retain accurate reports of physical pain, as well as impacts to pain such as daily activities, exercise and periods of social interactions. The digital approach was expressed to counteract perceived issues with losing hard-copy notes and forgetting management strategies stated in a session with a psychologist.

> … one of the main things that I struggle with and that I find my clients struggle with pain management is monitoring and tracking… there's a real area there where rather than people you know taking their self-records around in paper or trying to remember it when they get home… (Participant 5, lines 719-736)

Participants expressed some issues with self-monitoring, in relation to enhancing focus on physical pain and distracting focus from psychosocial components that were explicitly stated as the goal of pain management. Thus, a necessity for psychologists to understand their reasoning behind recommending digital resources to facilitate self-monitoring of pain was described.

> … you’ve gotta be a bit careful about who it is and why you’re getting them to do it I think cause you’re potentially reinforcing all of the focussing on pain… (Participant 7, lines 1418-1419)

3.2.3 Enable clients to re-visit content

The ability to re-visit content, irrespective of the period of time following therapeutic sessions was perceived as useful, to consolidate and reintroduce knowledge of self-management strategies and skills and minimise practicality issues of misplacing hard-copy documents.

> I always try to give handouts and explanations and even come back to certain points in future sessions with clients so we can really consolidate what we’ve been through, having said that I realise some of these things get lost along the way… and once you fast forward six months six years you know… all of a sudden you don’t have access to it anymore. (Participant 5, lines 972-977)

3.2.4 Accessible comparative to in-person pain management services

Participants stated digital resources are useful, in adjunct to attending appointments, due to the expense and long waiting lists for tertiary pain services resulting in lack of access.

> I think in the private sector where there’s not a lot of opportunity for pain or access for pain management it’s pretty expensive if people can do some

> stuff online in-between their sessions they get a bit more bang for their buck. (Participant 8, 1442-1444)

In addition, digital resources were seen as highly useful for clients residing in rural and remote locations, due to difficulties with mobility and cost of transport.

> We've had major issues with people being able to attend appointments particularly country people so access is limited to people in that respect so it has really opened up the door for people. (Participant 3, lines 310-312)

3.3 Consumer-led digital resources related to social support are a "double-edged sword"

Participants perceived consumer involvement (i.e. clients with chronic pain) in the development and maintenance of digital resources essential, due to the client's ability to better comprehend, and thus tailor digital resources to the emotional and functional needs of chronic pain sufferers.

> We need to preferably experience something for ourselves to you know properly understand it to see the impact it has emotionally functionally and otherwise as well as what kind of strategies may or may not work depending on you know the type of person. (Participant 5, lines 816-818)

However, participants explicitly and implicitly expressed that consumer-led digital resources, specifically forums and groups that provide social support are a "double-edged sword". Presented below are descriptions of how digital social support was perceived as useful and problematic.

3.3.1 Digital social support perceived as useful

Digital social support was seen as useful to promote social connectedness, due to the high prevalence of loss of personal and social relationships experienced by people with chronic pain. This was seen as largely attributable to a lack of understanding of chronic pain and its associated impacts to one's lifestyle (e.g. inability to work resulting in financial difficulties).

> … if you think about how people with pain you know find things socially, inter-personally you know family don't always understand, friends back away, people lose jobs they can't work anymore… so online stuff becomes quite powerful then because it's a way of connecting with people...
> (Participant 3, lines 390-394)

Social connectedness was perceived to be enhanced when clients feel a sense of relevance by interacting with others that have a lived experience of pain. Emotional understanding, comparative to technical and evidence-based understanding by health professionals, was considered more important to facilitate connectedness.

3.3.2 Digital social support perceived as problematic

Problems identified with clients using digital social support included: negative attitudes and judgements by others, due to the security of anonymity; and personal opinions resulting in ill-informed treatment choices, influencing pain solution and consequently deterring clients from pain management strategies. These problems were expressed to influence and exacerbate the client's psychological vulnerability. Therefore, the necessity of health professional moderation and involvement was described.

> … unfortunately people are quite judgemental online as soon as you kind of get behind a computer screen… so I think if there was some level of discernment and moderation, strong rules that were enforced well to keep people safe from trolls or other unwelcome judgements. (Participant 2, lines 243-254)

3.4 Difficulties for client decision-making about digital resources

3.4.1 Difficulties for clients assessing evidence-based information and treatment

Participants expressed the difficulty for clients when seeking digital information to discern evidence-based from information lacking credible research. For example, personal experiences or perceptions of certain pain treatments shared by others can be influential to the client's treatment pursuits and thus potentially problematic.

> The problem I think with online stuff is working out what's reasonable sensible up-to-date information versus what's information that's put up with someone else's lens… (Participant 1, lines 31-34)

Following advice on non-evidence-based treatment was perceived to result in several consequences. This was in relation to clients becoming consumed with seeking pain solutions that are often non-effective in removing pain, resulting in financial strain and negative consequences for psychological health and personal relationships.

> … people will be chasing the magic pill or the magic cure and spend lots of time and energy researching and focussing on those things spending money

> and then potentially not get anywhere… the trickle-down effects can be pretty big. (Participant 7, lines 1387-1391)

Thus, the importance of seeking treatment advice from medical health professionals was noted. In addition, a necessity for digital resources to incorporate evidence-based information was stated, enabling merit, quality and suitability of pain management resources. Such information, contributed by professional bodies, pain organisations and associations were highly recommended, due to their perceived accuracy and credibility.

3.4.2 Clients seek information for pain solutions

Participants highlighted that most clients seek digital information for pain cause and solution, due to attitudes of viewing chronic pain biomedically in that it can be cured or fixed. This was stated to exacerbate pain and limit the focus and goal of seeking and utilising self-management strategies. Pain acceptance was described as a lengthy process, which may never be achieved for some clients, and thus the importance for clients to understand and pursue a self-management approach prior to the utilisation of digital resources (e.g. programs, courses) was stated.

> … they're not looking for management because 'I don't want to manage it I want to get rid of it' so there's a bit of work you have to do before you can bring those things in… (Participant 8, lines 1490-1498)

Table 1

Perceived Barriers and Facilitators towards Digital Resource Use for Pain Management

Themes		
	Perceived Barriers	Perceived Facilitators
Accessibility	Older age	Younger age
	Multifaceted nature of chronic pain	Access to technology to self-monitor
	Digital resources viewed as irrelevant	Willingness to self-manage
	Cost of internet and devices	Inexpensive resources
	Residing in rural or remote locations	Convenience
	Complex information	Credible digital resources
	Clinical work as a priority	Diverse modalities of information
Support	Need for human contact	Practitioner-directed support
	Negative digital social support	Family support
		Positive digital social support

Despite participants expressing digital resources as useful, presented below (and in Table 1) are perceptions of barriers and facilitators towards digital resource use for pain management.

3.5 Perceived Barriers - Accessibility

3.5.1 Older age

Age was described as an influence towards technology and digital resource use, with a consensus that those above the age of sixty are less inclined to utilise these resources for pain management. This was due to participants explicitly expressing a lack of exposure to technology to result in reduced knowledge and skills - such as difficulties with self-monitoring and website navigation.

> … there is still definitely barriers for people of an older generation who haven’t had a lot of exposure to technology to be able to use it effectively. (Participant 2, lines 168-169)

3.5.2 Multifaceted nature of chronic pain

Co-morbid physical pain, medication side effects and poor psychological health such as anxiety and depression were identified as barriers. These factors were perceived to limit concentration, and due to the largely independent nature of digital resource use, prove difficult to absorb and comprehend information, and motivate oneself to seek, utilise and maintain resource use.

> … wanting you know to sit down and do something like that means they've gotta be able to concentrate, they're not having necessarily anyone sitting with them and being able to discuss it with them… (Participant 3, lines 500-504)

3.5.3 Digital resources viewed as irrelevant

Digital resources were viewed as irrelevant for most clients as pain management courses, programs and information websites promote self-management strategies. This was due to perceiving clients fixate on and seek pain solutions, expressing biomedical perceptions of pain remain. Thus, participants expressed this as a major barrier due to the lengthy process and difficulty of understanding and practising self-management.

> The sense of self-management that it's not promising a cure… I think that's a challenge and that can be a turn off because it is work it is about you know checking on your symptoms it is about pacing yourself changing your behaviour. (Participant 8, lines 1538-1546)

3.5.4 Cost of internet and devices

Participants expressed socio-economic issues, such as cost, as a barrier due to requiring internet connection and technological devices to utilise digital resources.

> So you've got to have a computer or a what's the thing called the magic phone a Smartphone or a iPad or something like that which costs money to get and it costs money to pay for your internet access or Wi-Fi or whatever. (Participant 4, lines 556-558)

A perceived common generalised societal assumption was implied regarding ease of access to internet and technology, irrespective of socio-economic status. A participant expressed this on behalf of herself and other psychologists in the field that have conducted research and contradicted this assumption.

> … we've realised how few of our patients have got [Smartphones and internet] in some populations and so you know I think you know it's something you can't take for granted. (Participant 1, lines 64-67)

3.5.5 Residing in rural or remote locations

Poor internet connectivity was perceived as a barrier, particularly for clients residing in rural or remote locations. Statements of client feedback of the inability to use digital resources supported this claim.

> … people have said 'oh we don't have good internet service around here you know so not much point recommending I go online because it will drop out [and] I won't be able to'. (Participant 3, lines 324-328)

3.5.6 Complex information

Digital information and content containing complex terms and medical jargon was perceived to restrict clients' motivational ability to engage with, utilise and maintain digital resources. This was seen to exacerbate psychological vulnerability and impact on the client's ability to learn and apply knowledge or strategies to their daily living.

> If we make things too complex then generally people kind of shut down in terms of not bothering to take the understanding in… (Participant 5, lines 955-959)

3.5.7 Clinical work as a priority

The necessity of prioritising clinical work over digital resource development was stated, due to the restrictions of available in-person treatment options in tertiary pain services.

> When you’ve got a three-year waitlist and you know trying to get people through the clinic that’s not something I guess that takes priority for the clinicians. (Participant 1, lines 94-95)

3.6 Perceived Barriers - Support

3.6.1 Need for human contact

The inability to incorporate human contact was seen as a limiting factor of digital resources, due to multiple interactions provided with face-to-face contact. As such, participants perceived that majority of clients require discussion and support prior to, and following resource use, to promote understanding regarding the content and self-management principles that may be lacking.

> … majority of people probably need a little prompting a little help and a motivating factor as well so I think that would be still be important.
> (Participant 6, lines 1190-1195)

3.6.2 Negative digital social support

Problematic perceptions of digital social support such as forums or support groups were stated due to client feedback. This was in relation to other people’s negativity and the provision of unwarranted advice about particular treatments. This resulted in deterring clients from seeking this support due to the inability of meeting needs of connectedness and understanding.

> Yeah and we've had people say… 'oh look there was this support group that I thought I'll take a look at but I couldn't stand the you know the negativity. I didn't wanna get all this advice from people I just wanted to have people say they understood they've got it I didn't want them to come back with oh you should try X Y Z because it worked for me'. (Participant 3, lines 379-382)

3.7 Perceived Facilitators - Accessibility

3.7.1 Younger age

Participants perceived those within the age demographic of eighteen to twenty-five to be more inclined to use digital resources, largely due to their social media connections. Clients were perceived to have greater technology competence due to technology exposure and access embedded into their culture whilst young.

> … I would imagine and certainly those sort of eighteen to twenty-five age group that I do see yes they're all sort of connected online. (Participant 4, lines 565-569)

3.7.2 Access to technology to self-monitor

Participants stated the ease of applying self-monitoring activities to daily life, due to prompts and reminders by applications (apps) that are easily accessible through mobile phones. Daily prompts were seen to encourage internalisation of these activities to promote a routine for self-management strategies.

> … the potential to have you know an alarm that comes up every once in a while… becomes easier to just realise that’s what you gotta do at that time of the day. (Participant 5, lines 774-780)

3.7.3 Willingness to self-manage

Clients who have high health consciousness and are thus willing and motivated to self-manage were seen as more prepared and inclined to seek and utilise digital resources for pain management. This was more prevalent for those who have had many unsuccessful treatment attempts for remedy and solution.

> … there’s people who come in and say ‘I’ve had all this treatment none of it has worked I need to do something about this’ so they’re really already ready to go. (Participant 6, lines 1294-1298)

3.7.4 Inexpensive resources

Cost was highlighted as an important motivator for digital resource use, facilitating engagement and interest when websites, courses, and programs are at minimal or no expense.

> … these are things people can just access, obviously they’re paying for their internet, but it’s not having to pay for something immediately unless they wanna join up to something, and that program is a small fee, the others are

> research based and so you get the courses for free. (Participant 3, lines 305-308)

3.7.5 Convenience

Digital resources were expressed as a convenient form of pain management, due to views of ease of access and the ability to use at one's volition. This was stated, in comparison to attending appointments, due to limited available sessions and contact with a psychologist, and thus time constraints to work on self-management activities.

> ... it lets people chip away at it rather than say you know you've got your one hour for the next two weeks with a psychologist get as much done as you can in that one hour and then we'll see you again in a couple of weeks… (Participant 5, lines 986-990)

Convenience was also mentioned due to the limitations of physical pain and work commitments to attend appointments, thus expressing the flexibility of use of digital resources despite different circumstances and lifestyles.

3.7.6 Credible digital resources

Evidence-based resources that are developed and maintained by health professionals or professional organisations were perceived as essential, for facilitating the client's confidence and believability that the site contains accurate information. This was seen to minimise confusion for clients and to avoid self-navigation of information to discern what information is accurate, or not, and what to utilise.

> … I think if something's clearly been endorsed by health professionals or things like that then at least they've got an opportunity to feel more confident in the message it's sending. (Participant 8, lines 1558-1562)

3.7.7 Diverse modalities of information

Digital resources providing various modalities of information, such as audio, visual and auditory, were perceived to meet individual differences and enable clients to select preferred modality or modalities for optimal processing of information. Doing so was seen to facilitate client engagement. These views were stated, in comparison to in-person services, that lack this diversity by health professionals largely providing hard-copy resources.

> … when you get online you've got access to other modes… so you can absorb information quite differently. (Participant 3, lines 395-400)

3.8 Perceived Facilitators - Support

3.8.1 Practitioner-directed support

Explicit and implicit expressions of the importance of providing support and guidance to clients regarding digital resource use was described. A participant spoke on behalf of herself and other psychologists regarding the importance of recommending diverse digital resources, assisting clients to discern evidence-based digital resources from non-evidence-based, and collaborating with the client following use to seek and obtain feedback on what was learnt and how they perceived its effectiveness.

> I think from our perspective it’s about providing options, helping people to work out what’s good quality and what’s not, and you know talking about that later on you know ‘what did you find out, how did that go for you, does it actually increase your support, does it help you to you know to manage this better, or has it just been an exercise you decided to try and let go?’ (Participant 3, lines 428-432)

Accessing digital resources, such as videos, in session with clients was seen as important to facilitate awareness, engagement and interest. Promoting these for use among clients’ social supports that lack knowledge and understanding of the client’s chronic pain experience was also noted to enhance engagement.

> I watch the first six-minute video with the person in session and we talk about it in here so I show them how to access it say ‘look this might be something interesting to you’ or they can show their family or other people at home that don’t understand… (Participant 8, lines 1464-1467)

Most importantly, prior to recommending a digital resource, participants expressed the necessity of self-testing, to ensure the resource is tailored to the client’s needs in terms of their lifestyle and physical, cognitive and emotional functioning.

3.8.2 Family support

Participants perceived that client’s supportive relationships, such as those with partners or family, may motivate and facilitate digital resource use. This was seen to be particularly useful when psychological distress is a limiting factor to self-directed resource seeking for pain management strategies and activities.

> … yeah sometimes it helps if they've got supportive partners or family because they can sort of encourage people to go off and do these self-management things and that can be particularly helpful actually if people are particularly depressed or anxious… (Participant 7, lines 1306-1309)

3.8.3 Positive digital social support

The importance of recommending digital social support to clients was expressed, as participants have received encouraging feedback from clients regarding forums and groups that have provided connectedness and understanding from those that share similar experiences.

> … usually clients that I have suggested it to and mentioned some of those I guess facilities online they seem to benefit and have that been a motivating factor for them to be able to connect with others. (Participant 5, lines 836-838)

3.9 Participant suggestions of ideal digital resources for pain management

3.9.1 Necessity of eradicating barriers

The need to eradicate barriers associated with digital resource use was highlighted, particularly in relation to cost, accessibility and quality. Most importantly, the need for additional client feedback, as to whether digital resources were utilised and how effective they were, was described for psychologists to encourage additional, effective and complementary digital resources suited to the client's needs.

> … it’s looking at the cost of stuff, and the accessibility and you know the quality of that stuff and getting enough feedback from people so that we know that if we were recommending something that there’s some good information behind it. (Participant 3, lines 464-470)

3.9.2 “Room for improvement”

> There are obviously some things that already exist, but I think there’s always room for improvement and greater efforts and investments being made into quality online platforms for people to utilise. (Participant 2, lines 266-268)

Due to a consensus that digital resources are lacking for pain management, requiring further development and improvement, and emphasising the importance of ensuring resources are evidence-based, participants expressed what ideal digital resources for pain management would entail.

3.9.3 Appropriate development of digital resources

A multi-disciplinary approach, such as collaboration amongst researchers, health professionals and those with chronic pain was stated as essential for the development of digital resources.

> I would very much like an approach to occur which has you know the researchers, the clinicians and the lived experience people but that has that kind of an almost top down approach where it gets filtered through you know from psychology, psychiatry, GP’s and so on… (Participant 4, lines 709-712)

3.9.4 Simple digital information

Digital resources (e.g. websites) incorporating simple and straightforward information was perceived as vital due to the physical, cognitive and psychological constraints associated with chronic pain. Tailoring information to lay understandings was also described.

> … I think for a lot of individuals you know pain is in some ways it’s such a primitive thing isn’t it you know? Well my view is that we all end up a little bit like cave men women when we are in a lot of pain and we just need something simple and effective at that point. (Participant 4, lines 660-665)

3.9.5 Pain education

The importance of digital resources providing education on psychosocial components of pain such as managing time, emotions and particularly focussing on values rather than physical pain itself was described. Focussing on value-based living was perceived to promote enticement and engagement with a digital resource comparative to current pain management courses largely focussing on physical pain. It was viewed that digital courses do not currently include the psychosocial components that are deemed as essential to pain management.

> So learning some stuff around education, time management, emotional management, stress management and values... that’s I think a really important place to be cause otherwise I think pain management courses can just sound like pain management courses… (Participant 5, lines 905-914)

In addition, incorporating information illustrating evidence for and against treatments and strategies were perceived as important, highlighting the necessity for clients to understand and discern evidence-based from non-evidence-based information and treatments.

3.9.6 Promote self-management

Participants highlighted the need for digital resources to promote active self-management and a sense of ownership to enhance clients’ sense of control. This was thought to be achieved by promoting a focus on pain and psychosocial management as opposed to information and social support resources advocating for pain solutions. The need for clients to make educated choices of digital resources to enact self-management was expressed, with an aim to limit reliance on health professionals. However, health professionals were seen as vital to assist and guide clients with digital resource use.

> … so I think its kind of it’s about giving people permission to pick and choose and know what’s best for them but from making I guess informed choices rather than just follow this program and it’ll take you to the pot of gold at the end of the rainbow… (Participant 8, lines 1605-1613)

3.9.7 Digital resources promoting relevance

Digital resources promoting relevance and application to clients’ chronic pain condition and circumstantial needs was stated, to aid in engaging with a digital resource and improve one’s pain. The potential for and usefulness of artificial intelligence was also mentioned to categorise these resources to meet individual needs.

> At the moment I think it’s mainly done by human beings maybe eventually you’ll have a website-based stuff that will actually kind of detect what would be the key issues for that person and can draw them in appropriately… (Participant 6, lines 1216-1218)

3.9.8 Tailoring to situational changes

Digital resources that remain accessible were perceived as crucial due to circumstantial changes during the lifespan. The need to provide support for specific situational changes was described, such as scenarios and strategies focussing on loss of personal relationships and working incapability that are prevalent among those with chronic pain.

> I think it isn’t something that someone does once and now ‘I’ve done that program and I know all about it’ because their circumstances could be different and the impact of their pain on their life could be different…
> (Participant 8, lines 1633-1641)

CHAPTER 4

Discussion

4.1 Overview

The purpose of this study was to address the research gap in exploring psychologists' perspectives of and suggestions regarding digital resources for pain management. An in-depth qualitative exploration from eight interviews generated findings across six overarching themes: digital resources are perceived as useful for pain management; consumer-led digital resources related to social support are a "double-edged sword"; difficulties for client decision-making about digital resources; barriers and facilitators towards digital resource use (categorised by accessibility and support); and participant suggestions of ideal digital resources for pain management. All themes inter-connect, demonstrating the complexity and multifaceted nature of chronic pain to influence and impact upon digital resource use (Roditi & Robinson, 2011).

This study explored digital resources in chronic pain, rather than specific types of chronic pain conditions. Research has demonstrated those with chronic pain share similar characteristics despite the number of co-morbid conditions. These include reduced self-reported health related to physical and psychological functioning, reduced quality of life, and interference with daily lifestyle activities (Butchart et al., 2009). Despite extensive literature focussing on the impacts of chronic pain, particularly in relation to self-management (Butchart et al., 2009), there is limited work examining the wider use of digital resources within the chronic pain population (Bergman et al., 2013). This is due to a large portion of the literature focussing on specific types of pain such as chronic lower back pain (Carpenter et al., 2012; Garg, Garg, Turin, & Chowdhury, 2016; Nicholl et al., 2017; Zufferey & Schulz, 2009). Future research is required to provide further perspectives.

Consistent with this study's findings, digital resources such as information websites, applications (apps), programs and courses targeting psychosocial pain management are viewed as somewhat effective or useful for clients (Bender et al., 2011; Murray, 2012). Studies have widely stated digital resources eradicate barriers associated with attending appointments, such as: health care costs (Bender et al., 2011; Portelli & Eldred, 2017); time constraints, due to convenience of resources to do in own time (Nevedal, Wang, Oberleitner, Schwartz, & Williams, 2013); and assisting people in isolated areas such as rural or remote locations (Lalloo et al., 2015; Mann et al., 2013; Murray, 2012).

It is worth acknowledging that the majority of research describing barriers and facilitators towards resource use are largely based on assumption (Mann et al., 2013; Mohr, 2009). Thus, studies are limited in providing empirical research and factual statements or perspectives from clients or health professionals (Bender et al., 2011). For example, this study found residing in rural or remote locations was a barrier for clients using resources due to poor internet service or connectivity, with only one other study assuming this may be a potential barrier (Murray, 2012). Additionally, Murray (2012) argues there is a high use of internet among Australians, enabling ease of digital resource use. However, the cost of technology to enable use of internet was seen as a major barrier in this study, aligning with other research findings (Parker, Jessel, Richardson, & Reid, 2013), contradicting the assumption of digital resources eradicating all barriers. This study confirms, and augments, perceived barriers and facilitators associated with digital resource use through empirical findings from a specialised psychological perspective.

4.2 Self-Determination Theory

Self-Determination Theory is widely acknowledged as an appropriate theoretical basis in studies focussing on health behaviour change (Ng et al., 2012). Studies have focussed predominantly on physical activity and have found positive associations between the fulfilment of the three psychological needs (autonomy, competence and relatedness) and improved adherence to activity, exercise and general health outcomes (Brooks et al., 2017; Teixeira, Carraca, Markland, Silva, & Ryan, 2012). However, there is little research exploring Self-Determination Theory as a basis for digital intervention or resource use among chronic pain populations (Goubert & Trompetter, 2017; Keogh, Tully, Matthews, & Hurley, 2015). Thus, the present study contributes to the minimal literature through novel perspectives. It is worth acknowledging that the three needs discussed below (in relation to this study's findings) are interdependent and contain considerable overlap (Ryan, Patrick, Deci, & Williams, 2008).

4.2.1 Autonomy

This study highlighted various opportunities and instances of how digital resources may fulfil the need of autonomy among chronic pain clients. For example, digital resources (e.g. applications) were described as useful due to the ease of ability to self-monitor pain and activity levels using a mobile phone, which may improve self-regulation skills (Lalloo et al., 2015; Nicholl et al., 2017). This may lead to internalisation of self-monitoring behaviours, thus creating autonomous motivation (Ryan et al., 2008). Additionally, resources were stated as useful to promote active self-management, thus participants valuing the role of the client to develop their own self-efficacy. For example, clients are able to use these resources at their own volition (enhancing autonomy) due to their timeless accessibility, resulting in convenience and flexibility of use (Wallace & Dhingra, 2014). In addition, participants expressed there may be more engagement and interest among clients when resources incorporate diverse modalities, thereby enhancing intrinsic motivation. The above factors, combining with the client's willingness to self-manage, may facilitate autonomy and additionally competence, to enable greater adherence to digital resources to maintain their use (Ryan et al., 2008; Yardley, Morrison, Bradbury, & Muller, 2015). This is congruent with literature stating once willing to act on a health behaviour, the person is more likely to learn and apply these strategies to their daily living (Ryan et al., 2008).

Despite digital resources being perceived to promote self-efficacy, autonomy and competence may be challenged by difficulties for client decision-making (as highlighted by participants). For example, clients may seek digital information and advice from discussion forums for pain solutions or remedy. This may challenge external motivation due to the rarity of pain cure (Pain Australia Factsheet, 2016). Seeking pain solutions was seen as problematic for psychological vulnerability and social relationships, and a barrier to resource use due to pain management resources commonly promoting self-management principles (Butchart et al., 2009). This may influence, or be influenced by, associated ill-informed treatment choices or accessing non-evidence-based information lacking credibility and trustworthiness, suggesting information is inaccurate, not up-to-date and does not align with pain management principles. Accessing evidence-based information was perceived as difficult for clients due to the challenge of discerning what is evidence-based information from what is not (in part due to the abundance of information), exacerbating the aforementioned problems (Murray, 2012). This could be attributed to clients viewing unguided resources (e.g. websites and social platforms) that are undertaken independently and thus do not have guidance or assistance from a health professional (Buhrman, Gordh, & Andersson, 2016; Rini et al., 2012).

Surprisingly, literature has not thoroughly explored how or why lack of evidence-based information and treatments may be a challenge or problematic for people accessing digital resources (Nevedal et al., 2013). Therefore, this study contributes to this gap in knowledge.

4.2.2 Competence

The present study highlighted a potential fulfilment of competence by participants recommending and facilitating credible digital resources to increase client motivations. That, in combination with psychological interventions, may potentially enhance client self-determination and self-management, by obtaining education on pain management and taking control of their pain and associated behaviours (Jensen & Turk, 2014; Ryan et al., 2008). Additionally, digital resources promoting relevance by tailoring to prevalent and specific circumstances and needs (i.e. loss of social supports, inability to recommence work) may enhance competence (as suggested by participants) (Ryan et al., 2008). This is supported by a study incorporating key intervention features to enhance competence by providing tailored feedback to clients following digital intervention use, and incorporating personal stories shared by others (also enhancing relatedness) (Yardley et al., 2015).

According to Deci and Ryan (2000, 2008), competence is diminished when health behaviour change and its associated challenges are too difficult (Deci & Ryan, 2000, 2008). This study highlighted that digital resources are difficult to utilise and maintain when a client lacks concentration and motivation, which was largely due to physical pain and psychological distress. Murray (2012) concurs with these findings stating that accessibility is impacted upon by this distress, creating difficulties as a high level of motivation and self-determination is required when independently using a digital resource. This suggests the benefit of another person as a motivator or support (as expressed by participants). For example, a health professional may be required when clients are lacking technical skills or ability (Ryan et al., 2008), such as older aged clients - as expressed by participants in the present study.

4.2.3 Relatedness

The need for relatedness could be fulfilled based on the findings from this study. For example, receiving support and encouragement from family and friends may facilitate intrinsic and extrinsic motivation to seek and maintain resource use, aligning with research illustrating that external motivation facilitates internalisation of behaviours (Deci & Ryan, 2000, 2008). In addition, clients partaking in social forums and groups may facilitate feelings of relevance to their lifestyle and pain experiences due to interacting with those with lived experience of pain. Research supports these findings by illustrating how vital social support is for those with chronic pain, as forums and groups provide a supportive community of self-expression, positivity and support to reduce social isolation and improve mental health outcomes (Lalloo et al., 2015; Slater, Dear, Merolli, Li, & Briggs, 2016). Furthermore, psychologists recommending, guiding and assisting clients with digital resource use in sessions strongly links with, and contributes to, fulfilling the need for relatedness (Deci & Ryan, 2000, 2008; Teixera et al., 2012). The need for competence may also be fulfilled when accessing digital resources (e.g. videos) in therapeutic sessions to enable the client to develop feelings of mastery (Deci & Ryan, 2000, 2008; Teixeira et al., 2012).

The need for relatedness is challenged in this study due to participants relaying client feedback of negative social support such as comments and judgements made by others on forums or groups, deterring them from future use. This may too disrupt autonomy and competence and could potentially reduce the use of digital resources for their pain management (Ryan et al., 2008). As such, Deci and Ryan (2000, 2008) argue negative social context and challenging basic psychological needs leads to poorer mental health outcomes and quality of life.

4.3 Strengths

A clear strength of this study was the use of qualitative methods (i.e. thematic analysis) to provide a rich and ‘thick description’ of the data set. Braun and Clarke (2006, 2013) state this approach is most appropriate when exploring a novel area; hence, this is the first study to qualitatively explore psychologists’ perspectives of and suggestions regarding digital resources for pain management. Therefore, according to Tracy’s ‘big-tent’ criteria for excellence in qualitative research (2010), this is considered a ‘worthy topic’, and provides a significant and meaningful contribution to the literature.

Sincerity was enhanced during interpretation and synthesis of the data by continually documenting stages of the qualitative process in an audit trail (Tracy, 2010). In addition, data saturation was achieved, assuming the research question was sufficiently supported by the data obtained (Tracy, 2010). Furthermore, the position of the researcher was constantly considered throughout recruitment, data collection, analysis and write up of this report, upholding a reflexive stance without impinging on participant’s views (Pope & Mays, 2006; Tracy, 2010). The researcher’s interest in pain management and the intention of working as a psychologist with clients with chronic pain was highlighted to participants during interviews, which may have assisted in enhancing rapport.

Finally, qualitative research does not seek to generalise findings; however, it is expected to have transferability. This refers to the applicability of other’s reading this study to transfer the research findings to their own situations or experiences (Anderson, 2010;

Tracy, 2010). Transferability may be achieved as psychologists may use these findings to inform their recommendations and use of digital resources to their clients.

4.4 Limitations and future research

A clear limitation of this study is the inability to triangulate the data through comparison of psychologists and chronic pain clients' perspectives. This would have allowed for exploration of client's personal experiences and views, as the present study highlighted client feedback is lacking regarding level of usability, effectiveness, and associated barriers, aligning with other research findings (Bender et al., 2011). Seeking perspectives of clients residing in rural or remote locations would be interesting in order to explore to what extent internet connectivity is an issue and or a priority for digital resource use (Murray, 2012). Despite a lack of literature pertaining to chronic pain clients' perspectives (Bender et al., 2011), there is no literature detailing views of psychologists (Mann et al., 2013; Ruehlman et al., 2012). Future research could triangulate their perspectives through qualitative methods.

The use of Self-Determination Theory as a theoretical basis is important to determine client behaviour and self-efficacy, as client-centred care is foremost a priority in health care and pain management (Ng et al., 2012; Ryan et al., 2008). The present study highlighted that the basic psychological needs may be fulfilled and challenged whilst accessing, utilising and maintaining digital resource use. However, it is evident that this under-researched area requires further exploration targeting client-based perspectives among chronic pain populations (Keogh et al., 2015).

Future research could incorporate quantitative methods, such as development of an online survey from the themes identified. This could be accessible for chronic pain clients and health professionals to widen the sample and enable comparison of suggestions of ideal digital resources for pain management. Additionally, future research could conduct further randomised controlled trials comparing and measuring the effectiveness and suitability of digital resources for pain management. Doing this could enable the improvement of outcomes and better tailor resources to the needs of clients (Schweier, Grande, Richter, Riedel-Heller, & Romppel, 2018).

Participants described a sense of relevance, connectedness and understanding if clients were to assist in the tailoring of pain management resources, particularly social support forums and groups. Therefore, collaboration among clients, psychologists, health professionals involved in pain management and clinicians to co-design pain management resources may be essential (as suggested by participants). Although, Yardley et al. (2015) argue many efforts such as considerable time and funding would be required. This aligns with the present findings that clinical work is prioritised over digital resource development due to the need to focus on current in-person pain management services (Burke et al., 2018). Interestingly, Yardley et al. (2015) argue that clients with chronic pain involved in the design and development may be problematic, as clients assume their experiences are like others experiencing chronic pain, and their feedback is based on personal experience rather than from a technical viewpoint. However, based on the present study’s findings (e.g. emotional understanding facilitating greater connectedness), the literature pertaining to the importance of client-centred care (Ng et al., 2012), and client feedback following use of digital resources and interventions (Yardley et al., 2015), it is evident their involvement is and would be highly valuable.

Due to the difficulties of pain management and associated impacts on personal and social relationships, social media platforms such as discussion forums are argued to be beneficial (Bender et al., 2011; Slater et al., 2016). As such, a study by Schweier et al. (2018) highlighted predominantly positive impacts on psychological health due to achieving social connectedness, supporting this study's findings of its usefulness and facilitating client's motivation to seek digital social support. However, studies suggest there is still no clarity of the therapeutic value of such sites and their impact, with few focussing on pain-related conditions (Merolli, Gray, Martin-Sanchez, & Lopez-Campos, 2015; Slater et al., 2016). In addition, there is minimal empirical literature on the negative impacts or problems associated with digital support platforms (Merolli et al., 2015). This study has contributed to this gap in knowledge through participants conveying their client's experiences, such as receiving personal advice from others regarding non-evidence-based treatments, with the potential for this to result in exacerbation of physical pain and psychological vulnerability, ultimately deterring clients from utilising this support for their pain management needs. Due to the above problems, it is evident future research is required to assess, reduce and aim to prevent these problems. This may be achieved by health professional involvement through moderation of digital social platforms (as suggested by participants).

Participants in the present study compared ease of technology and digital resource use between older and younger age groups. A major barrier was perceived to be that older aged clients would be less inclined to utilise digital resources for pain management. These views may be due to the lack of technology embedded in their culture whilst young, resulting in less exposure to technology than those of a younger age. Chesley and Johnson (2014) term people who lack exposure as digital "immigrants" (p. 590), ultimately affecting their skills and effectiveness of technology and resource use (as highlighted by participants in this study). However, a qualitative study by Parker et al. (2013) highlighted those of an older age demographic are inclined to use digital technologies when resources (e.g. programs) are tailored to their needs, contradicting the assumption by participants they are unwilling and find great difficulty in utilising digital resources for their pain management. There has been limited research in exploring perspectives of older clients' use of digital resources (Parker et al., 2013). Therefore, future work is required to explore if digital resources are a viable option for their pain management (as the present study highlighted difficulties with daily self-monitoring of pain in this age group).

A final potential limitation of this study is participants not accepting to view, approve, and provide feedback from their interview transcripts (Tracy, 2010). However, this could be understood in the context that they were all practising as a psychologist and working with chronic pain clients for many years, and thus confident in their perspectives and feeling their responses were credible.

4.5 Implications

Consistent with other research findings (Bender et al., 2011), it is evident digital resources are useful adjuncts to attending in-person pain management services. From this study's findings, this is attributable to: promoting active self-management and self-directed information seeking to augment own knowledge of pain management strategies; facilitators of ease of access and convenience; the lack of access to in-person pain management services; and participant suggestions pertaining to the necessity of eradicating barriers such as accessibility, quality and cost of technology. Thus, these findings imply resources are most effective and clients have greater adherence if assisted and motivated by a health professional or from another person e.g. family member or partner (as suggested by participants) (Bender et al., 2011; Morton et al., 2017). This aligns with other studies involving client perspectives that found resources were perceived as a limiting factor as they could potentially reduce the allocation of appointments with health care professionals and thus enhance social isolation. This implies the value of human contact and support for clients' pain management needs (Portelli & Eldred, 2017), as explicitly stated in the present study.

Client-decision making problems such as accessing and following non-evidence-based information and treatments was a major finding from this study. This largely contributed to participant suggestions of a need for improvement to develop appropriate and tailored digital resources. Support and education from health professionals to aid clients in assessing the quality and credibility of resources would be beneficial as a prevention strategy. In addition, future research is required to address additional regulatory bodies to evaluate and approve resources such as information websites and discussion forums as suitable for different client needs (Buhrman et al., 2016).

This study highlighted that practitioner-directed support could increase client interest and engagement with digital resources. For instance, motivational interviewing on the importance and potential benefits of digital resources by other psychologists in practice may facilitate this (Gatchel et al., 2007). Additionally, encouragement and support by other health professionals involved in pain management such as general practitioners, physicians, physiotherapists, chiropractors and dieticians may be essential to increase awareness and knowledge among clients of appropriate digital resources suited to their needs. Educating health professionals, particularly general practitioners (Wan, 2014) surrounding the potential effectiveness of digital resources and interventions for pain management could enhance clients' perceived level of support to increase self-efficacy and engage with and maintain digital resource use (Morton et al., 2017; Ryan et al., 2008). This may be essential as a qualitative study by Portelli and Eldred (2017) found that the majority of clients were not aware of digital services for their pain management. Educating health professionals is important as Slater et al. (2016) argues there is limited research investigating the “real-world” potential of digital resources in daily health care practice (p. 494). Thus, future research is required to explore the potential of implementing digital resources into routine clinical practice and care for chronic pain populations (Rini et al., 2012).

The effectiveness of support and encouragement from family, partners and friends could be addressed in future research, and incorporated in practice by educating clients of the benefits, as participants in this study highlighted motivational support may facilitate client engagement and retention. These findings are congruent with literature stating the importance of social support as part of self-care, which should be acknowledged whilst developing digital resources or interventions for chronic pain populations (Nøst, Steinsbekk, Riseth, Bratås, & Grønning, 2017).

Perspectives of client and health care professionals have been inadequately addressed and are worth exploring (Mohr, 2009; Montero-Marín et al., 2013; Morton et al., 2017). This may identify the barriers that deter, or facilitators that encourage, health care professionals to refer clients to using digital resources for pain management. For example, Morton et al. (2017) argues that health professionals may believe self-monitoring of pain through digital resources increases workload, time and energy, aligning with other research (Lalloo et al., 2015). The present study’s findings support this and further contribute to the existing literature by expressing the problems of self-monitoring such as enhancing focus on physical pain to result in detracting from self-management principles. As such, health professionals may require explicit guidance on how to best deliver this support and encouragement of digital resource use for their clients to provide appropriate and tailored resources to meet individual needs (Morton et al., 2017).

4.6 Conclusions

This study is the first to qualitatively explore psychologists' perspectives of and suggestions regarding digital resources for pain management. Findings indicated digital resources were perceived as useful in that they enhance active self-management, although difficulties were identified pertaining to digital social support and client-decision making, and various perceived barriers and facilitators towards digital resource use. In addition, digital resources were perceived by psychologists to be a useful adjunct to in-person pain management services, although clients may require support and assistance from a health professional or another person to facilitate awareness and engagement to use and maintain digital resources. Participant suggestions may inform the formulation of and additional appropriate and tailored co-designed digital resources for the management of chronic pain, with an aim to implement these resources into routine clinical practice.

References

Anderson, C. (2010). Presenting and evaluating qualitative research. *American Journal of Pharmaceutical Education*, *74*(8), 141.

Barlow, J., Wright, C., Sheasby, J., Turner, A., & Hainsworth, J. (2002). Self-management approaches for people with chronic conditions: A review. *Patient Education and Counseling, 48*(2), 177-187. Retrieved from https://doi.org/10.1016/S0738-3991(02)00032-0

Bender, J. L., Radhakrishnan, A., Diorio, C., Englesakis, M., & Jadad, A. R. (2011). Can pain be managed through the internet? A systematic review of randomized controlled trials. *Pain, 152*(8), 1740-1750. doi: 10.1016/j.pain.2011.02.012

Bergman, A. A., Matthias, M. S., Coffing, J. M., & Krebs, E. E. (2013). Contrasting tensions between patients and pcps in chronic pain management: A qualitative study. *Pain Medicine, 14*(11), 1689-1697. Retrieved from https://doi.org/10.1111/pme.12172

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. doi: 10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners*. London: Sage.

Brooks, J. M., Iwanaga, K., Chiu, C. Y., Cotton, B. P., Deiches, J., Morrison, B. … Chan, F. (2017). Relationships between self-determination theory and theory of planned behavior applied to physical activity and exercise behavior in chronic pain. *Psychology, Health & Medicine, 22*(7), 814-822. doi:10.1080/13548506.2017.1282161

Buhrman, M., Gordh, T., & Andersson, G. (2016). Internet interventions for chronic pain including headache: A systematic review. *Internet Interventions, 4*(1), 17-34. doi: 10.1016/j.invent.2015.12.001

Burke, A. L., Mathias, J. L., & Denson, L. A. (2018). Waiting for multidisciplinary chronic pain services: A prospective study over 2.5years. *Journal of Health Psychology,* 1-15. doi: 10.1177/1359105317752828

Butchart, A., Kerr, E. A., Heisler, M., Piette, J. D., & Krein, S. L. (2009). Experience and management of chronic pain among patients with other complex chronic conditions. *Clinical Journal of Pain, 25*(4), 293-298. doi: 10.1097/AJP.0b013e31818bf574

Carpenter, K. M., Stoner, S. A., Mundt, J. M., & Stoelb, B. (2012). An online self-help cbt intervention for chronic lower back pain. *Clinical Journal of Pain, 28*(1), 14-22. doi: 10.1097/AJP.0b013e31822363db

Chesley, N., & Johnson, B. E. (2014). Information and communication technology use and social connectedness over the life course. *Communication and Media, 8*(6), 589-602. doi: 10.1111/soc4.12170

Crowe, M., Whitehead, L., Seaton, P., Jordan, J., Mccall, C., Maskill, V., & Trip, H. (2017). Qualitative meta-synthesis: The experience of chronic pain across conditions. *Journal of Advanced Nursing, 73*(5), 1004-1016. doi: 10.1111/jan.13174

Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227-268. doi:10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology*, *49*(1), 14-23. doi: 10.1037/0708-5591.49.1.14

Donkin, L., & Glozier, N. (2012). Motivators and motivations to persist with online psychological interventions: A qualitative study of treatment completers. *Journal of Medical Internet Research, 14*(3), 91. doi: 10.2196/jmir.2100

Francis, J. J., Johnston, M., Robertson, C., Glidewell, L., Entwistle, V., Eccles, M. P., & Grimshaw, J. M. (2010). What is an adequate sample size? Operationalising data saturation for theory-based interview studies. *Psychology & Health, 25*(10), 1229-1245. doi: 10.1080/08870440903194015

Garg, S., Garg, D., Turin, T. C., & Chowdhury, M. F. U. (2016). Web-based interventions for chronic back pain: A systematic review. *Journal of Medical Internet Research, 18*(7), 139. doi: 10.2196/jmir.4932

Gatchel, R. J., Peng, Y. B., Peters, M. L., Fuchs, P. N., & Turk, D. C. (2007). The biopsychosocial approach to chronic pain: Scientific advances and future directions. *Psychological Bulletin, 133*(4), 581-624. doi: 10.1037/0033-2909.133.4.581

Goubert, L., & Trompetter, H. (2017). Towards a science and practice of resilience in the face of pain. *European Journal of Pain, 21*(8), 1301-1315. doi: 10.1002/ejp.1062

Jensen, M. P., & Turk, D. C. (2014). Contributions of psychology to the understanding and treatment of people with chronic pain: Why it matters to all psychologists. *American Psychologist, 69*(2), 105-118. doi: 10.1037/a0035641

Keogh, A., Tully, M. A., Matthews, J., & Hurley, D. A. (2015). A review of behaviour change theories and techniques used in group based self-management programmes for chronic low back pain and arthritis. *Manual Therapy, 20*(6), 727-735. Retrieved from https://doi.org/10.1016/j.math.2015.03.014

Lalloo, C., Jibb, L. A., & Rivera, J. (2015). “There’s a pain app for that”: Review of patient-targeted smartphone applications for pain management. *Clinical Journal of Pain, 31*(6), 557-663. doi: 10.1097/AJP.0000000000000171

Mann, E. G., LeFort, S., & VanDenKerkhof, E. G. (2013). Self-management interventions for chronic pain. *Pain Medicine, 3*(3), 211-222. doi: 10.2217/pmt.13.9

McCloud, R. F., Okechukwu, C. A., Sorensen, G., & Viswanath, K. (2016). Beyond access: Barriers to internet health information seeking among the urban poor. *Journal of the American Medical Informatics Association, 3*(6), 1053-1059. Retrieved from https://doi.org/10.1093/jamia/ocv204

Merolli, M., Gray, K., Martin-Sanchez, F., & Lopez-Campos, G. (2015). Patient-reported outcomes and therapeutic affordances of social media: Findings from a global online survey of people with chronic pain. *Journal of Medical Internet Research, 17*(1). doi: 10.2196/jmir.3915

Mohr, D. C. (2009). Tele-mental health: Reflections on how to move the field forward. *Clinical Psychology: Science and Practice*, *16*(3), 343-347. Retrieved from https://doi-org.proxy.library.adelaide.edu.au/10.1111/j.1468-2850.2009.01172.x

Montero-Marín, J., Miguel Carrasco, J., Roca, M., Serrano-Blanco, A., Gili, M., Mayoral, F. … García-Campayo, J. (2013). Expectations, experiences and attitudes of patients and primary care health professionals regarding online psychotherapeutic interventions for depression: Protocol for a qualitative study. *BMC Psychiatry, 13*(64). doi: 10.1186/1471-244X-13-64

Morton, K., Dennison, L., May, C., Murray, E., Little, P., McManus, R. J., & Yardley, L. (2017). Using digital interventions for self-management of chronic physical health conditions: A meta-ethnography review of published studies. *Patient Education and Counseling, 100*(4), 616-635. doi: org/10.1016/j.pec.2016.10.019

Murray, E. (2012). Web-based interventions for behavior change and self-management: Potential, pitfalls, and progress. *Medicine 2.0, 1*(2). doi: 10.2196/med20.1741

Nevedal, D. C., Wang, C., Oberleitner, L., Schwartz, S., & Williams, A. M. (2013). Effects of an individually tailored web-based chronic pain management program on pain severity, psychological health, and functioning. *Journal of Medical Internet Research, 15*(9), 201. doi: 10.2196/jmir.2296

Ng, J. Y. Y., Ntoumanis, N., Thøgersen-Ntoumani, C., Deci, E. L., Ryan, R. M., Duda, J. L., & Williams, G. C. (2012). Self-determination theory applied to health contexts: A meta-analysis. *Perspectives on Psychological Science, 7*(4), 325-340. doi: 10.1177/1745691612447309

Nicholl, B. I., Sandal, L. F., Stochkendahl, M. J., McCallum, M., Suresh, N., Vasselijen, O ... Mair, F. S. (2017). Digital support interventions for the self-management of low back pain: A systematic review. *Journal of Medical Internet Research, 19*(5), 179. doi: 10.2196/jmir.7290.

Nøst, T. H., Steinsbekk, A., Riseth, L., Bratås, O., & Grønning, K. (2017). Expectations towards participation in easily accessible pain management interventions: A qualitative study. *BMC Health Services Research*, *17*(712). Retrieved from https://doi-org.proxy.library.adelaide.edu.au/10.1186/s12913-017-2668-3

Pain Australia Factsheet 2. (n.d.). *Prevalence and the human and social cost of pain*. Retrieved from http://painaustralia.staging3.webforcefive.com.au/static/uploads/files/painaust-factsheet2-wfdahrmggvwp.pdf

Pain Australia Factsheet. (2016). *Self-managing chronic pain*. Retrieved from http://www.painaustralia.org.au/static/uploads/files/painaust-factsheet10-final-wfbdhlqkosbm.pdf

Parker, S. J., Jessel, S., Richardson, J. E., & Reid, M. C. (2013). Older adults are mobile too! Identifying the barriers and facilitators to older adults' use of mhealth for pain management. *BMC Geriatrics, 13*(43). doi: 10.1186/1471-2318-13-43

Perry, K.N. (2016). Why should chronic pain matter to psychologists? *InPsych: The Psychology Of Chronic Pain, 38*(4). Retrieved from https://www.psychology.org.au/inpsych/2016/august/nicholsonperry

Pope, C., & Mays, N. (2006). Qualitative methods in health research. In C. Pope & N. Mays (Eds.), *Qualitative research in health care* (3rd ed., pp. 1-11). Carlton, Vic: Blackwell

Portelli, P., & Eldred, C. (2017). A grounded theory of attitudes towards online psychological pain management interventions in chronic pain patients. *Computers in Human Behaviour, 76,* 329-340. Retrieved from https://doi.org/10.1016/j.chb.2017.07.034

Ranney, M. L., Duarte, C., Baird, J., Patry, E. J., & Green, T. C. (2016). Correlation of digital health use and chronic pain coping strategies. *mHealth*, *2*(35), 1-7. doi: 10.21037/mhealth.2016.08.05

Rini, C., Williams, D. A., Broderick, J. E., & Keefe, F. J. (2012). Meeting them where they are: Using the internet to deliver behavioral medicine interventions for pain. *Translational Behavioral Medicine, 2*(1), 82-92. Retrieved from https://doi.org/10.1007/s13142-011-0107-2

Roditi, D., & Robinson, M. E. (2011). The role of psychological interventions in the management of patients with chronic pain. *Psychology Research and Behavior Management*, *4*, 41-49. doi: 10.2147/PRBM.S15375

Ruehlman, L. S., Karoly, P., & Enders, C. (2012). A randomized controlled evaluation of an online chronic pain self-management program. *Pain*, *153*(2), 319-330. doi: 10.1016/j.pain.2011.10.025

Ryan, R.M., Patrick, H., Deci, E.L., Williams, G.C. (2008). Facilitating health behaviour change and its maintenance: Interventions based on self-determination theory. *The European Health Psychologist, 10*, 2-5.

Schweier, R., Grande, G., Richter, C., Riedel-Heller, S.G., & Romppel, M. (2018). In-depth statistical analysis of the use of a website providing patients' narratives on lifestyle change when living with chronic back pain or coronary heart disease. *Patient Education and Counseling*, *101*, 1283-1290. Retrieved from https://doi.org/10.1016/j.pec.2018.02.015

Slater, H., Dear, B. F., Merolli, M. A., Li, L. C., & Briggs, A. M. (2016). Use of ehealth technologies to enable the implementation of musculoskeletal models of care:

Evidence and practice. *Best Practice & Research Clinical Rheumatology, 30,* 483-502. Retrieved from https://doi.org/10.1016/j.berh.2016.08.006

Teixeira, P. J., Carraca, E. V., Markland, D., Silva, M. N., & Ryan, R. M. (2012). Exercise, physical activity, and self-determination theory: A systematic review. *International Journal of Behavioral Nutrition and Physical Activity, 9*(78). Retrieved from https://doi.org/10.1186/1479-5868-9-78

Tracy, S. J. (2010). Qualitative quality: Eight “big-tent” criteria for excellent qualitative research. *Qualitative Inquiry, 16*(10), 837-851. doi: 10.1177/1077800410383121

Wallace, L. S., & Dhingra, L. K. (2014). A systematic review of smartphone applications for chronic pain available for download in the united states. *Journal of Opioid Management, 10*(1), 63-68. doi: 10.5055/jom.2014.0193

Wan, A. (2014). Gp pain management: What are the ‘ps’ and ‘as’ of pain management? *Australian Family Physician, 43*(8), 537-540.

Yardley, L., Morrison, L., Bradbury, K., & Muller, I. (2015). The person-based approach to intervention development: Application to digital health-related behavior change interventions. *Journal of Medical Internet Research, 17*(1), 30. Retrieved from http://doi.org/10.2196/jmir.4055

Zufferey, M. C., & Schulz, P. J. (2009). Self-management of chronic low back pain: An exploration of the impact of a patient-centered website. *Patient Education Counseling, 77,* 27-32. doi: 10.1016/j.pec.2009.01.016

Appendix A

Participation Information Sheet

PARTICIPATION INFORMATION SHEET

PROJECT TITLE: Facilitators and barriers of patient self-management digital tools for chronic pain: psychologists' perspectives.
HUMAN RESEARCH ETHICS COMMITTEE APPROVAL NUMBER: [redacted]
PRINCIPAL INVESTIGATOR: Professor Anna Chur-Hansen
STUDENT RESEARCHER: Kate McKinlay
STUDENT'S DEGREE: Honours in Psychology

You are invited to participate in the research project described below.

What is the project about?

This research project is about psychologists' perceptions of the facilitators and barriers for the use of digital and online self-management tools (i.e., apps, websites etc.) by patients who live with chronic pain. We would like you to do an interview that will take between 45-60 minutes. As part of the interview, you will be asked your understanding of self-management for chronic pain, what are the major facilitators and barriers towards the use of digital self-management tools - and how these could be improved, along with any recommendations for future design and development. The purpose of this study is to identify aids or challenges from a specialised psychological perspective that may inform effective, appropriate and widespread tools for use by patients living with chronic pain.

Who is undertaking the project?

This project is being conducted by Professor Anna Chur-Hansen, Professor Paul Rolan, and Kate McKinlay (student researcher). The interviews will be conducted by the student researcher. This research is part of the requirements of a research thesis for the degree of Honours in Psychology at the University of Adelaide under the supervision of Anna Chur-Hansen and Paul Rolan.

Why am I being invited to participate?

You are invited as you are a psychologist with experience in treating and working with people with chronic pain.

What am I being invited to do?

You are being invited to attend a single one-on-one interview either face-to-face in Adelaide, or via telephone, Zoom or Skype, that explores your perspectives regarding the aids and challenges towards patients with chronic pain using digital and online self-management tools. With your permission, the interview will be audio-recorded. If face-to-face, the interview will take place at a public location of your choice in Adelaide, at your private office, or in a private room in the School of Psychology at the University of Adelaide.

How much time will my involvement in the project take?

You will be asked to take part in a single one-on-one interview with the student researcher that will take approximately 45-60 minutes. There will be no direct or indirect financial benefit, participation is completely voluntary.

Are there any risks associated with participating in this project?

The study has no foreseeable risks and is unlikely to cause any harm or distress to you.

What are the potential benefits of the research project?

You will not gain a direct benefit. The findings will contribute to the minimal literature on the facilitators and barriers of digital self-management tools for chronic pain patients from a psychologist view point.

Can I withdraw from the project?

You can withdraw from the study at any time without explanation. We can withdraw your data anytime up until submission of the thesis (i.e., October 2018).

What will happen to my information?

Your interview will be audio-recorded and transcribed into a written interview. This will be un-identifiable with a number allocated to you, or pseudonym of your choice. The audio-recordings, notes and transcripts from the interviews will be accessed by the student researcher and her supervisor. You will be offered the opportunity to receive a copy of your final de-identified transcript within two weeks of your interview and request changes if you would like to. You will also be offered a summary of the research findings on completion of analysis. The findings may be included in a relevant journal paper, via media release through the University of Adelaide or conference paper. All audio recording, notes, and transcripts will be stored on a university password-protected computer. The student researcher will be the only individual accessing this. At the completion of the project, all files will be deleted from the computer and destroyed. A copy of the final transcripts will be stored on a USB at the School of Psychology at the University of Adelaide for a period of seven years, at which time they will be destroyed. If you are interested in the results of the project, we will send this to you.

Who do I contact if I have questions about the project?

If you have any questions, please contact Anna Chur-Hansen (anna.churhansen@adelaide.edu.au or (08) 8313 5738), Professor Paul Rolan (paul.rolan@adelaide.edu.au or (08) 8313 0599) or the student researcher (kate.mckinlay@student.adelaide.edu.au)

If I want to participate, what do I do?

If you wish to participate, please contact the student researcher to organise an interview (kate.mckinlay@student.adelaide.edu.au). Upon review of the consent form, you can email a signed copy to the student researcher. Alternatively, you can provide a signed consent form on arrival to the interview.

What if I have a complaint or any concerns?

The study has been approved by the Human Research Ethics Committee at the University of Adelaide (approval number H-2018-32). This research project will be conducted according to the NHMRC National Statement on Ethical Conduct in Human Research (2007). If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the Principal Investigator. If you wish to speak with an independent person regarding concerns or a complaint, the University's policy on research involving human participants, or your rights as a participant, please contact the Human Research Ethics Committee's Secretariat on:
Phone: +61 8 8313 6028
Email: hrec@adelaide.edu.au
Post: Level 4, Rundle Mall Plaza, 50 Rundle Mall, ADELAIDE SA 5000
Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

Yours sincerely,

[redacted]

[redacted]

[redacted]

Appendix B

Consent Form

Human Research Ethics Committee (HREC)

CONSENT FORM

1. I have read the attached information sheet and agree to take part in the following research project:

Title:	Facilitators and barriers of patient self-management digital tools for chronic pain: psychologists' perspectives.
Ethics Approval Number:	[redacted]

2. I have had the project, so far as it affects me, and the potential risks and burdens fully explained to my satisfaction by the research worker. I have had the opportunity to ask any questions I may have about the project and my participation. My consent is given freely.

3. Although I understand the purpose of the research project is to improve the quality of health/medical care, it has also been explained that my involvement may not be of any benefit to me.

4. I agree to participate in the activities as outlined in the participant information sheet.

5. I agree to be:
   ☐ Audio-recorded

6. I understand that I am free to withdraw from the project at any time.

7. I have been informed that the information gained in the project may be published in a journal article, via media release through the University of Adelaide, or in conference presentations.

8. I have been informed that in the published materials I will not be identified and my personal results will not be divulged.

9. I would like to receive a copy of my final de-identified transcript from my interview.
   Yes ☐ No ☐

10. I would like to receive a summary of the findings of this study.
    Yes ☐ No ☐

11. My information will only be used for the purpose of this research project and it will only be disclosed according to the consent provided, except where disclosure is required by law.

12. I am aware that I should keep a copy of this Consent Form, when completed, and the attached Information Sheet.

13. **Participant to complete:**

Name: ________________________ Signature: ___________________________ Date: ____________

Researcher/Witness to complete:

I have described the nature of the research to____

(Print name of participant)

and in my opinion, she/he understood the explanation.

Signature: ______________________ Position:_____________________________ Date: ____________

Appendix C

Interview Guide

Main prompt questions

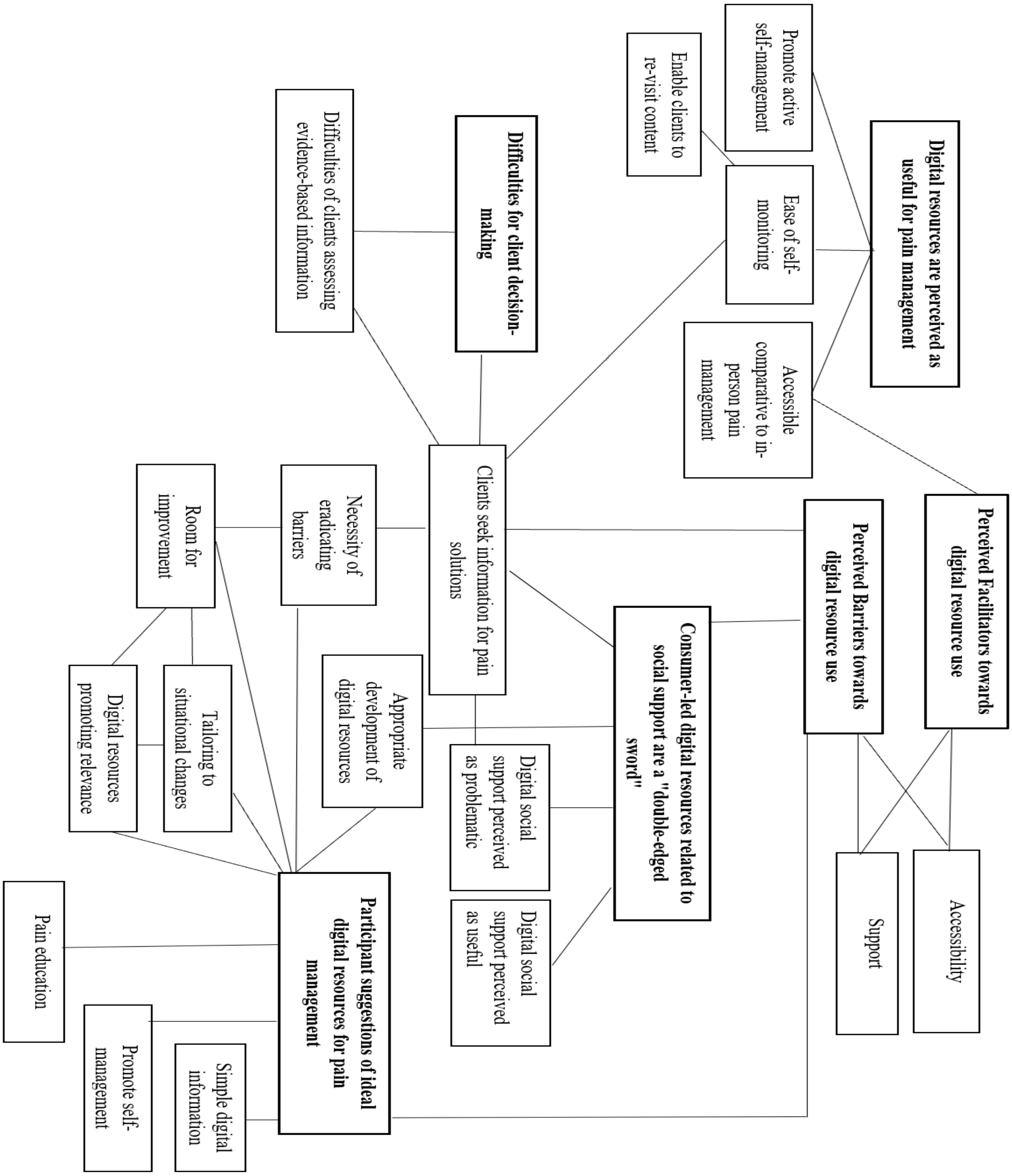
- Can you please tell me about your clinical experience working in chronic pain, as a psychologist? (For how long, context?)
- What do you think is the current best practice for the management of chronic pain?
- What kind of things do you do in your practice for clients with chronic pain?
- What kinds of things do you think people with chronic pain are doing outside of your consults to manage their pain (problems?)
- What are your thoughts about clients with chronic pain going online as a form of pain management?
- What kinds of online resources have you recommended to your clients?
- How do you think online resources may help improve someone's pain?
- Can you see any reasons for clients to be more likely to use an online resource for their pain?
- Can you see any reasons for clients to be less likely to use an online resource for their pain? (Challenges? What factors might deter a client?)
- Are you aware of any online resources that have been developed or lead by patients? (Do you think it is necessary if they are involved in the development? Patients role?)
- What do you think is the most important content to be included in an online resource for pain management?
- Is there anything else you would like to add to this conversation or ask me?

Additional questions

- Have you received any feedback from clients following use of online resources? (Have they been useful?)
- How might you help someone with chronic pain engage in an online resource?
- Can you tell me of any benefits or disadvantages there might be of clients going online for pain management?
- What are your thoughts of online social support for those with chronic pain?
- What are your thoughts on monitoring and tracking pain and other factors influencing pain? (Is self-management important?)
- What do you think online resources should look like for clients to manage their C.P appropriately?

Appendix D

Thematic map illustrating relationships between overarching themes (presented in bold) and sub-themes



Appendix E

Submitted Abstract for oral presentation at the University of Adelaide Undergraduate Research Conference, 27th July 2018, Adelaide, South Australia

Abstract

Purpose/Rationale

Chronic pain is a worldwide epidemic, with challenges pertaining to its high prevalence, complexity, management, psychosocial impact and economic impact. As such, there is growing interest towards the development and use of non-pharmacological therapies such as digital and online resources. These resources promote people to independently manage their pain and can be accessed through computers and electronic hand-held devices, as apps, pain programs, discussion forums and information websites. Research has investigated health professional and patient perspectives of the usefulness of online resources for pain management, with mixed results and a lack of clear direction on how to improve online resources. To date, there is no literature detailing psychologists' insights and understandings, which is unexpected due to their involvement in the development of online resources and their integral role in pain management.

Research Question/Focus

The purpose of the present study is to explore psychologists' perspectives towards the use of online resources for pain management.

Research Methodology/Approach

A qualitative design was used to conduct in-depth semi-structured interviews with 8 psychologists who treat clients who live with chronic pain. A qualitative approach using thematic methods of analysis was chosen to enable a descriptive and rich explanation of psychologists' views towards the use and usefulness of online resources for pain management.

Significance and Originality of Findings

Preliminary findings will be presented outlining the perceived facilitators and barriers of the use of online resources such as apps, pain programs, discussion forums and information websites, their usefulness, and suggestions of how online resources should be tailored for pain management. These findings will contribute to this area through an unexplored specialised psychological perspective, with their suggestions potentially informing the formulation of appropriate and tailored online resources for the management of chronic pain.

Email of acceptance for the University of Adelaide Undergraduate Research Conference, 27th July 2018, Adelaide, South Australia

Dear Kate

Thank you for your interest in presenting at the 2018 Undergraduate Research Conference and for your abstract: How do psychologists think chronic pain can be managed using online resources?

On behalf of the panel, I am delighted to invite you to present on Friday 27 July. Congratulations!

Our panel would however like to request some changes to your submitted abstract. Please view the comments below and resubmit your amended abstract to daseevents@adelaide.edu.au by no later than **9am Monday 9 July**.

With regards to your final presentation slides, please email these in in .ppt or .pptx format no later than **9am Monday 23 July** to daseevents@adelaide.edu.au with the subject line: URC PowerPoint Presentation. You **must** use the template, which found here. This template is of a specific slide ratio and includes all relevant branding for the University and this event.

You have been allocated a total of 20 minutes (this includes 10 minutes for your presentation, five minutes for questions, and a five-minute allowance for changing presenters). There will be a judge in your room to assist with keeping time. Please note that conference delegates may leave during question time in order to attend a presentation in a different room.

Please contact your supervisor as soon as possible to share the good news. They may also be able to provide advice on preparing for your presentation.

The presentations for this year’s conference will not be recorded. Should you wish to record your presentation, you may ask your supervisor, or a friend in the audience to do so using a phone. Some students find it helpful to watch their presentation prior to attending future conferences.

I encourage you to view the program (which will be available online soon) and attend as many other presentations as possible to support fellow students. Please be ready to present, and in your allocated room 10 minutes prior to the beginning of your session block. A presentation time and room number will be provided to you over the next few days in a separate email.

The Undergraduate Research Conference is a public event and I welcome you to invite your supervisor, friends and family to register at: https://urc2018.eventbrite.com.au

I wish you the very best for your presentation!

Best wishes
Phil

Professor Philippa Levy
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Office of the Deputy Vice-Chancellor and Vice-President (Academic)
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The University of Adelaide, AUSTRALIA 5005
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Slides from oral presentation given at the University of Adelaide Undergraduate Research Conference 27th July 2018, Adelaide, South Australia

THE UNIVERSITY of ADELAIDE

UNDERGRADUATE RESEARCH CONFERENCE

Use of online resources for pain management: Psychologists' perspectives

Kate McKinlay, School of Psychology,
Faculty of Health and Medical Sciences

adelaide.edu.au

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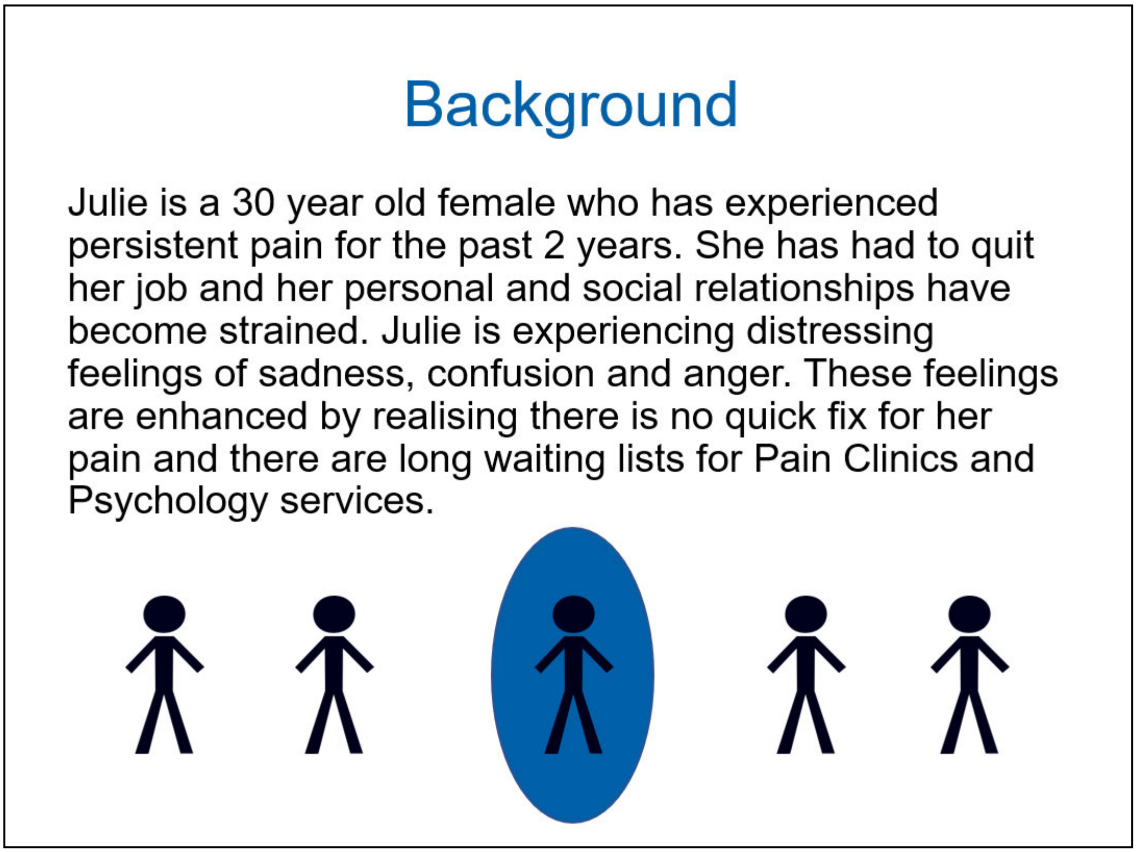
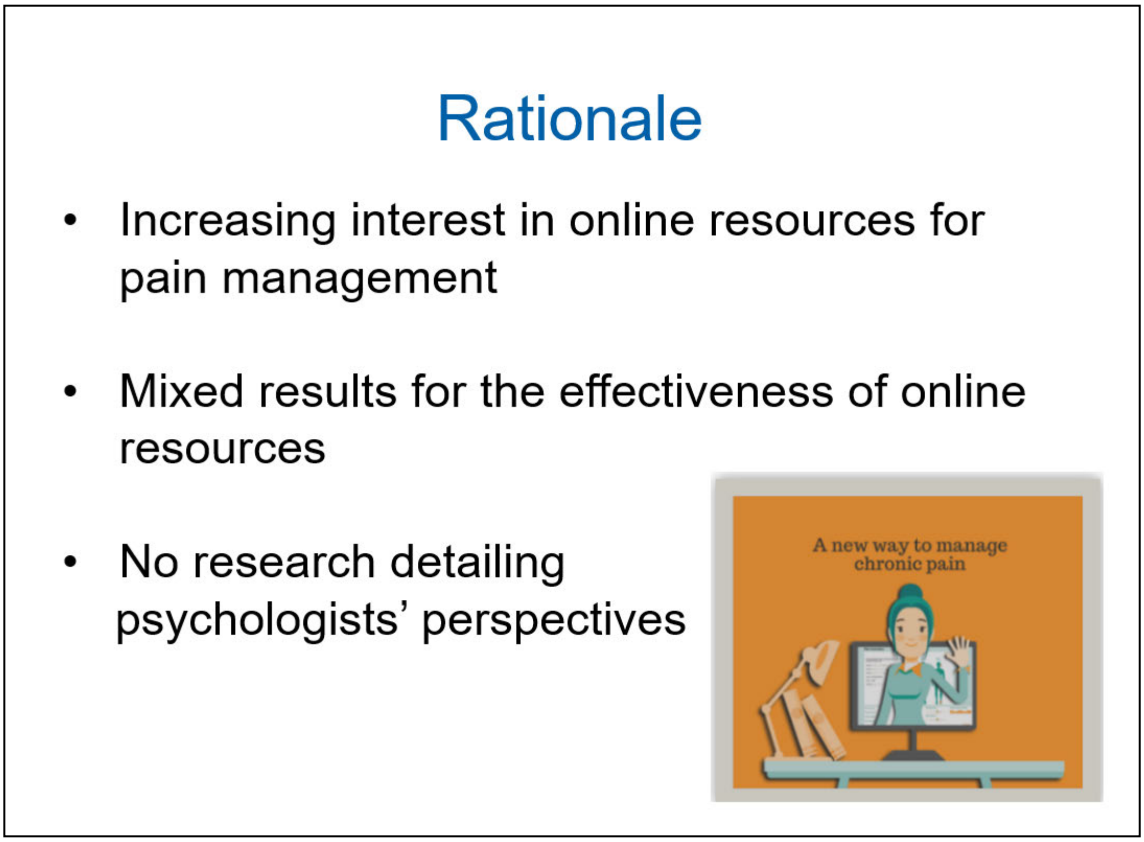


Background

Julie is a 30 year old female who has experienced persistent pain for the past 2 years. She has had to quit her job and her personal and social relationships have become strained. Julie is experiencing distressing feelings of sadness, confusion and anger. These feelings are enhanced by realising there is no quick fix for her pain and there are long waiting lists for Pain Clinics and Psychology services.



Rationale

- Increasing interest in online resources for pain management
- Mixed results for the effectiveness of online resources
- No research detailing psychologists' perspectives

Aims

- Barriers and facilitators of online resource use for those with chronic pain
- Usefulness of online resources
- Psychologists' recommendations

Research Question

What are psychologists' perspectives towards the use of online resources for pain management?

Method

- 8 registered psychologists
- Qualitative interviews
- Analysis by identifying themes in the data

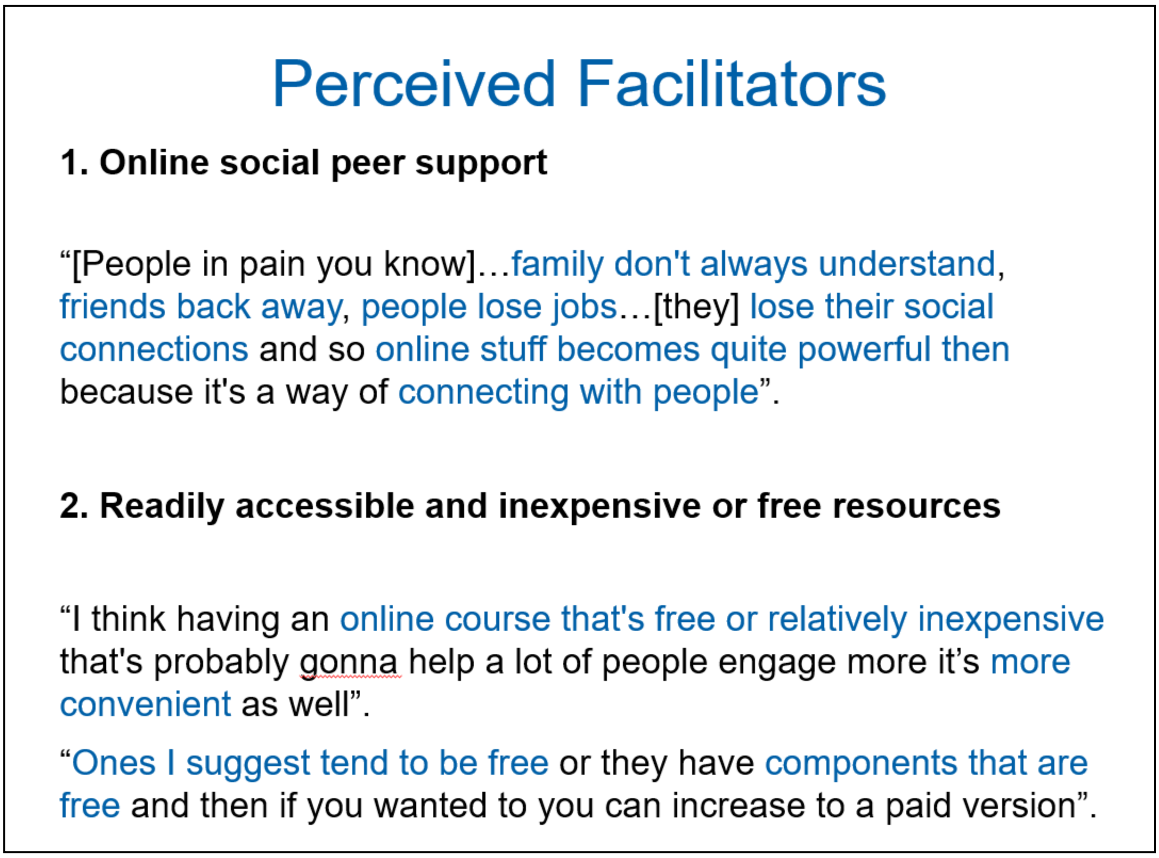
Perceived Barriers

1. Need for human contact

"One of the big issues for a lot of our patients is that they need to discuss things and if you're sitting there…online [reading or watching a video]…it might not be enough. So they have questions, they wanna have a dialogue with someone about what it is you're telling them or what they're hearing".

2. Cost of devices and internet

"So you've got to have a computer or a…smartphone or a iPad or something like that which costs money to get and it costs money to pay for your internet access or WiFi"…



Perceived Facilitators

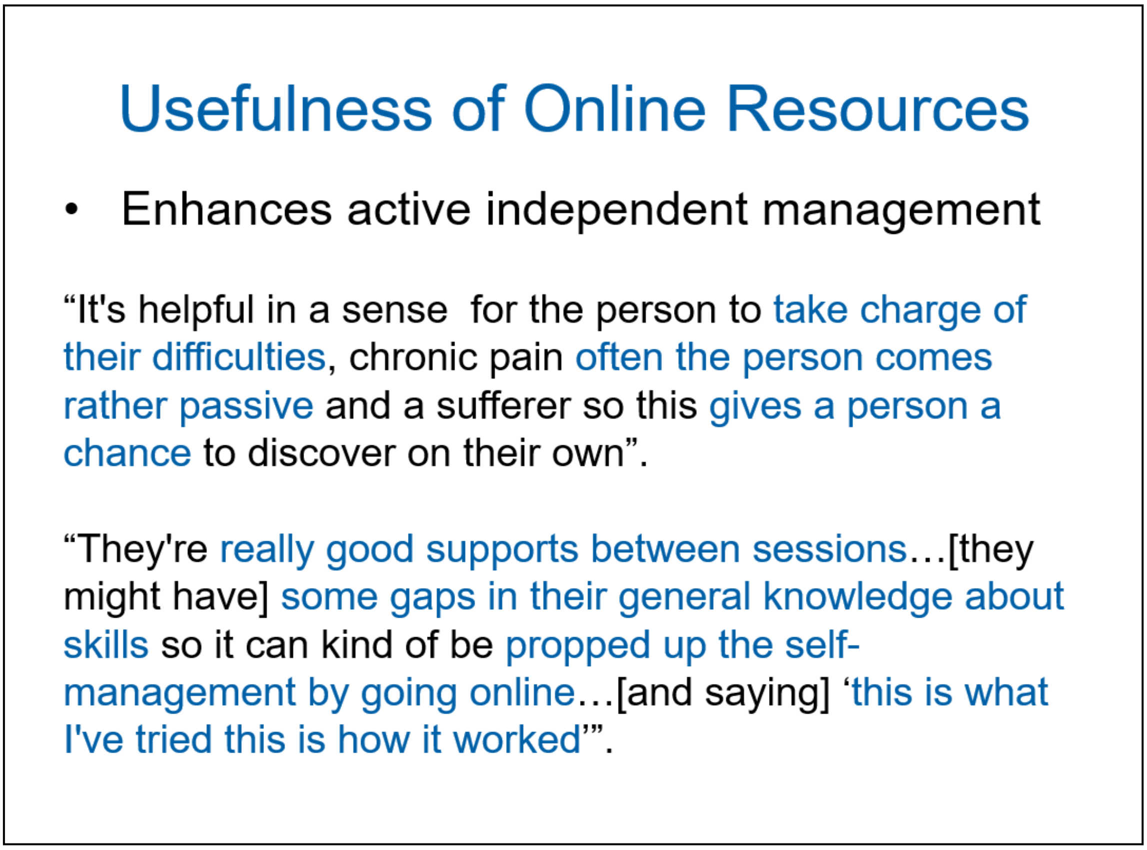
1. Online social peer support

“[People in pain you know]…family don't always understand, friends back away, people lose jobs…[they] lose their social connections and so online stuff becomes quite powerful then because it's a way of connecting with people”.

2. Readily accessible and inexpensive or free resources

“I think having an online course that's free or relatively inexpensive that's probably gonna help a lot of people engage more it’s more convenient as well”.

“Ones I suggest tend to be free or they have components that are free and then if you wanted to you can increase to a paid version”.



Usefulness of Online Resources

- Enhances active independent management

“It's helpful in a sense for the person to take charge of their difficulties, chronic pain often the person comes rather passive and a sufferer so this gives a person a chance to discover on their own”.

“They're really good supports between sessions…[they might have] some gaps in their general knowledge about skills so it can kind of be propped up the self-management by going online…[and saying] ‘this is what I've tried this is how it worked’”.

Recommendations

"We don't have enough
so more would be good".

"I think there's always
room for improvement".

"So I guess components I guess around education, stress management, mood management, time management even and then around values, any kind of sleep hygiene strategies".

Implications and Future Research

- Tailoring online resources towards more effective pain management
- Interview chronic pain patients to compare perspectives
- Psychologists and chronic pain patients co-designing online resources

Conclusion

- Online resources enhance active independent pain management
- However there is still a lack of online resources and a need for "improvement"

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