

SOCIAL MEDIA AND MENTAL HEALTH:

A NARRATIVE LITERATURE REVIEW

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## ABSTRACT

**Objective:** The purpose of this literature review is to inform occupational therapists on how the use of social media could influence mental health.

**Background:** Given the rapid growth and pervasive use of social media as an occupation there are various ways of looking at whether it has a positive or negative impact on mental health. Social media literature is limited in occupational therapy. As there are many uninformed perspectives, it is important for occupational therapists to have an educated understanding of the complexities that exist when clients are using social media. This will enhance the knowledge and skill base of occupational therapists working in mental health.

**Method:** This paper draws on the framework developed by Seabrook, Rickard and Kern (2016) and uses the narrative literature review design outlined by Green, Johnson and Adams (2006).

**Discussion:** The positive gains from social media use include the capacity for enhancement of social connections, social support, self-esteem and quality of life. Risks include, exposure of negative social comparison, cyberbullying, harmful material, addiction as well as possible physiological changes that could impact on mental health.

**Conclusion:** This review provides extensive coverage of the literature on the possible influences to mental health from social media use. It provides information to occupational therapists on how social media use can benefit clients and includes warnings of potential risk factors. This paper aims to encourage informed conversations between occupational therapy clinicians and clients about the use of social media as an occupation, particularly about influences on mental health.

**Keywords:** social media, social networking sites, mental health, well-being

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## CHAPTER 1

### INTRODUCTION

“Where past generations conceived of time and space in a linear way – past, present, and future – the new digital generations live more in the present moment while existing in multiple spatiotemporal spaces” (Suissa, 2014, p. 1916). Communication has changed over recent decades due to the invention of social media. I recently met up with a friend who had just returned from a long time travelling. While sitting in the coffee shop I realised that I knew of all the adventures she was telling me about because they had been posted on social media prior. It did seem somewhat unfair that I was not hearing of her exciting stories for the first time. In the past there would have been different details of her travels personally revealed to different people, however with social media each person received the same story in the same way and usually at the time it occurred.

The occupation of social media has many facets, and together with the varying characteristics of the individuals that use it the outcomes can be complex. Turkle (2012) discusses the attraction of social media and the seductive powers it can have, resulting in some people’s want to be constantly connected. Cacioppo and Patrick (2009) discuss the ways in which social media can affect us. They liken it to using a car, in that we can either use it to drive long distances alone or we can use it to pick up our friends for a football match. Acknowledging that if we use social media to spend long periods of time alone we could feel lonely and if we use it to connect with others this could enhance social connection (Cacioppo & Patrick, 2009). Social media and its association to mental health have been a topic of ongoing discussion in both general media and professional literature.

#### **1.1 Purpose**

The purpose of this literature review is to inform occupational therapists on how the use of social media could influence mental health. By identifying and discussing the opportunities

and the risks to mental health from social media use, it is anticipated that greater informed discussion can take place between therapists, clients and families.

## **1.2 Background**

I am an occupational therapist working in mental health. I am aware of the importance some client's place on their social media lives and online presence. Recent examples include: A client requesting leave from hospital to go to the gym so she can continue to provide updates on her workouts to her followers on Facebook; and a client reporting using social media has built up his social network and resulted in support from peers and invitations to more social events. I have witnessed the negative and positive effects this type of media can have on clients' mental health. This observation has generated thought-provoking conversations with colleagues, client's and their families about the impact of social media which appears to be forever changing as technology advances. No longer do we hear of parents being concerned about their teenagers talking for hours on the landline phone. Technology has moved past this as most teenagers now have their own device that they can use privately. These advancements have provided a new way of communication and at the same time have generated a new lot of concerns.

I am interested in the use of social media and how particular aspects of this occupation can influence mental health. Social media is an occupation that is increasingly commonplace in many peoples' lives. Growing numbers are spending a significant amount of their day online on social networking sites (Naslund, Aschbrenner & Bartels, 2016). Social media usage is the most common activity of young people today (O'Keeffe, Clarke-Pearson & Council on Communications and Media, 2011). The invention of the smartphone has vastly increased access to social media, including social networking sites like Facebook. It is now not unusual to see individuals hunched over looking down at a mobile device in their hand, of which they regularly check for updates and messages. This posture is so common that terms like 'text neck' have evolved to describe the pressure this occupation places on neck muscles (Hansraj, 2014).

Similarly, terms like ‘no-mobile-phone-phobia’ (NOMO) are being used to describe individuals distress for when they are out of mobile phone contact, or ‘fear of missing out’ (FOMO) to describe the apprehension that something better is taking place elsewhere which creates anxiety when one is not able to connect on social media sites (D’Agata, 2008; Przybylski, Murayama, DeHaan, & Gladwell, 2013). These terms are often coined in the media as negative influences to the health and well-being of individuals who use social networking sites. There are many reports concerning social media use having detrimental impacts on individuals. Examples include; social media being blamed for causing loneliness and social isolation (Turkle, 2012), or cyberbullying on social media having an adverse impact on mood and self-esteem of victims (Kowalski, Giumetti, Schroeder & Lattanner, 2014). One well-known example is celebrity and model Charlotte Dawson, who spoke widely on television, radio and social media about her life struggles and mental health. Charlotte was targeted by ‘trolls’ who bullied her on Twitter and encouraged her to commit suicide. Dawson confronted her bullies personally and spoke publicly about this, however, sadly she did take her own life (SunriseOn7, 2014).

Reported cases of suicide with a connection to social media are of increasing concern (Holladay, 2010). One such case is that of ex nurse William Melchert-Dinkel who posed as a depressed female nurse and used chat rooms to develop suicide pacts with many vulnerable people online, which likely contributed to at least two people completing suicide. Melchert-Dinkel was convicted of assisting suicide in 2014 (“Former nurse helped instruct man”, 2015). Although social media is not responsible for the actions of this individual, it provided him a medium to disguise himself and persuade others that suicide was an option.

I have had personal experience of social media enhancing my own social network and have witnessed how it can provide peer support and social connection for clients in the mental health service. I have also witnessed how social media has reduced stress for a friend who has an ill husband in hospital. She can post updates on social media that reach many chosen people and does not have to spend hours phoning people and telling the story over and over. This method has also allowed her to ask for support when needed, for example, “can someone please look after the children for a couple of hours on Saturday?”, and allows others to respond in a time convenient way. The ease of communication via social media has reduced stress in a significant manner for this family.

Betton and Tomlinson (2013a) presented case studies of clients with mental health problems who are using social media to aid their recovery. They identified that support from peers, shared knowledge and reduction in isolation were some of the benefits. In another report, Betton and Tomlinson (2013b) propose that managing the risks of social media are similar to managing other risks that mental health professionals manage every day. They identify two caveats, one that the pace of activity on social media is phenomenal, and caution about the permanency of postings on social media which are not able to be easily erased (Betton & Tomlinson, 2013b). Negotiating risk with clients is core business for mental health clinicians and occupational therapists alike, and it is imperative that knowledge is expanded on social media risks along with the exploration of the opportunities with clients.

### **1.3 Social Media**

The development of Web 2.0 made social media possible, as it has allowed interactions, sharing and communication between users of the internet (Moreno & Gannon, 2013). Since the very first social media site SixDegrees in 1997 researchers have explored the impact this media type has on its users (Boyd & Ellison, 2007). Social media use has caused extreme changes in how we interact and communicate with each other (Pantic, 2014). Deep (2015) likened the exponential growth of social media to that of a revolution.

O’Keeffe et al. (2011) state “any website that allows social interaction is considered a social media site”, including sites like Facebook, Messenger, Twitter and Snapchat, video sites (such as YouTube) and virtual worlds (such as Minecraft) as well as gaming sites (p. 800). This definition includes gaming which is a type of social media, however or the purposes of brevity gaming literature is not included in the current study. By using this definition of social media, it allows for the inclusion of research using the terms social media, social networking, or social networking sites. Users of social media can create posts on profile pages, build networks, communicate with others, upload videos, photographs and write blogs.

### **1.4 Rationale for the current study**

In searching the occupational therapy literature, no research was found about potential risks and opportunities of social media nor on its influence on mental health. The initial search of the literature yielded little information, with results focused on social media use for the advancement of occupational therapy professional knowledge and networking. Therefore, it was necessary to broaden the search to include literature from other health professions, including psychiatry, psychology, nursing, social work, paediatrics, along with technology, education and areas of sociological research, to analyse and synthesise this information to better inform occupational therapists.

### **1.5 Process of identification of a framework for the study**

The literature accessed presented many topics related to social media use and mental health. Examples include, well-being, social capital, constant connection, privacy violations and addiction. Table 2 (p. 13) presents a full list of topics from the initial search of the literature. In effort to collate the information the topics were divided into the risks and benefits of using social media and categorised into three areas. The areas were; social effects (for example, social isolation, loneliness, social comparison), identity effects (for example, development of unhealthy body image, sense of identity challenged) and mental disorders (for example, depression, anxiety, addiction, eating disorder).

This process provided some clarity of the type of influence; however, the interconnectivity created confusion. For example, social comparison may be a factor that effects social elements (social isolation), as well as identity aspects (development of unhealthy body image) which could lead to diagnosable mental disorders (depression, anxiety or eating disorders). By separating in this way, it was difficult to explain the influence of using social media on mental health. This strategy did not allow for inclusion of some topics on social media use, for example, the frequency of use or disclosure of information, as they were not an effect, but more a potential influence that may impact mental health.

Through comprehension of the literature, it became clearer that the benefits and risks of social media use on mental health are complex and that much of the impact is dependent on how social media was used and the reasons for use. Seabrook et al. (2016) wrote a recent systematic review on depression, anxiety and social networking site use. Their work has been pivotal in the development of this project by clarifying factors that influence mental health when using social media.

Seabrook et al. (2016) identified a framework that consisted of nine themes as influences on depression and anxiety specifically, and this structure provided a useful way of looking at the literature as a whole. The themes were: frequency of social media use; size and structure of social network on social media; social media for self-disclosure and expression; quality of interactions; social support; social connectedness; social comparison; addictive or problematic social media use and physiological effects. These themes were not anything new and were all part of the initial list of topics in some way, however, different language was sometimes used to describe them. The initial list of topics were refined into the above themes, which are used to explore and explain how using social media can influence mental health.

Therefore, this structure of identified themes from Seabrook et al. (2016) was adopted as a framework for this project. This framework essentially provided a format for an analysis of the occupation of social media use. It allowed for detailed information to be presented on various aspects of social media use and the influence engagement in this occupation could have on mental health. Engagement in social media has changed how people communicate with each other, it has changed privacy and exposed individuals to facets of others' lives that they may never have known about. As occupational therapists, we could benefit our clients from being conversant of the opportunities social media presents, however at the same time we need to address management of inherent risk. It is urgent that occupational therapists equip themselves for the continually changing and growing phenomena of social media.

## **1.6 The research question**

The research question is: How can the use of social media influence mental health?

## **1.7 Objectives**

- To identify risks and opportunities of social media use
- To identify what is important for occupational therapists to be aware of when working alongside clients

## **1.8 Conclusion**

The invention of the occupation of social media has infiltrated the lives of many and the impact of this is largely unexplored in the occupational therapy literature. This chapter explains how this literature review is positioned to explore both the positive and negative influences of social media use on mental health so that occupational therapists can be reliably informed to better understand how clients can use social media well as part of their recovery. The method used was a narrative literature review, structured on the Seabrook et al. (2016) framework as discussed above. The next chapter further explains the methodology, the process for selection of a narrative literature review, data collection and analytical processes.

## CHAPTER 2

### METHODOLOGY

Occupational therapy literature on social media use and the influence on mental health is limited. Given the prevalent use of social media it has been identified that a literature review gathering informed evidence on risks and opportunities would benefit the occupational therapy profession and service users alike. This chapter describes the methodology used in this literature review. Firstly, it explains different types of literature reviews that were considered and then justifies the reasons for selection of a narrative literature review to answer the research question. The chapter includes a description of the structure of the narrative review, how the information was sourced, along with strategies used for searching the data. Followed by an explanation of the process of selecting papers, screening, data collection, data analysis and further discussion of the Seabrook et al. (2016) framework used to present the data.

#### **2.1 Different forms of literature review**

Upon deciding on what type of literature review to do for this research, different types of reviews were examined, including narrative, systematic and scoping reviews. Findings included that systematic reviews had usually very focused, specific, narrow questions and were often clinical in nature. (Robinson et al., 2016; Selkie, Fales & Moreno, 2016; Song et al., 2014). Questions from scoping reviews were generally less specific than systematic reviews. Scoping reviews were used to answer a range of research questions. Some of the questions aimed to identify research gaps or ‘what is known’ on a topic, some define clinical interventions, while other questions examined the effectiveness of a particular way of working, for example, 12-hour shift patterns (Ashton, Hutchesson, Rollo, Morgan & Collins, 2014; Colquhoun et al., 2014;



Fang, Gerbrandt, Liwander & Pederson, 2014; Harris, Sims, Parr & Davies, 2015; Sun & Larson; 2015; Wagman, Håkansson & Johsson, 2015).

The examination of several examples of narrative literature reviews also revealed an array of objectives. The narrative studies reviewed had aims to provide further information, integrate knowledge to better prepare professionals or to examine an impact on participants lives (Block, West & Goldin, 2016; Carta, Moro & Bass, 2015; Culley et al., 2013; Faubion, Kuhle, Shuster & Rocca, 2015; Greenfield, 2010; Padhy, Khatana & Sarkar, 2014; Simpson & Thomas, 2015; Stergiou-Kita, 2010). Of the narrative studies with defined research questions, they were of similar ilk to the research question asked here. They are of an exploratory nature, suggesting a review of a vast amount of literature in an attempt to make sense of what evidence is available and how this can add to the body of knowledge (Balatsoukas, Kennedy, Buchan, Powell, & Ainsworth, 2015; Culley et al., 2013; Stergiou-Kita, 2010).

A systematic literature review structure was not considered for this research, as the current research question is neither narrow, specific, nor clinical. However, consideration was given to the use of a scoping review methodology to answer the question. This method might have provided greater rigour and transparency and may have been a more streamlined process. However, the current question required an extensive narrative commentary with synthesis through text, rather than the typical tabular format of a scoping review. A narrative approach would more adequately address and allow for the description of the themes associated with influence to mental health through the use of social media. Given this area of research is largely untouched in occupational therapy, the narrative literature review approach is a sound starting point. Following much discussion and consultation with my supervisor and colleagues, the narrative literature review design was considered an appropriate fit for the question posed.

There are several well-documented pitfalls of narrative reviews, for example, an unsystematic approach, lacking specific criteria for exclusion with no acknowledged guidelines (Cronin, Ryan & Coughlan, 2008; Ferrari, 2015; Green et al., 2006). Narrative reviews have been described as one of the "weakest forms of evidence to use in terms of patient care, primarily because they deal with the broader issues rather than the focused clinical problems" (Green et al., 2006, p. 104). However, given the broad nature of this non-clinical research question, it is appropriate to use a narrative design to gather the evidence to date. Additionally, other measures

were taken to increase rigour in this study, for example, checking each article against explicit inclusion and exclusion criteria, using peer reviewed literature and the use of the Narrative Overview Rating Scale to prompt and ensure the structure of this review followed guidelines (Green et al., 2006). Refer Appendix A.

Narrative reviews are suited to broad questions and can cover a range of subjects (McKinstry, Brown & Gustafsson, 2013). This type of review allows a range of evidence to be consulted, enabling identification of themes, analysis of information through making comparisons and identifying conflicts with the use of narrative text (Rouse & Hitch, 2014). Social media is a recent occupation and therefore research is relatively new and emerging in this area. In completing a narrative review, this allows access to emerging ideas that have not yet been studied to a high level. This paper aims to advance knowledge and awareness of occupational therapists and given the speed at which social media use continues to grow it is important to be informed and acknowledge what is known thus far.

## **2.2 The structure of a narrative literature review**

The chapters of this research include the headings detailed by Green et al. (2006) in their description of a narrative overview, however, there is a slight variation in the order due to the requirements of the current study. The acknowledgement section was moved after the abstract, and the table and figures are listed after the table of contents.

### **Table 1.**

*Components of a narrative overview by Green et al. (2006).*

- 
1. Title
  2. Structured abstract
  3. Introduction
  4. Methods
  5. Discussion
  6. Conclusion
  7. Acknowledgements
  8. References
-

## **2.3 The Process for a narrative literature review**

### **2.3.1 Framing the research question.**

As with all research, a process is involved in the production of a literature review. For narrative literature reviews this process includes selecting a review topic, searching the literature, then gathering, reading and analysing the evidence and finally writing the review whilst acknowledging references (Cronin et al., 2008). Once the topic is selected an important part of this process is the framing and refining of a research question. Beecroft, Rees and Booth (2006) purport that it is necessary to have a focused question before embarking on a literature review. The development of a sufficient question is essential and this process was provided with a substantial amount of time and discussion. Given the selected topic was broad it was necessary to develop a question suitable to cover the topic and not to focus it so narrowly that evidence became sparse and lacking in utility for the occupational therapy clinician. The question of "how can the use of social media influence mental health?" was decided upon to capture and organise the relevant research in ways that describe how the use of this new media can impact the mental health of those who engage in it. An expansive research question such as this one calls for an overview including an analysis and synthesis of various branches of research that have attempted to answer a part or parts of the question over the last decade or so.

### **2.3.2 Information sources and search strategy.**

A search of PubMed Central, Psych Info, ProQuest, CINAHL, Scopus, Taylor and Francis, Medline and Google Scholar databases was conducted. The Google Scholar search occurred at the end of the database search and was not used in the study as it did not yield any additional information to add to the literature already collected. The above databases were selected following consultation with librarians both at Otago Polytechnic and University libraries. Appropriate search terms were devised following a review of abstracts, titles and

keywords of articles collected by the author and discussions with librarians. The search terms used in various combinations were “social media”, “social network”, “mental health”, “wellbeing”, "psychology", "psychiatry" and in one database "cyberbullying". For a detailed summary of search terms, refer to Appendix B. The search term "wellbeing" and its variants were used given the connection between well-being and mental health. Additionally, occupational therapists focus is often on well-being and quality of life and how these constructs impact on an individual's independence and ability to engage in occupation, rather than mental health diagnosis alone.

### **2.3.3 Process for selecting papers**

This review was designed to take a broad-ranging view of the topic and included the search for literature from different disciplines and different age groups. This literature review includes research of various methodological designs in the effort to provide a holistic view of the influence that social media use may have on mental health.

#### **2.3.3.1 Inclusion criteria.**

Research was included in the study if it met the following criteria:

- Articles written in English only.
- Literature published since 2000.
- Peer-reviewed articles (including, journals, dissertations and conference proceedings), using the following research methods: quantitative, qualitative and mixed methods.
- Reference to social media sites including Facebook, Messenger, Twitter, Snapchat and video sites like YouTube.

#### **2.3.3.2 Exclusion criteria.**

Research was not included if it was:

- Opinion pieces or non-peer reviewed articles.
- Literature that is a guide on how to use social media.
- Literature that is about occupational therapists professional use of social media or how to use social media to enhance your career.
- Literature that specified gaming, internet gaming or video gaming.

### 2.3.4 Screening Process

All articles located through database searches were screened and assessed for eligibility by the author. In the first instance, duplicates and ineligible publications were removed. The next step involved the abstracts and articles being read and further screened according to inclusion and exclusion criteria. The articles were printed and the author wrote on each article if it met criteria, along with topics discussed and a critique of the paper. The number of reports included and excluded at each stage of the selection process is illustrated below in Figure 1.

### 2.3.5 Data Collection Process

Following the screening process all papers were allocated to a topic (see Table 2). This was for categorising purposes initially and later served as a stepping stone to identifying themes that developed. Literature was also gathered through hand searching of the articles reference lists to locate further pertinent information.

Table 2.

*Topics that emerged from the literature search*

Depression/mood disorders	Suicide prevention
Anxiety (incl. Fear of Missing Out)	Wellbeing
Addiction (incl. problematic and compulsive use)	Social connectedness
Alcohol and substance use	Social capital
Eating disorders (incl. body dissatisfaction)	Social implications
Sleep	Developmental implications
Social isolation and loneliness	Social or peer support
Cyber-bullying	Mental health recovery
Privacy violations	Social media use -motivation, frequency, disclosure, constant connection.
Suicide and self-harm	Social comparison

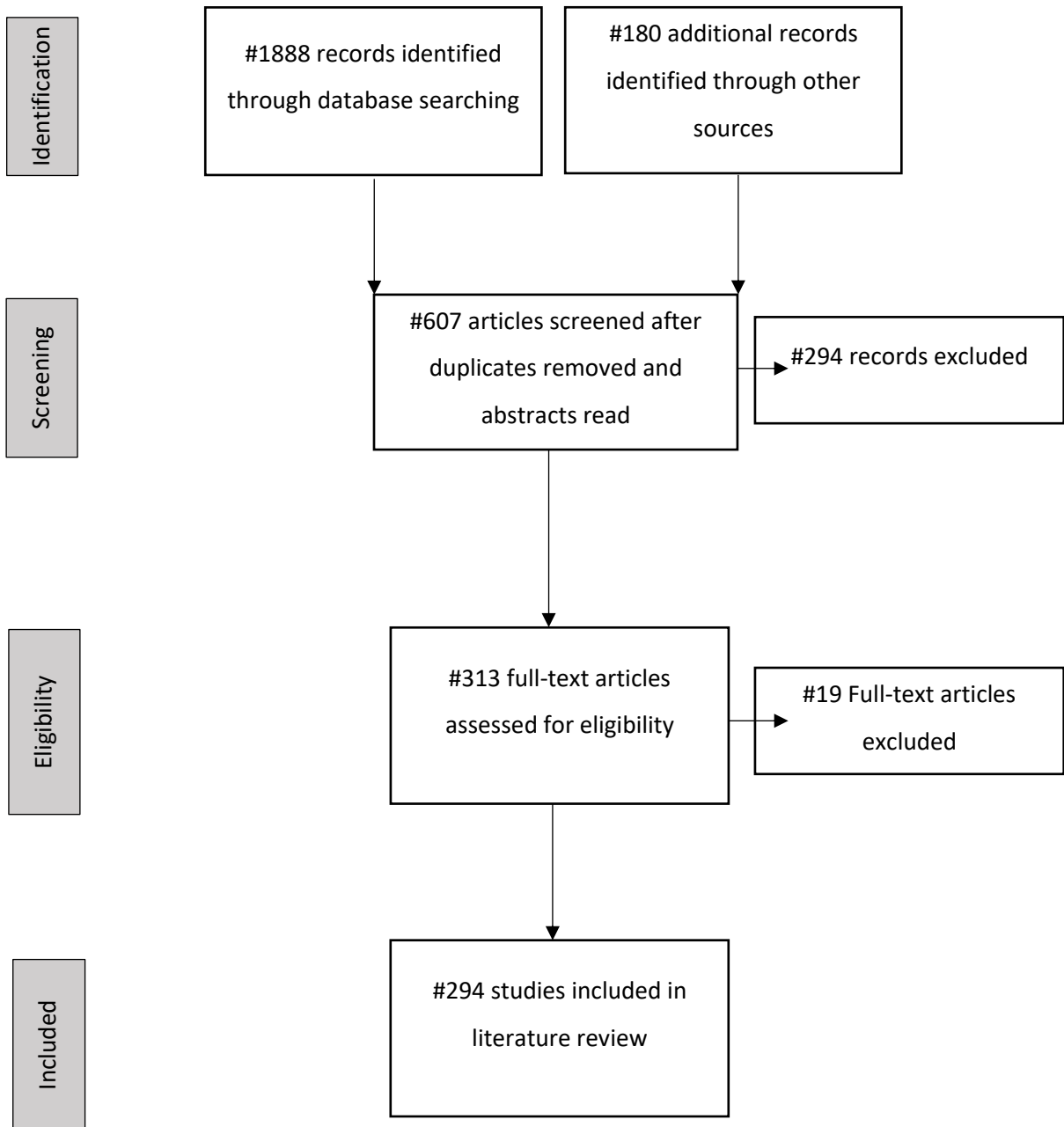


Figure 1. Modified PRISMA Flowchart of articles selected in this literature review (Moher, Liberati, Tetzlaff & Altman, 2009).

### 2.3.6 The Data Analysis framework

Table 3.

*Framework of themes for the current study adapted from Seabrook et al. (2016).*

Frequency of social media use
Size and structure of social networks on social media
Social media sites for self-disclosure and expression
Quality of interactions
Social support
Social connectedness
Social comparison
Addictive and problematic social media use
Physiological effects

The Seabrook et al. (2016) framework above provided a format for an occupational analysis of social media use and allowed for an exploration of how this occupation can influence mental health in both positive and negative ways. The Seabrook et al. (2016) review looked at how social media use can effect depression and anxiety, it also examined how individuals with depression and anxiety engage in social media (for example, language used on social media). The later was not the focus of the current research question, therefore this theme was removed from the framework structure utilised.

It is acknowledged that the themes provided in the Seabrook et al. (2016) research are not exhaustive as the number of studies reviewed was relatively small at 70, from quantitative research designs only as well as conference proceedings. As previously mentioned the review was only looking at depression and anxiety literature; therefore, it was possible that further themes might arise as the project developed, however, this was not the case. The literature collected in relationship to social media and mental health was able to be located within each of the themes, for example, cyberbullying literature related to the *quality of interactions* section in the discussion chapter. This project is not specifically looking at mental health disorders

(although this is part of the review) but importantly at the factors of social media use that could influence mental health.

See below for an explanation of how the list of original topics can be incorporated into the smaller list of themes used as a framework. This process of collation involved preliminary viewing the literature to identify associations between topics and themes used. Each topic that was associated with mental health did fit within a theme, in fact some within several themes.

Examples of how themes of the Seabrook et al. (2016) framework fit into the original list of topics:

1. Social Comparison - has a connection with the development of an unhealthy body image and potentially development of eating disorders.
2. Quality of interactions – negative interactions or bullying from others online could impact a person's development of depressive symptoms and suicidality.
3. Social Support - greater perceived support from social media friends, may play a protective role in the production of anxiety symptoms.
4. Physiology effects - with the constant availability and attractiveness of social network sites, other basic needs such as sleep are disrupted, resulting in vulnerability to develop sleep problems which can contribute to the development of mental health issues.

## **2.4 Conclusion**

This chapter has detailed the rationale for selection of a narrative literature review design and describes the processes involved from data collection through to analysis. The findings of the current study are presented using the Seabrook et al. (2016) framework of themes that have an influence on mental health in some way. That influence could be a teenager's constant negative comparison through looking at Instagram photos of celebrities, resulting in disordered body image and development of an eating disorder. Alternatively, the influence could be a grandmother feeling supported by her grandchildren through Facebook posts resulting in feelings of belonging reducing her risk of developing depression. Both positive and negative



influences of social media use on mental health will be discussed within the Seabrook et al. (2016) framework in the discussion section below.

## CHAPTER 3

### DISCUSSION

This chapter will follow the framework provided by Seabrook et al. (2016) and discuss literature under the themes of: frequency of social media use; size and structure of social network on social media; social media for self-disclosure and expression; quality of interactions; social support; social connectedness; social comparison; addictive or problematic social media use and physiological effects. Each of the themes are examined in relation to their potential effect on mental health. At times it has been difficult to distinguish between themes and similar literature can present under multiple themes. This is partly due to similar aspects between themes (for example, social connectedness and social support may have some overlap) and also due to some lack of definition of concepts in the literature. However, careful attention has been paid to the specific theme being addressed in effort to minimise the impact of literature recurring under different themes. Therefore, each section will have a focus on a particular area of mental health, for example, cyberbullying could feature in the majority of themes, however it is discussed under the *quality of interactions* section with only brief mention in other relevant areas. This decision was also made to compact the size of this research project.

Themes and main subjects discussed in the literature review:

- *Frequency of social media use*; depression, anxiety including active and passive use.
- *Size and structure of social networks on social media*; self-harm, suicide risk and prevention.
- *Social media for self-disclosure and expression*; personality traits, impression management and alcohol use.
- *Quality of interactions*; positive and negative interactions and cyberbullying.
- *Social support*; different types of social support including peer, emotional and psychiatric support.
- *Social connectedness*; social connectedness and social capital.

- *Social comparison*; eating disorders and body image.
- *Addictive and problematic social media use*; obsessive compulsive behaviours, other types of problematic use.
- *Physiological effects*; stress, sleep and effects from using electronic devices.

### **3.1 Frequency of social media use**

Frequency of social media use and possible associations with the depression and anxiety are explored below. This section also includes a discussion on the difference between passive and active use of social media. It is acknowledged that more time frequenting social media sites is a risk factor for being a victim of cyberbullying (Kowalski et al. 2014) and individuals who self-harm have been found to spend more time on social capabilities of the internet than those who do not (Mitchell & Ybarra, 2007). However, discussion on both cyberbullying and self-harm behaviours occurs in subsequent sections of this chapter.

Research has found that age and Facebook use intensity are negatively related (McAndrew & Jeong, 2012; Ozimek & Bierhoff, 2016). Similarly, Christofides, Muise and Desmarais (2012) found that younger people state they are engaging more than older people report on Facebook. Most of the research to date is on social media use for adolescents and young adults. However, a survey by Hayes and colleagues (2015) on 18-70+ year olds found that older adults are less frequently on Facebook and report being less emotionally affected by the site (Hayes, van Stolk-Cooke & Muench, 2015).

#### **3.1.1 Frequency of social media use and depression**

The term ‘Facebook depression’ had been used by clinicians and media alike and described as “the affective result of spending too much time on the social networking site” (Blease, 2015, p. 1). However, Jelenchick, Eickhoff and Moreno (2013) did not find a correlation between Facebook and depression, which was similar to previous findings (Ohannessian, 2009; Selfhout, Branje, Delsing, ter Bogt & Meeus, 2009). No research supports that ‘Facebook depression’ is a phenomenon in the depression literature (Feinstein,

Hershenberg, Bhatia, Latack, Meuwly, & Davila, 2013). Therefore, it is too soon to intimate that 'Facebook depression' is a risk for its users.

Seabrook et al. (2016) completed a systematic review of literature and found that prevalence of social media use generally did not indicate a clear association with depression and no studies found an association between frequent social media use and a reduction in depression. This research identified 16 studies examining depression and frequent use of social media finding no significant relationship and eight studies did find a positive association with depressive symptoms (Seabrook et al., 2016). The mixed findings may be related to various social media sites examined and different methods used.

One such study in which the design may have affected findings is a study by Lin et al. (2016) who reported that social media use was significantly associated with increased depression. The methodology of self-report survey allowed for a large sample size, however, the findings are limited due to the potential for over or under reporting when participants are self-assessing both time spent on social media and depressive symptoms. Pantic et al. (2012) reported similar findings with a similar design, however unfortunately, this study does not provide information on what social media activity was examined. Detailed assessment or interview would have allowed for greater understanding of this possible association and its direction.

Studies that used an experience sampling method to collate information on participants' social media usage did not find any significant association between the frequency of social networking site use and symptoms of depression over time (Jelenchick et al., 2013; Kross et al., 2013; Steers, Wickham & Acitelli, 2014). Longitudinal research suggests that both depression and anxiety remain uninfluenced by the frequent use of social media use (Davila, Hershenberg, Feinstein, Gorman, Bhatia & Starr, 2012; Feinstein, Bhatia, Hershenberg & Davila, 2012; Jelenchick et al., 2013; Kross et al., 2013; Steers et al., 2014).

### **3.1.2 Frequency of social media use and anxiety**

There seem to be fewer studies about the relationship between the frequency of social media use and anxiety. Kross et al. (2013) completed a study with 82 young adults and did not find a relationship between the frequency of Facebook use and feeling concerned or worried. Seabrook et al. (2016) found three studies with a direct positive relationship between using

social media frequently and anxiety, with seven studies reporting a non-significant relationship and no reports of a reduction in levels of anxiety. However, there has been a flurry of recent research in this area. For example, Vannucci, Flannery and McCauley Ohannessian (2017) in their research on emerging adults found that greater daily use of social media was related to higher dispositional anxiety symptoms and more likelihood of experiencing a probable anxiety diagnosis. This result was similar to that found by Andreassen et al. (2016) with their Norwegian sample aged from 16-88, where more anxiety symptoms were reported in association with excessive use of social networking sites.

In conclusion, the association between anxiety and social media is not clear nor is its directionality. It could be suggested, that young adults who experience anxiety symptoms actively participate more regularly in social media activities to try and gain validation through comments or ‘likes’ (Clerkin, Smith & Hames, 2013). Alternatively, it may be that use of social media resulting in an overload of information can increase stress responses, activating physiological or psychological mechanisms which could elicit feelings of anxiety (Chen & Lee, 2013; Mauri, Cipresso, Balgera, Villmira & Riva, 2011). This will be further discussed under the *physiological effects* section.

### **3.1.3 Passive and active use of social media**

Frequency of use may be a blunt description of any occupation. So, it is useful to understand why a person is doing the occupation, in addition to how often they are doing it. In the case of social media, active or passive use holds a clearer association with respect to anxiety and depressive symptoms, than frequency alone (Seabrook et al., 2016). This finding is consistent with literature about internet use in general, where the frequency of use of the internet does not predict depression, especially when examining the social aspects of the internet (Kraut, Kiesler, Boneva, Cummings, Helgeson & Crawford, 2002). Some studies have looked at more subtle differences in how social media is used (i.e., passive/surveillance use versus active/interactive use) and the influences on mental health.

#### **3.1.3.1 Passive use of social media**

Passive consumption of social media includes browsing newsfeed or reading others posts. Passive activity on social media is not associated directly with either anxiety nor depression, however; it has been observed that people with high social anxiety or depression

can develop different patterns of usage as a way of compensation (Shaw, Timpano, Tran & Joorman, 2015; Tandoc, Ferucci & Duffy, 2015). Tandoc et al. (2015) found that passive use or surveillance on Facebook is not depressing unless feelings of envy are elicited. They reported that greater levels of envy were noted in participants who used Facebook heavily (Tandoc et al., 2015). In another study, Shaw and colleagues (2015) examined the relationship between social anxiety symptomology and Facebook usage and found that increased levels of social anxiety were significantly correlated with the use of Facebook in a passive nature, but not when using Facebook actively to produce posts online. This study also identified that anxious rumination influenced the association between passive use of Facebook and social anxiety (Shaw et al., 2015).

A study by Krasnova, Wenninger, Widjaja and Buxmann (2013) found that observing others social media profiles with photos of social occasions or vacations in which the observer was not invited to can contribute to feelings of loneliness, envy and resentment. Baek, Bae and Jang (2013) examined social relationships and well-being on social media and found that greater reliance on parasocial relationships (for example, unidirectional relationships when a user gets messages from celebrities) was positively associated with feeling isolated, lowering of interpersonal trust and greater excessive use on social network sites. This suggests that well-being may be impacted by a particular type of passive interaction (Baek et al., 2013; Lup, Trub & Rosenthal, 2015). Observation of profiles of strangers and celebrities is further discussed in the *social comparison* section later in this chapter.

### **3.1.3.2 Active use of social media**

Using social media actively (for example, interactive communication or producing posts) has a more complex association with mental health (Seabrook et al., 2016). Shaw et al. 's (2015) study found that there was a mutual relationship between depressive symptoms with more extensive posting and social interaction on social media. Similarly, Chen and Lee (2013) found in their study that interacting frequently on Facebook was associated with more psychological distress, in particular, that communication overload is greater and self-esteem is lowered. Further detail gained from Burke's doctoral thesis (2011) found that actively interacting in a one-on-one fashion on social media had a relationship with less depressive

symptoms and greatest well-being. This literature highlights that the actual activity on social media may have a differing impact on the users' mental health.

In another study, Simonicic, Kuhlman, Vargas, Houchins and Lopez-Duran (2014) conducted an online questionnaire of 237 students in a research participation pool at university, reporting a three-way interaction between active use of Facebook, gender and neuroticism. They identified that females with higher neuroticism who actively used Facebook had lower depressive symptoms (Simonicic et al., 2014). This research did not find a direct connection between Facebook and depressive symptomology. However, this study adds to the evidence that factors such as personality and gender could be moderators between depression and using Facebook frequently and actively (Simonicic et al., 2014).

A further study by Sagioglou and Greitemeyer (2014) took a social psychological approach to explore the emotional effects of Facebook use throughout three studies. Firstly, they found correlational evidence suggesting the greater amount of time spent actively using Facebook the more negative impact there was on mood. Secondly, they suggest causal evidence that Facebook use leads to a reduction in mood immediately afterward compared to controls. With their final study concluding the lowering of mood is because participants felt that time spent on Facebook was a non-meaningful activity and regarded as a waste of time, which had an adverse impact on subjective well-being (Sagioglou & Greitemeyer, 2014). This study used a 3-minute self-report survey in the first study, followed by analysis and correlation in the second and then a short online questionnaire was administered in which a modest amount of money was provided to participants. Therefore, this design does have some limitations in being short and relying on self-report for control conditions with no objective measures, along with inherent bias in participant selection due to paying subjects. However, this study explores the widespread use of Facebook and in particular the concept that engaging in social media is a meaningless occupation. The authors believe that people who engage in Facebook may be predicting incorrectly. I expect that by using Facebook people think they will feel better, more entertained or less lonely, when in fact this is not the case and there is a sense of meaninglessness that comes at the end of each session (Sagioglou & Greitemeyer, 2014).

#### **3.1.4 Conclusion of the frequency of social media use**

Some studies have linked frequent social networking site use with a lowering of subjective mood, satisfaction with life and well-being but not necessary with a diagnostic disorder (Kross et al., 2013; Sagioglou & Greitemeyer, 2014). Many studies have reviewed areas of well-being, psychological or emotional distress, in relation to the frequent use of social media (Burke, 2011; Chen & Lee, 2013; Hayes et al., 2015). Given the variation of terms and lack of definitions, it is likely that different constructs are being assessed. Along with methodological differences and greater bias in some study designs, the association between the frequent use of social media and the influence on mental health is not clear. However, this is not to say that the frequency of social media use does not influence mental health. It is possible that any of the negative effects mentioned could impact on one's mental health. Examples include; greater dispositional anxiety (Vanucci et al., 2017), lack of meaningful activity (Sagioglou & Greitemeyer, 2014), feeling envious, lonely or ruminative (Krasnova et al., 2013; Shaw et al., 2015; Tandoc et al., 2015). From an occupational therapy perspective, the finding of this research provide insight into the associated effects of a specific occupation.

Furthermore, a detailed look at both passive and active use of social media reveals additional insights. Research on the passive use of social media did not show an association with mental health disorders of depression or anxiety, however, observations reveal people with social anxiety seem to use social media more as a way of compensation (Shaw et al., 2015; Tandoc et al., 2015). Factors such as envy and loneliness are thought to influence well-being when using social media passively (Lup et al., 2015). Some studies found that there was an association between active use of social media and depressive symptoms (Shaw et al., 2015; Simoncic et al., 2014). Interestingly, the perception that the activity is not meaningful and time wasting could result in lowering of mood and subjective well-being (Sagioglou & Greitemeyer, 2014). Together this literature highlights the need for further research in this area which could expose how the subtle differences in social media use could influence aspects of mental health.

### **3.2 Size and Structure of social network on social media**

Studies examining traditional social networks offline have found that individuals with anxiety or depression have more depleted social networks, which subsequently can further



negatively impact mental health (Rosenquist, Fowler & Christakis, 2011; Santini, Koyanagi, Tyrovalos, Mason & Haro, 2015). Research on the size and structure of social media networks and its association with mental health has resulted in various outcomes. In this section, the size and structure of social networks on social media is discussed in relation to how mental health may be influenced by these features. In particular, the section on social media structure will focus on the exposure to content about suicide and self-harm.

### **3.2.1 Social media site friendship size**

Some studies reported significant negative associations between social anxiety and social media friendship size (Fernandez, Levinson & Rodebaugh, 2012; Weidmann & Levinson, 2015). Similarly, other literature revealed a significant negative association between depression and social media friend network size (Park, Kim, Lee, Yoo, Jeong & Cha, 2015; Park, Lee, Kwak, Cha & Jeong, 2013; Rae & Lonborg, 2015; Rosen, Whaling, Rab, Carrier & Cheever, 2013). As these studies were mostly cross-sectional in design, directionality was not able to be determined. Seabrook et al.'s (2016) systematic review of numerous studies, found for the most part no significant relationship between anxiety, depression and the size of social media friendship network.

Park and colleagues (2015) study expanded previous research that took a snapshot of friendship numbers on social network sites and looked at interactions over a 6-month period to gain more of an understanding of how individuals were using social media. They identified that people with depression did have smaller sized networks on social media and stated that the quality of the interaction is important to research rather than the number of friends on the network (Park et al., 2015). Additionally, a study by Moreno, Jelenchick, Egan et al. (2011) of college students and disclosure of depressive symptoms found that the size of the network was not associated with more disclosure on social media, suggesting again that the relationship and involvement with others is a significant factor that encourages communication.

Rosen et al. (2013) found in their study investigating Facebook and clinical psychiatric symptoms that a more substantial number of friends on Facebook was linked to fewer symptoms of dysthymia and greater symptoms of bipolar mania, narcissism and histrionic personality disorder. Another study identified that a larger friend group on Facebook was linked to increased satisfaction with life when the purpose for engaging in Facebook was to maintain a

connection with others (Rae & Lonborg, 2015). Manago, Taylor and Greenfield (2012) in their study on social networking sites of young adults found that individuals who reported greater social networks or audiences on social media predicted perceived social support and life satisfaction. This finding suggests that considerable more attention from a larger social network on social media may be a potential benefit to young adults (Manago et al., 2012). The methodology of this study (systematic sampling of the friend network while the participant was online) was an expansion on previous designs; however, greater insights may have been gained by analysing the participants entire network (Manago et al., 2012).

Best, Taylor and Manktelow (2015) found in their mixed methods study of young males that the quantitative data from questionnaires showed a higher number of friends on social networking sites was related to greater well-being scores. However, the focus group interviews revealed that the type of support (social support, social status and belonging) was the primary factor in developing and maintaining friendships. This suggests that in this population, context is important in friendship and not solely the quantity of friends on social media. This study design illuminates the additional insights gained from the rich data of the focus group method. The *social support* section in this chapter further discusses this concept.

### **3.2.2 Social media site structure**

Studies have shown that the structure of social networking sites can influence mental health and well-being. A study by Nambisan, Luo, Kapoor, Patrick and Cisler (2015) on older adolescents and social media found that positive references from others, for example, 'likes' on Facebook may increase subjective well-being and self-esteem. Another study by Steers (2016) discussed that the structure of Facebook could have consequences on emotional states of users as Facebook utilises an algorithm which selects what is seen by others and decides what to display on friends' newsfeeds. This structural feature could have detrimental effects on user's wellbeing, as lack of others responses could be interpreted in many ways, for example, that no one cares (Steers, 2016). The exposure to others content, in particular, content related to suicide and self-harming behaviour is discussed below. This includes a discourse on the increased risk of suicide and potential for suicide prevention to occur through structural elements of social media.

#### **3.2.2.1 Exposure to others content on social media.**

A study by Fox and Moreland (2015) conducted focus groups of 44 adults and explored the relational and psychological stressors connected to Facebook use. They found that users of Facebook commonly experience negative emotions and reported concern over experiences of privacy violations which they attribute to the Facebook structure that allows connectivity, visibility and prolonged availability of information online (Fox & Moreland, 2015). These features allow exposure to a large number of individual's information and also can provide access to each other's private information which may not be intended for a wide audience. Greater exposure to others information can occur because social media can extinguish previous boundaries regarding time and space, especially with the creation of virtual communities with no limits (Luxton, June & Fairall, 2012).

### **3.2.2.2 Exposure to content about suicide and self-harm.**

Another concern to social media users' mental health is the exposure to harmful content and possible risk of suicide. It is well documented that traditional media types have contributed to copycat suicides or suicide contagion, particularly when methods are discussed (Pirkis & Blood, 2001). The internet and social media structure are often unmonitored creating further concern of the risk of being educated and encouraged on methods of suicide (Alao, Soderberg, Pohl & Alao, 2006).

Daine, Hawton, Singaravelu, Stewart, Simkin, and Montgomery's (2013) systematic review found both positive and negative influences of internet use, including social media, on young people at risk of self-harm or suicide. Only 14 empirical studies met their criteria, with five reporting negative influences, (for example, normalising self-harm and discouraging seeking professional help), and seven reporting positive influences, (for example, gaining support and seeking coping strategies) (Daine et al., 2013). This study demonstrates that social media presents both benefits and risks to young people and as clinicians, it is essential to be aware of both ends of this spectrum.

Luxton et al. (2012) purport that social media use can influence pro-suicide behaviour, which is a concerning public health issue. Their study presented evidence that using social media and being part of virtual communities online can be a risk factor for vulnerable individuals (Luxton et al., 2012). Users of online chat rooms and discussion boards with their

ability to enable communication between users, have been known to facilitate suicide pacts and put pressure on users to attempt suicide (Biddle, Donovan, Hawton, Kapur & Gunnell, 2008). It is likely that interactions in this medium could exert pressure to act on suicide thoughts and glamorise those who have died by this method (Luxton et al., 2012).

Social media can allow for like-minded people to meet others online, an adverse effect of this is the development of maladaptive coping mechanisms that could result in suicide pacts between complete strangers. The first reported case of cybersuicide via suicide pact was in Japan in 2000, with many more reported since that time (Luxton et al., 2012). Suicide pacts established on the internet have now become a more common form of suicide (Naito, 2007).

Given the known effect in traditional media that reports of suicide can result in copycat suicides (Pirkis, Blood, Beautrais, Burgess & Skehan, 2006; Stack, 2003) it is possible that a similar effect occurs within social media (Ruder, Hatch, Ampanozi, Thali, & Fischer, 2011). Ruder et al. (2011) suggest suicide notes posted on social media sites that are viewed by others could create a type of 'Werther effect,' described as when vulnerable users may be urged to attempt suicide in a similar way to that mentioned.

Exposure and accessibility to social media content related to self-harm has also resulted in research investigating this relationship. The photo-sharing site Instagram is hugely popular especially among young females of high school age and concern is escalating over this type of media and its impact on users (Duggan, Ellison, Lampe, Lenhart & Madden, 2015). Real names are not required on Instagram allowing users to develop anonymous identities, with hashtags used to link similar material across social media sites allowing for greater access to related content. A study by Moreno, Ton, Selkie and Evans (2016) found that exposure to non-suicidal self-injury (NSSI) content on social media could influence adolescents negatively. They reviewed Instagram posts (n=201) using the search term "#selfharmmm" and identified several hashtags that were ambiguous relating to NSSI, for example, #cat, # blithe, #mysecretfamily. Hence, raising concern that the obscure hashtags may inadvertently expose people to self-harm photos (Moreno et al., 2016). This study showed how popular posts are about self-harm and how the structure of Instagram allows easy accessibility.

Additionally, the #mysecretfamily hashtag represented a number of terms about mental health, for example, '#Deb' for depression, '#Olive' for obsessive-compulsive disorder and

'#Annie' to represent anxiety. This suggests that NSSI community is highly invested in maintaining and evolving in the environment of social media and when administrators remove content the users change their access, suggesting administrator control is not a secure way to protect people from exposure to harmful content (Moreno et al., 2016).

Some research has identified that support from others on social media sites can benefit users and help cope with distress related to self-harm and suicide. A study by Whitlock, Powers and Eckenrode (2006) examining online forum content found that there was a relationship between self-harm techniques being shared and discouragement of disclosing. The obtainment of informal support from others in online forums was the most common positive influence reported in 28.3% of their sample (Whitlock et al., 2006). Another study reported that forums are used to meet people with similar issues, but more generally as a coping mechanism (Eichenberg, 2008).

Dyson et al. (2016) completed a systematic review of the literature examining social media use by children and young people to view and talk about self-harm. This research is descriptive which places limitations on the conclusions that can be drawn. However, it highlights the potential therapeutic value of engaging and belonging to social media sites and the support that may be gained. Of concern was the risk of content disclosed and discussed by others resulting in a possible 'normalising effect' which could result in encouragement and engagement in self-harm behaviours as a way of coping (Dyson et al., 2016).

Greater exposure to others content posted on social media sites can also play a role in the prevention of suicide. Many social media site administration departments aim to assist in suicide prevention and have mechanisms in place to address self-harm or suicidal content when it appears. When a message about suicide or similar is detected via algorithms preset on Facebook, a banner regarding suicide support options is sent to the user's page (Eggerston, 2015). Others who view the post can also access an icon, which reports the message to the Facebook Safety Centre (Eggertson, 2015; Cash, Thelwall, Peck, Ferrell & Bridge, 2013). Some of the big players in the social media scene including Tumblr, Facebook, Instagram and Pinterest have included content policies that detect posts with self-harm content which are then removed, undetectable and untraceable, and are replaced with links to suicide prevention helplines (Dyson

et al., 2016). Luxton et al. (2012) found 580 suicide prevention groups on Twitter and 3895 on Blogger.com and many videos devoted to prevention of suicide.

As well as the suicidal content removal from social media it has also been identified that postings about suicide or self-harm have resulted in others being alerted and help arriving quickly to those in need. Fu, Cheng, Wong and Yip (2013) in their analysis of online social network microblogs found when a blogger posted a photo of self-harm, that the repost network had a larger cluster coefficient and that the pace of diffusion of information was rapid. This suggests that the role of reposting to a greater network can occur quickly and allow for fast communications. The structure of the social network system could allow for emergency services to be alerted sooner and help faster in urgent situations, enhancing the role of suicide prevention (Fu et al., 2013).

Ruder et al. (2011) reviewed literature from two databases and found that in the case of a suicide note posted on Facebook, others do intervene and this public announcement allows for help to be sought. The prevention of suicide may be enabled by the disclosure on this medium (Luxton et al., 2012). Further research with a larger scope would be of benefit to know the impact that posting suicidal intent may have on the mental health of readers and investigating how and if disclosure of suicidal thought or intent resulted in getting help and prevention. This is often reported in popular media but not in professional literature, possibly due to the methodological and ethical challenges in doing such studies.

Fu et al. (2013) concluded that social media “can be a double-edged sword” in that it can create suicide contagion, but also may provide help to those struggling with suicidal thoughts (p. 406). The contagion effect may be greater if the posts about suicide are from a celebrity, which is a similar effect to when there is broadcast announcing the suspected suicide of a celebrity (Fu & Yip, 2009). Therefore, the benefit of gaining support from like-minded people may be considered helpful to those requiring it. However, the risk of influencing vulnerable people to act in ways that may be harmful to themselves exists (Luxton et al., 2012).

### **3.2.3 Conclusion on the size and structure of social networks on social media**

Mixed findings from the research on the size of social media friendship networks and the influence on mental health have led researchers to explore other concepts of online

friendships, in particular around the quality of the interactions and social connection with friends. There is an emerging body of literature exploring the idea that the social aspect of social media has greater value to the user than the number of friends they have on the network (Best et al. 2015; Rae & Lonborg, 2015).

Examination of the structure of social network sites has revealed some positive and negative aspects of the medium that could influence mental health. Research has found that getting positive feedback from others through social media can enhance self-esteem and subjective well-being (Nambisan et al., 2015). The structure of Facebook affords some protective factors, for example, when suicidal material is posted this sets off a chain of events, in that helplines are sent to the users and other viewers pages (Cash et al., 2013). Also, the rapid diffusion rate of information on microblog social networking sites makes it quicker for support to be alerted (Fu et al., 2013). Research has highlighted negative aspects related to the structure of social media sites. Examples include exposure of and accessibility to content related to self-harm or suicide and creation of online communities that encourage self-harm and suicidal behaviours (Luxton et al., 2012). Although social media sites are not responsible for the risks mentioned above, the structure of the sites may make it easier for the risks to infiltrate the lives of users' and subsequently impact the mental well-being of those exposed.

The occupation of social media has resulted in many changes to how people communicate and behave publicly and privately. For example, in the past, suicide behaviour or thoughts were not usually a public announcement, but more a private declaration or in the form of an intimate note. As detailed above, there may be positive and negative effects related to this change in communication of using online social media networks at any time of the day or night. The ability to connect online with complete strangers, of which it is hard to judge their intent has resulted in some people being taken advantage of or persuaded to engage in life-threatening behaviours. This is different from the past when suicide pacts were usually an intimate private arrangement between people who knew each other. The greater accessibility and exposure to others content, at any time of the day can impact on vulnerable users. However, it is not to go unrecognised that greater accessibility and exposure may help some people in getting the support they need from others online.

### 3.3 Social media for self-disclosure and expression

Social media sites are a place to keep in touch and up-to-date with others' lives and a forum to disclose information, discuss ideas and to talk about moods or feelings that may be difficult to share face-to-face (Baker & Fortune, 2008; Whitlock et al., 2006). Valkenburg and Peter (2009) purport "the finding that online communication enhances self-disclosure is one of the most consistent outcomes in computer-mediated-communication" (p. 3). This section discusses self-disclosure and expression on social media and its associations with particular personality traits, impression management and alcohol use. It is acknowledged that pressure to uphold status and provide updates to followers on social media is positively related to depression and anxiety (Rosen et al., 2013). However, depression and anxiety will not be discussed specifically in this section as they have been addressed earlier under *frequency of social media use*.

#### 3.3.1 Self-disclosure and expression: Personality traits

Social media has an attractiveness that can be hard for some to resist, with encouragement to self-disclose and regularly update posts and profile pages. An example includes Facebook asking "what is on your mind *your name?*" at the top of each person's profile page. Social media use can vary depending on personalities, for example, extroverted people use the media to extend their social network and disclose more than introverts (Ryan & Xenos, 2011; Seidman, 2013), whereas introverts use to keep up-to-date with what their friends are doing (Moore & McElroy, 2012). Deters and Mehl (2013) found that disclosure of information on social media can lead to feelings of connectedness, belonging and reduce feelings of loneliness. In contrast, Reid and Weigle's (2014) literature review on the risks and benefits of social media use among adolescents found that as young people's personalities emerge they explore their identity and sexuality, they are likely to post risky items online. Examples include posting photos involving substance use or sexually explicit comments which may result in negative consequences on health and well-being.



Studies are emerging on the relationship between social media and narcissistic personality disorder, suggesting that social media exacerbates the personality trait (Bergman, Fearington, Davenport & Bergman, 2011; Buffardi & Campbell 2008; Carpenter, 2012; McKinney, Kelly & Duran, 2012). Rosen et al. (2013) argue that narcissism is an epidemic which has grown exponentially over the past 20 years. It appears that the occupation of engaging in social media has all the elements that encourage narcissism. Mehdizadeh (2010) claim that social media sites in their encouragement of self-promotion or even vanity appeal to narcissists as they can customise pages and profiles in an effort to appeal to others and gain attention. In another study, Qiu, Lin, Leung and Tov (2012) found that users of Facebook (from both self-reported and observing others profiles) report disclosing more positive emotional experiences than they would in a real-life situation. This creates impressions that they have better emotional well-being than they actually do.

### **3.3.2 Self-disclosure and expression: Impression management**

Impression management is a term used in psychology and sociology which describes one's efforts to attempt to influence others impressions or perceptions (Leary & Kowalski, 1990). Regular impression management which involves much disclosure on social media profiles is positively related to depression and anxiety (Rosen et al., 2013). Another study found that self-disclosure on Facebook to gain reassurance predicted lower levels of self-esteem, which subsequently reduced feelings of belonging and increased thoughts of being a burden (Clerkin et al., 2013). Alternatively, Gonzales and Hancock (2011) found that exposure to one's own Facebook profile in which selective self-presentation and disclosure is a feature can have a positive effect on self-esteem.

### **3.3.3 Self-disclosure and expression: Alcohol use**

An emerging area of research is that of disclosure on social media related to drinking alcohol and the possible influence this could have on others drinking behaviour. It is well known that using alcohol can result in disinhibition and an exacerbation of personality traits. Boyle, LaBrie, Froidevaux and Witkovic (2016) found in their longitudinal study of college students that exposure to others alcohol-related posts on social media predicted the participants drinking behaviour six months later, with this relationship particularly strong for males. They also found that posts involving alcohol on Instagram and Snapchat may provide

more of an influence than on Facebook. This finding suggests that the disappearing nature of 'snaps' on Snapchat and the filters available to edit photos on Instagram may be why these particular social media sites are attractive to those posting alcohol-related content (Boyle et al., 2016). One remaining unanswered question is that of directionality: Is it that drinking behaviour offline influences social media use by increased disclosures, or does the use of social media and exposure to alcohol-related posts change drinking behaviour? Further studies also need to take into account other variables that may influence a person's drinking behaviour, for example, lifestyle, addiction problems and stressors.

### **3.3.4 Conclusion of social media for self-disclosure and expression**

Therefore, depending on a person's personality traits, individual preferences, and alcohol use social media is being used differently (Boyle et al., 2016; Mehdizadeh, 2010; Moore & McElroy, 2012; Ryan & Xenos, 2011). However, the literature did not show any evidence of self-disclosure on social media causing mental health conditions. Social media appears to be a platform to exacerbate personality traits or allow some to avoid particular features by personal preference, which could mirror what is happening in real life. The literature also highlights how the occupation of social media and its attraction to disclose and express oneself appears to be directly related to encouragement of narcissistic personality traits (Bergman et al., 2011; Buffardi & Campbell 2008; Carpenter, 2012; McKinney et al., 2012).

## **3.4 Quality of interactions**

Using social media and encountering negative social interactions has been associated with negative affect and greater depressive symptomology (Feinstein et al., 2012; Takahashi, Uchida, Miyaki, Sakai, Shimbo & Nakayama, 2009). A Facebook study found that people who were concerned that interacting online was dangerous, a privacy risk and worried about negative interactions from others were more likely to be socially anxious and less likely to use Facebook as a means of communication (Hong, Hwang, Hsu, Tai & Kuo, 2015). Therefore, negative interactions online can effect mental health and have differing influences on how the recipient feels on receiving them. This section addresses the effect of negative interactions

(cyberbullying) and briefly explores positive interactions on social media. Positive interactions are discussed in more detail under *social support* in the following section.

### **3.4.1 Quality of interactions: Negative effects**

Social media sites can be manipulated by bullies, and the structure of the site can allow this to happen, resulting in some people taking advantage of others. Javier, Dillon, DaBreo and De Mucci (2013) in their review of the literature on cyberbullying describes the story of Antony Stancl. Stancl was convicted and sentenced to 15 years in prison following a sad story of "catfishing" on Facebook, where he posed as girls and boys from his school, pressuring others to send sexually exposing photos which he then used to blackmail them. This story reveals how malicious some people can be and how the anonymous features of social media can allow individuals to be mistreated resulting in severe impacts on their mental health and well-being.

Cyberbullying is defined as "willful and repeated harm inflicted through the use of computers, cell phones, and other electronic devices" (Hinduja & Patchin, 2009, p. 5). Cyberbullying usually involves negative or harmful comments toward the individual being targeted online. Cyberbullying is considered a serious public health concern due to its links with psychopathology and suicidality (Aboujaoude, Savage, Starcevic & Salame, 2015).

Whittaker and Kowalski (2015) found that social networking sites were one of the most commonly used medium for cyberbullying. Evidence is emerging identifying strong relationships between being bullied via technology with self-esteem, suicidal thoughts, self-harm behaviour and substance use (Bauman, Toomey & Walker, 2013; Hinduja & Patchin, 2010, Litweller & Brausch, 2013; Moore, Norman, Sly, Whitehouse, Zubrick & Scott, 2014; Patchin & Hinduja, 2010; Perren, Dooley, Shaw & Cross, 2010; Sabella, Patchin & Hinduja, 2013).

In another study by Goebert, Else, Matsu, Chung-do and Chang (2011) found that victims of cyberbullying elevated the risk of depression by twice as much, the risk of problematic drinking and marijuana use by 2.5 times and increasing the probability of suicide acts by more than three-fold. This Hawaiian study had a multiethnic sample and used a mixed method approach with focus groups initially to identify pertinent issues and structured survey questions related to this. In their sample of 677 students, 56.1% had experienced cyberbullying in the last year, much of which was never reported (Goebert et al., 2011).

A study by Xu, Jun, Zhu and Bellmore (2012) analysed Twitter messages using an algorithm finding that approximately 15,000 tweets of a bullying nature are tweeted every day. Some websites allow people to comment anonymously which has resulted in crude, nasty comments left on user's pages, which may have been attributed to the suicide of a young 17-year-old following repeated cyberbullying (Javier et al., 2013). This report is similar to many media reports that claim that cyberbullying on social media may be associated with suicide.

Hamm et al. (2015) completed a scoping review on the prevalence and effect of cyberbullying in young people on social media sites and found that there is a consistent association between depression and cyberbullying, however, the evidence between mental health conditions generally and cyberbullying was not consistent. Despite this, it is important to acknowledge that the use of social media can be a location for negative interactions that can adversely effect the mental health and well-being of young people.

In another study, Singleton, Abeles and Smith (2016) interviewed 12 young people from mental health services on social networking site use and their well-being using a grounded theory approach. They found that direct judgement or threat often led to an "I'm not okay" belief, which was linked with feelings of insecurity, experiences of hypervigilance, avoidance, anxiety, reduced mood and for some self-harm was a means of coping with distress (Singleton et al., 2016). The methodology allows for a small sample size which is mainly females; therefore, the study does not address gender differences. However, the results are by no means invalid and provide rich data about individuals actual thoughts, experiences and the impact on their mental health and well-being.

On Snapchat, photos can be sent quicker than a usual text message and the sender can select how long the photo is available for others viewing before it disappears. Therefore, without concern about having photos stolen or used against them, many youth have sent compromising images of themselves to others innocently (Javier et al., 2013). The iPhone has a feature where a screenshot can be saved, meaning the 'snap' can be kept forever, which has resulted in some revengeful users reposting these pictures in other places with severe consequences to the original poster (Javier et al., 2013). This privacy violation is a form of cyberbullying.

On Instagram, young girls are engaging in what is referred to as ‘Instagram pageants’ which could be classified as cyberbullying. This is when the user posts a selection of photos in a grid of different girls they know including themselves and requests others to comment on who they believe is the prettiest. After this has finished the user who originally posted collates the results and decides who the winner is, announcing this and person who is the loser is given a red cross over their photo. This type of behaviour encourages self-comparison, but results in shame, embarrassment, likely reduces self-esteem significantly and could severely impact on the mental health of the loser (Javier et al., 2013).

Similar to cyberbullying, further concern has been raised with the connection between technology and vulnerable individuals who are predisposed to psychotic disorders, in particular how delusional systems motivate cyberstalking behaviours on social media sites (Krishna, Fischer, Miller, Register-Brown, Patchan & Hackman, 2013). Krishna and colleagues (2013) describe a case report of a young man with schizophrenia who is drawn to Facebook to stalk a young woman whom he believed he was in love. They suggest that this young man who was confused by a psychotic state, isolated and lonely was using social media to rationalise his thoughts and act on his delusions (Krishna et al., 2013). This is a single case report in which the authors are drawing conclusions; therefore, it is not robust evidence. However, it is important to acknowledge that this is not a lone example of social networking site problematic usage having an impact on mental health of both perpetrator and victim. The current review has specified to focus only on peer-reviewed literature; however, it is important to note that examples of cyberstalking and similar behaviour are often reported in the general media and on the internet.

#### **3.4.2 Quality of interactions: Positive effects**

Baek et al. (2013) investigated social media relationships and the connection with psychological well-being and found if the relationship is interpersonal and reciprocal, it is valued providing benefits similar to face-to-face interactions. This study identified that as long as the connection on social media is mutual, the effect is beneficial for both the mental health of the individual along with their social trust and feelings of belongingness (Baek et al., 2013). This self-report survey examining various social media sites demonstrates the importance of the quality of interactions and the features of the interaction that provide benefit to the user. One

effect of positive interactions on social media is social connectedness and social support which are discussed in the subsequent sections.

### **3.4.3 Conclusion of quality of interactions**

The quality of interactions between users of social media can have differing impacts on the mental health of individuals engaged in the medium. Baek et al. (2013) found if the relationship on social media was reciprocal and interpersonal in nature that this is what made the difference, likening the quality of the interaction on social media to have similar benefits to face-to-face interactions.

Social media sites are the most commonly used medium for negative interactions associated with cyberbullying (Whittaker & Kolwaski, 2015). The impact of cyberbullying may be greater than once thought especially as one study found more than half the participants reported being bullied online in the year prior, most of whom had never previously reported or talked about it (Goebert et al., 2011). The high incidence of cyberbullying could subsequently increase the risk of damaging effects on individuals' mental health (Goebert et al., 2011). The evidence of the connection between cyberbullying and mental health conditions is inconsistent; however, it does appear to be a consistent association between cyberbullying and depression in particular (Hamm et al., 2015).

The challenge with using social media is how to harness the benefits of positive interaction and how to mitigate against the risk of negative interactions and cyberbullying. It appears that communicating via a device does not allow for the usual ways in which we judge peoples character and intentions, i.e., body language and behaviour. Therefore, this may mean that social media places people at greater risk of being maltreated or misled as others intentions are not always apparent and it may not be easy just to walk away or log out.

## **3.5 Social support**

Positive interactions on social media may contribute to feeling socially supported. Social support has been defined as "the perception or experience that one is loved and cared for and part of a social network of mutual assistance and obligation" (Wills, 1991, p. 327). Social

support in the traditional sense (face-to-face) is related to less symptomology of depression as well as greater life quality (Jensen, Smith, Bombardier, Yorkson, Miró & Molton, 2014; Khalil & Abed, 2014; Wang, Cai, Qian, & Peng, 2014). It is known that social media and in particular Facebook is used to maintain relationships with people that the user knows and to establish new friendships or connections (Pempek, Yermolayeva & Calvert, 2009; Raacke & Bonds-Raacke, 2008; Sheldon, 2008). The role of social media and its association with social support has produced some mixed results in the literature. This section discusses the association between social support from social media with mental health and wellbeing. Additionally, there is also a discussion of specific types of social support, including, emotional support, peer support and psychiatric support and the relationship with social media.

### **3.5.1 Social support: Mental health and well-being**

In a study examining Facebook specifically, McCloskey, Iwanicki, Lauterbach, Giammittorio & Maxwell (2015) found that there was a negative association between the perceived social support (i.e., recipients subjective judgement) and severity of depressive symptoms and a positive relationship between perceived social support and quality of life. There was a non-significant association between social support received (i.e., specific actions including advice or reassurance) and depressive symptoms, with a positive association with domains of quality of life (McCloskey et al., 2015). The findings of this exploratory factor analysis produced some intriguing results that suggest that while individuals state that support from using Facebook is of benefit, this support may not lead to a decline in depressive markers or improvements in life quality (McCloskey et al., 2015).

Another study found that direct social interactions between two people on social media were related to less depressive symptomology and greatest well-being (Burke, 2011). The use of social media networks has been associated with engagement in supportive relationships, socialising with others, as well as increased feelings of belonging and greater self-esteem (Collin, Rahilly, Richardson & Third, 2011; O'Keeffe et al., 2011). Reconnecting with social networks and friends via social media has been identified as a means to help people who have experienced social isolation as part of their depressive illness (Veretilo & Billick, 2012).

Social networking site use may provide the much-needed social support for vulnerable youth. Burke's (2011) study identified the role that social networking sites could have in

supporting identity formation of young people. Time online is commonplace for youth and adults alike, and it is likely that the potential benefits of social support could play a protective role or provide a therapeutic function for those with depression (Rice et al., 2014). It is possible that social media sites employ a bidirectional influence on depressive symptoms, for example, positive interactions on social media may lead to greater social support with reduction in depressive symptoms and undesirable online interaction may result in more significant depressive signs (Rice et al., 2014).

Frison and Eggermont's (2015) study found that seeking social support using social media could worsen mood for some people. It has been suggested by Park et al. (2015) in a study that they conducted that support gained from social media engagement is perceived by those with greater depressive symptoms to be less support than is actually provided. A later study by Frison, Subrahmanyam and Eggermont (2016) went on to find that perceived support from social media can have a preventative role in reducing the impact of being a victim of cyberbullying on depressive symptoms. Together these studies highlight the importance that one's perception of the support provided can differ from actual support provided with varying influence on mental health.

Similar to depression, social support via social media networks could be protective for those experiencing anxiety (Seabrook et al., 2016). In a study on social anxiety and Facebook, it was found that perceived social support was the only significant predictor of subjective well-being for subjects with greater social anxiety (Indian & Grieve, 2014). However, this was not so for participants with low levels of social anxiety, suggesting that the social support from social media may provide specific benefits to the subgroup high in anxiety (Indian & Grieve, 2014).

In another study, Nabi, Prestin and So (2013) found that the number of friends on Facebook increased the perceived social support and this subsequently was related to less stress, less physical illness and greater life satisfaction. A review by Leist (2013) exploring social media from a gerontological perspective found that online communities provided by social media sites can provide social support when people are exposed to challenging life situations. Further positive consequences have been to reduce stress, lessen loneliness and increase feelings of self-efficacy and control (Leist, 2013).



O'Dea and Campbell (2011) completed a survey of 400 Australian emerging teens, investigating the relationship between online social interactions, perceived social support, psychological distress and self-esteem. They found that there was not a significant association between interactions online and social support, but time spent online interacting socially was negatively correlated with psychological distress and self-esteem. Another study by Yu, McCammon, Ellison and Langa (2016) examined older adults use of social media and social well-being, which was broadly defined as perceived social support and loneliness. They found that social media use is positively linked with perceived support from friends and family and feelings of connectedness with friends in particular. This study emphasises the fact that as people age social networks get smaller and that social media may help by providing social benefits which could contribute to feelings of belonging and connection (Yu et al., 2016).

A study by Oh, Ozakya and LaRose (2014) found a positive association between supportive interactions on social media and positive affect after the supportive interactions. Additionally, this study also found that with those participants with greater exchanges of interaction considered supportive had greater positive affect. A momentary sampling technique was used which allowed the amount of support and its immediate effect to be examined straight after receiving it. They found that the number of friends on social media sites led to greater psychological outcomes, only when supportive interactions and positive feelings occurred afterward (Oh et al., 2014). Again, this suggests that the quality of the interaction is what counts in establishing social support and influencing psychological well-being, rather than how often social media is accessed or how many friends a user has.

Another study by Best, Manktelow and Taylor (2014) found by surveying adolescent males, that those who discussed their personal problems with friends online reported statistically significantly higher levels of mental well-being. This suggests that the ability to communicate on social media about how you feel could be beneficial to the mental health of young men. The results also found that almost half of the males in the study were using social media for seeking help and support online indicating the popularity of the medium to gain support (Best et al., 2014).

A study by Liu and Yu (2013) investigated if college students Facebook use helped gain social support online and if online support is an augmentation of traditional social support. It is

known that social support generally contributes to well-being; however, this study found that online support via Facebook had little to no effect on well-being and that this relationship is mediated through general social support (Liu & Yu, 2013). This suggests that social support via social media is not effective as a means of social support alone. Further research is required to investigate the relationship between online and traditional social support especially as it is possible that individuals are gaining support from the same people in both arenas.

### **3.5.2 Emotional support**

One type of social support is emotional support, with lack of this type of support being related to reduced physical or psychological health outcomes and greater mortality risk (Reblin & Uchino, 2008; Strine, Chapman Balluz & Mokdad, 2008). A review by Shensa, Sidani, Lin, Bowman and Primack (2016) found that studies on the effect of emotional support and social media were conflicting. Therefore, they selected a large US sample (1785 young adult participants) and reviewed social media site engagement on various sites including, Facebook, Twitter, Google +, YouTube, Instagram, Pinterest, Tumblr, Vine, Linked, Snapchat and Reddit. Finding that participants who had greater amounts of time online were less likely to have increased levels of perceived emotional support. They also found that as time on social media increased, perceived emotional support decreased and frequency of social media use was not associated with perceived emotional support (Shensa et al., 2016).

### **3.5.3 Peer support**

Naslund, Grande, Aschbrenner and Elwyn (2014) investigated naturally occurring peer support through social media for people with severe mental illness that used YouTube. They used qualitative inquiry informed by online ethnography and analysed comments (n=3044) posted on videos on YouTube by those who identified as having a psychotic illness or bipolar disorder. They identified four themes of peer support: Reducing isolation and providing hope; gaining support through interaction and reciprocity with peers; sharing tips for coping with mental illness; learning from each other's experiences including medication use and gaining help for mental health related issues (Naslund et al., 2014). The identified themes all imply positive experience for participants who identify as having a mental illness and use of YouTube.

A mixed methods study by Takahashi et al. (2009) found for people with depressive tendencies that social media provided many opportunities to gain peer support and meet user's

social needs. They gathered quantitative data on participants depressive state, demographics and assessed the social media sites used. They also completed qualitative content analysis of the descriptive content of participants responses to open-ended questions regarding the positives and negatives of social media. The qualitative analysis found that there was a potential creation of a downward depressive spiral which could have been initiated by feelings of psychological burden on others (Takahashi et al., 2009). This study shows that both quantitative and qualitative study design contributes to the knowledge base in a different way. In particular, the information gained from interviews about how the participants felt is valuable data and enhances understanding of some of the psychological aspects of engagement in social media.

#### **3.5.4 Psychiatric support**

A study by van Rensburg, Klingensmith, McLaughlin, Qayyum and van Schalkwyk (2015) interviewed 20 clients of an outpatient psychiatric service at Yale Psychiatric Hospital on their views about how they thought social media could act as a means of psychiatric support. The clients identified that social media could be beneficial as it would provide constant access and support of clinicians. They determined it would likely be less anxiety provoking and allow for more monitoring. However, participants in this study also identified some risks, including client anxiety if posts were not responded to immediately and interactions online could be not as productive as face-to-face communication (van Rensburg et al., 2015). This study explores some of the ethical challenges for clinicians regarding provision of psychiatric support on social media.

#### **3.5.5 Conclusion of social support**

The role of social support within the social media environment has created interest resulting in emerging research examining the relationship. Particular types of support gained from social media, namely, emotional and peer support can benefit the user's mental health significantly. Psychiatric support via social media presents an ethical situation for clinicians in which it may be helpful to clients but also may create further anxiety if posts are not immediately responded to (van Rensburg et al., 2015).

Social support gained from social media can be effective in protecting against depression (Rice et al., 2014), reducing high levels of anxiety (Indian & Grieve, 2014), increasing well-being (Best et al., 2014) and greater life satisfaction (Nabi et al., 2013). It is proposed that the

relationship between social media and social support is bidirectional, meaning that positively perceived social support is beneficial and undesirable communication can have the opposite effect (Rice et al., 2014).

An individual's perception of the support is important, as it is the perceived support on social media from others that is beneficial to the user (Manago et al., 2012). If actual support is misperceived or not considered valuable by the receiver, then positive impacts on health and well-being are not necessarily experienced. This highlights the individual differences between people and how each experience the world and its elements in a different way. Because what I may perceive as supportive interaction may be interpreted as unsupportive by others. Another point is, that written communication has greater scope to be misunderstood because without body language and verbal intonation to inform us, with the risk of misinterpreting others intentions is higher.

### **3.6 Social connectedness**

Social connectedness refers to how people join together and the relationships people have with others who often have similar goals (van Bel, Smolders, IJsselsteijn & de Kort, 2009). Social connectedness is what holds communities and societies together. Social ties and social connection with others have been associated with self-esteem, satisfaction with life and well-being (Bargh, McKenna, & Fitzsimons, 2002; Helliwell & Putman, 2004; Subrahmanyam & Šmahel, 2010). Engaging in social media may be responsible for the enhancement or maintenance of social connection and result in associated benefits. Social connectedness on Facebook has been described as feeling as if one is close to and belongs to their social network (Grieve, Indian, Witteveen, Tolan & Marrington, 2013). This section includes a brief exploration of theories related to the use of social media, then discusses the association between social connectedness and mental health, social capital and benefits of social media for older users.

#### **3.6.1 Theories that have attempted to explain social media and its social effects**

Attempts have been made in the effort to explain and understand some of the differing results from research by exploring theoretical concepts. The theories discussed below highlight the importance of individuality, emphasizing that outcomes of engaging in social media can differ between people. Individuals connecting on social media can have varying experiences of using the medium depending on their personality features and preferences.

A major theory surrounding social technology is the social enhancement hypothesis, in which it is proposed that extroverted individuals engage in social network sites in a similar way as they engage in offline social interactions and receive social benefits, i.e., the rich get richer hypothesis (Kraut et al., 2002; Valkenburg & Peter, 2007a). The other main view is the social compensation hypothesis, which purports that social networking sites help people who are introverted by giving an opportunity to engage in relationships and interaction that they may struggle within an offline environment, i.e., the poor get richer hypothesis (Schouten, Valkenburg & Peter, 2007; Zywica & Danowski, 2008). An alternative viewpoint is the Facebook Feedback hypothesis, where people with high levels of introversion who engage in Facebook will result in fewer feelings of belonging and people with extrovert personality features will not, i.e., poor get poorer hypothesis (Stronge et al., 2015). This hypothesis is in line with previous research showing a negative effect for socially isolated Facebook users (Kim, LaRose & Peng, 2009; Ryan & Xenos, 2011; Teppers, Luyckx, Klimstra, & Goossens, 2014).

### **3.6.2 Social connectedness and mental health**

The promise of connectivity and social ties may make social media an attractive occupation for many. A study by Gowen, Decshaine, Gruttadara and Markey (2012) found that people experiencing mental illness were more likely to be engaging in social media activities that encourage connectivity and developing friendships online. A study by Grieve et al. (2013) investigated if social connectedness could be acquired from Facebook and had 344 Facebook user's complete measures of Facebook social connectedness and offline social connectedness. This study found that Facebook can provide an avenue to establish and remain connected socially online. They found that Facebook connectedness is related to less anxiety and depression and more satisfaction with life (Grieve et al., 2013).

Engaging in Facebook or other social networking sites may contribute towards being more socially connected. Research has shown that extroverts using Facebook often have more

frequent engagement and communication with others (Seidman, 2013). Similarly, Facebook can support greater quality of friendship for shy or less socially adept people (Baker & Oswald, 2010). Other studies report that Facebook postings regarding romantic status have been related to greater connectedness (Saslow, Muise, Impett & Dubin, 2012; Steers, Øverup, Brunson & Acitelli, 2016).

Singleton et al. (2016) found in their grounded theory study of 12 adolescents that all of the participants identified benefit in connecting with others on social media and this was a driver in the continued use of the medium. The participants stated that engaging in social media made them feel normal, feel validated by others and helped them be better able to manage their psychological distress as they stayed connected and maintained relationships with important people (Singleton et al., 2016).

Disconnection and loneliness may be factors that drive social media use. A meta-analysis by Song et al. (2014) identified a correlational relationship between using Facebook and feeling lonely, suggesting people who are lonely use Facebook to connect with others, rather than Facebook making people feel lonely. Song et al. (2014) found support for the social compensatory hypothesis suggesting that people who are socially disadvantaged in life engage in Facebook as a compensatory measure. This result is similar to another meta-analysis on internet use and psychological well-being, which also supported the social compensation hypothesis (Huang, 2010).

Valkenburg and Peter (2007b) question the quality of relationships on the internet, suggesting that "relationships are weak tie relationships that do not have significant affection or connection, which could then effect well-being" (p. 1170). This view supports the idea that social connection via the internet is not as satisfying which could create greater feelings of loneliness. Similarly, a New Zealand study found that using Facebook was not beneficial for everybody, particularly shy people who were not highly oriented toward sociability (Stronge et al., 2015).

### **3.6.3 Social capital**

Similar to social connectedness, social capital is a form of connection that allows people to draw on resources from others in the groups they belong, in the form of gathering information, or developing and maintaining relationships and arranging social gatherings (Ellison, Steinfield

& Lampe, 2007). Past research has demonstrated that social capital brings positive changes in self-esteem, psychological well-being, and satisfaction with life. (Bargh & McKenna, 2004; Ellison et al., 2007; Helliwell & Putman, 2004; Kim, Subramanian, Gortmaker, & Kawachi, 2006; Valenzuela, Park & Kee, 2009). However, more recently the invention of social media sites has been identified as one of the most pertinent platforms to develop and sustain social capital (Steinfeld, DiMicco, Ellison & Lampe, 2009).

Uusiautti and Määttä (2014) conducted a study using a semi-structured questionnaire of 90 university students in Finland, performing a qualitative content analysis to examine what type of social capital is available via social media sites. They found that social capital was increased, particularly in the form of peer support groups and environments for learning, with bonding and the sense of belongingness enhanced (Uusiautti & Määttä, 2014). Studies have found that the more participants used Facebook, the greater their social capital (Ellison et al., 2007; Ji, Hwangbo, Yi, Rau, Fang & Ling, 2010; Steinfeld, Ellison & Lampe, 2008; Valenzuela et al., 2009). Ellison et al. (2007) also found in their survey of college students that there is a strong relationship between Facebook use and social capital, with bridging social capital (between groups) being the strongest. A longitudinal study of Facebook by Steinfeld et al. (2008) found that use of the social media platform increased bridging social ties, with those of low self-esteem reporting more significant gains.

Chong, Zhang, Mak and Pang (2015) conducted a study on using social media as social capital for people who identify as lesbian, gay or bisexual. Their study found that features of social media including, community surveillance, identity expression and emotional support, can enhance mental health by creating a sense of group belonging which can reduce stigma. This is a study of a group of people who are often stigmatised, which can hinder opportunities to build meaningful interpersonal relationships and gain support. Marginalised communities could be at elevated risk of engaging in behaviours (for example, substance use) that in turn influence both mental and physical health (Marshall et al., 2008; McCabe, Bostwick, Hughes, West & Boyd, 2010).

Further exploration of social connectedness and social media resulted in a literature review by Allen, Ryan, Gray, McInerney and Waters (2014) examining the positives and pitfalls for adolescents. This study argues that social media creates a paradox for social connectedness,

in that social media is an avenue to easily create social capital in the form of groups and communities; however, it also has also been identified that they can create isolation, ostracism and social disconnection (Allen et al., 2014).

### **3.6.4 Social connectedness of older people**

The majority of research on social networking sites is aimed at young adults and adolescents, partly because this group are big users and have grown up with social media. Research efforts are being made to understand the impact of this new way of communication on their lives and health. However, the Pew Internet and American Life Project found that 64% of 50-64-year old's who used the internet also engaged in social media and 56% of 65+ year old adults used social media (Duggan et al., 2015).

Research within the older age groups is emerging and providing insights into how social media use is impacting on older adults' health and well-being. A systematic review by Nef, Ganea, Müri and Mosimann (2013) on the use of social networking sites and older users found the main benefit reported was the intergenerational connection and communication with family. This review highlights the role that social media sites may have in maintaining the social connection between generations and could be beneficial in maintaining positive mental health (Nef et al., 2013).

In another study Jones, Ashurst, Atkey and Duffy (2015) investigated the value of older people (over 65) using the internet at Plymouth senior net and found that the internet is of significant value to people's social networks, resulting in feeling less lonely and experiencing greater mental well-being. This study was not specifically on social media but did include social use of the internet. However, there was no control group, therefore it is possible that some of the effects were due to the Hawthorne effect, where the social aspects of involvement in the research had an impact on participants experiences (Jones et al., 2015). Nevertheless, it is encouraging to find research supporting that social use of the internet is benefiting the older users who report feeling more connected and subsequently experiencing greater well-being.

### **3.6.5 Conclusion of social connectedness**

Social media has allowed for social connectedness and social capital to be enhanced in a way that has never been before. Social media use may create feelings of connection and



belonging, which can, in turn, enhance a sense of satisfaction with life, greater well-being and lessen symptoms of anxiety or depression (Grieve et al., 2013). Connecting on social media helps adolescents feel normal, validated and helps manage psychological distress and maintain a connection with others (Singleton et al., 2016). Older people describe the use of social media to be beneficial as it helps maintain relationships and feelings of belongingness between generations (Nef et al., 2015).

Social media has been used as a compensatory measure for people who find traditional social contact uncomfortable, as it can provide greater quality of friendship for this group (Valkenburg & Peter, 2007b). It is important to acknowledge that people are individuals and the impact of using social media to connect with others socially may present a paradox and have varying consequences depending on personality type, the influence of others and premorbid disorders (Sheldon, 2008; Singleton et al., 2016; Stronge et al., 2015). Identifying and harnessing the positive benefits from connection on social media is part of the role of an occupational therapist who is analysing the occupations that their clients engage in.

### **3.7 Social comparison**

Comparing self to others is part of a young person's development of their identity, as they assimilate into society increasing their understanding of who they are, along with being able to enhance skills to succeed (Erikson, 1968 as cited in Singleton et al., 2016). Social comparison is human nature and academics are making advancements to understand further how social comparison within the social media environment may influence mental health. Social comparison on social media has been associated with depression, anxiety, eating disorders, reduced well-being, greater distress, less self-esteem, negative self-perception and negative emotions (Fox & Moreland, 2015; Lup et al., 2015; Mackrell & Hall, 2016; Orth, Robins & Roberts, 2008; Seabrook et al., 2016; Smith, Hames & Joiner, 2013). This section is focusing on the relationship between social comparison on social media specifically with body dissatisfaction and eating disorders. There is also a discussion on the impact of social comparison with celebrities on social media.

### 3.7.1 Social comparison and eating disorders

An area of growing concern with social media use is the risk of development of body image issues and subsequent disordered eating. The perception of one's body image is important for general well-being and dissatisfaction with body image is related to eating disorder pathology (Polivy & Herman, 2004). Media and communication do play an essential role in the development and maintenance of body image (Lee, Lee, Choi, Kim & Han, 2014). Lee et al. (2014) in their cross-cultural study identified that body satisfaction has positive effects on psychological well-being, however, found that when social media is used to gather information about body image that there is a negative association with body satisfaction, in both participants in Korea and USA.

Easy exposure and accessibility to images on social media have been an area of discussion in the general media and professional literature. Ghaznavi and Taylor (2015) conducted a study on the accessibility of *thinspiration* images on Twitter and Pinterest over a 24-hour period. They identified that *thinspiration* content is easily found by entering terms into the search bar which provided all tagged content. These images depicted an excessively thin ideal of thin, which in turn can increase the probability of engagement in disordered eating to achieve the ideal (Ghaznavi & Taylor, 2015). Ghaznavi and Taylor's (2015) content analysis was not able to confirm an effect, but is consistent with and contributes to previous research on media influence of images of extremely thin individuals which increases the risk of developing eating disorders (Grabe, Ward & Hyde, 2008).

Smith et al. (2013) conducted a study on seeking negative social evaluation and comparison on Facebook and the relationship to the dissatisfaction of body image and bulimic symptoms. They found that maladaptive use of Facebook sharply increased the risk of developing symptoms of bulimia along with occurrences of over-eating four weeks on, with body dissatisfaction mediating this relationship (Smith et al., 2013). This study used a novel scale of Facebook use and created a questionnaire; therefore, the measures were not fully validated at this point.

Additionally, Holland and Tiggemann (2016) completed a systematic review of the literature with a variety of methodologies, on the impact of the use of social media on body image and eating disorders. They identified 20 studies which met their specific inclusion

criteria. This review concluded that there is a relationship between using social media, disordered eating and body image and specifically found that posting and observing photos and seeking criticism via updates were identified as the most problematic (Holland & Tiggemann, 2016).

### **3.7.2 Social comparison and celebrities**

Instagram is a social media photo sharing site, of which photos can be enhanced by various filters before posting. It is also commonplace for public Instagram profiles to be shared resulting in greater exposure to the content of others' lives, particularly lives of celebrities. A study using multivariate analysis found that those who follow strangers on Facebook are more inclined to believe that life is unfair and others have a better life, suggesting in their findings that social comparison may be a mediator in the relationship between social media use and well-being (Chou & Edge, 2012). de Vries and Kühne (2015) extended the study further, finding that if the subjects were happy anyway, this reduced the effect of negative social comparison overall. If followers conclude that the photos on Instagram depict real life, this will make followers vulnerable to a greater comparison of themselves in relation to others, which could result in distress (Chou & Edge, 2012).

Social comparison theory posits that comparing self negatively to others can be damaging to one's own self-perception (de Vries & Kühne, 2015). In a study by de Vries and Kühne (2015) they surveyed 231, 18-25-year-olds. They employed the Facebook Intensity scale to measure use (Ellison et al., 2007) and the Self Perception Profile for Adolescents (Valkenburg, Peter & Schouten, 2006), with Cronbach's alpha measures of 0.83 and 0.75 respectively. This study found using Facebook use was negatively associated with self-perception through negative self-comparison, especially true for participants that were unhappier. In another study Orth et al. (2008) found that negative self-perceptions gained from social comparison on Facebook predicted symptoms of depression. This effect is a 'poor get poorer' effect of social media use as poor self-perception can be detrimental to mental health (Orth et al., 2008). The social comparison hypothesis suggests that negative social comparison is exacerbated for those who were unhappier in the first place, suggesting that this subgroup are at greater risk of depressive symptoms (de Vries & Kühne, 2015). This could become more of a problem should the user continue to use Facebook or similar sites in the hope to feel better.

### **3.7.3 Conclusion of social comparison**

Social media affords ample opportunity for social comparison to occur. Comparing self to others on social media sites has been connected with disordered eating and body dissatisfaction (Holland & Tiggemann, 2016; Smith et al., 2013). Additionally, social media allows greater access to lives of strangers and celebrities for prolonged periods of time, which in turn increases the risk of adverse effects on health and well-being (Lup et al., 2015). This highlights the impact of comparing oneself to others on social media and the potential for users to be unknowingly effected by this often-unconscious act. A further risk lies with the maladaptive use of social media, for example, actively seeking negative comparison with others and the damaging effects this can have on the lives of individuals who purposefully seek negative criticism (Smith et al., 2013).

It appears that the occupation of social media exaggerates the normal human propensity of comparison of self with others. The increased access to others profiles and ability to view profiles of celebrities and strangers may be having an exacerbating effect resulting in more risk of development of body dissatisfaction and eating disorders. Historically comparisons in the street or schoolyard were relatively time sparse, but now with the constant access to material on social media that encourages social comparison, it is not surprising that mental health issues arising from this activity are of concern.

## **3.8 Addictive or Problematic social media use**

Addictive use of the internet has been described as "being overly concerned about online activities, driven by uncontrollable motivation to perform the behavior and devoting so much time and effort to it that it impairs other important life areas" (Andreassen & Pallesen, 2014, p. 4054). Addiction can be considered in general terms of internet use, but also in other aspects alone, for example, social media use (Andreassen, Torsheim, Brunborg & Pallesen, 2012; Elphinston & Noller, 2011; Wu, Scott & Yang, 2013). Evidence in the literature demonstrates that addiction to the internet including social media, often exists alongside other disorders or symptoms, for example, other addictions, depression, or loneliness (Armstrong, Phillips, &

Saling, 2000; Bozoglan, Demirer & Sahin, 2013). In a Thai study, Hanprathet, Manwong, Khumsri, Yingyeun & Phanasathit, (2015) examined Facebook addiction and its relationship with mental health and found that as many as 41.9% of adolescents in their sample had a Facebook addiction.

This section discusses addictive use of social media and its association with obsessive-compulsive behaviours. Additionally, there is a discussion on Facebook intrusion, problematic use of social media and Hikikomori. Gaming or video game use was not part of this search and literature that specifically discussed gaming has been omitted for the purposes of keeping this literature review compact. It is also important to acknowledge that other mental health symptoms are associated with the addictive or problematic use of social media, however as these have been discussed in other sections previously they will not be discussed in depth in this section.

### **3.8.1 Addictive use of social media**

Addiction to social media is considered a behavioural addiction, in that users are addicted to the behaviour (Griffiths, 2005). Kuss and Griffiths (2011) in their research describe how social media addiction is similar to substance use addictions. Addiction to social media sees users experience mood change (i.e., emotional state changes favourably initially), salience (i.e., preoccupation with social media), tolerance (i.e., use increases over time), withdrawal (i.e., uncomfortable emotional or physical symptoms when access is limited), conflict (i.e., problems because of social media usage) and relapse (i.e., revert back to excessive use after abstaining) (Kuss & Griffiths, 2011). There has been an ongoing academic debate about social media addiction disorder, however, it was not included in the latest *Diagnostic and Statistical Manual of Mental Disorders* (5<sup>th</sup> ed.; DSM – 5; American Psychiatric Association, 2013).

### **3.8.2 Facebook addiction and Facebook intrusion**

In the literature, the terms ‘Facebook addiction’ and ‘Facebook intrusion’ are being used interchangeably, with the latter having more emphasis on relationships with others and the intrusion that excessive Facebook use can have on one's life (Blachnio, Przepiórka & Pantic, 2015). Blachnio et al. (2015) conducted a cross-sectional study of 672 users of Facebook, using the Facebook Intrusion Questionnaire (Elphinston & Noller, 2011) and the Center for

Epidemiologic Studies Depression Scale (Radloff, 1977) to determine if depression and time spent on the internet daily were related to Facebook intrusion. Their findings suggested that daily time in minutes on the internet, being young and male were factors that increased the risk of Facebook intrusion, indicating that the profile of the user may be a predictor to addiction (Blachnio et al., 2015).

### **3.8.3 Problematic use**

The literature is using the undefined term of 'problematic' specifically when referring to Facebook use and when examining factors related to addiction (Satici & Uysal, 2015). Overuse of Facebook has been found to be problematic and is associated with reduced self-esteem and less subjective well-being (Denti et al., 2012). Problematic use of Facebook is also related to significant depression and anxiety (Koc & Gulyagci, 2013). Satici and Uysal (2015) investigated problematic Facebook use, using the Bergen Facebook addiction scale (Andreassen et al., 2012) which is a valid and reliable instrument to measure the problematic use of Facebook. They measured well-being using a variety of measures for subjective happiness, life satisfaction, subjective vitality and flourishing and found that the more problematic the use of Facebook the stronger the relationship with reduced well-being (Satici & Uysal, 2015).

### **3.8.4 Addictive use of social media: Hikikomori**

Teo et al. (2015) have studied a syndrome first identified in Japan as Hikikomori. Hikikomori is defined as "a 6 month or longer period of spending almost all time at home and avoiding social situations and social relationships with significant distress/impairment" (Teo et al., 2015, p. 64). People with this syndrome have often been reported to mostly only have social interaction online, with some research suggesting a link with heavy or addictive internet use (Lee, Lee, Choi & Choi, 2013). Associations between social media use and Hikikomori have not been found in this literature search.

### **3.8.5 Addictive use of social media: Obsessive-compulsive behaviours**

Studies are emerging on internet and social media addiction and obsessive and compulsive behaviours. This type of compulsive behaviour to relieve anxiety places the user at risk of dependency and has been observed in pathological users of the internet (Rosen et al., 2013). Billieux, Rochat, Rebetex and Van der Linden (2008) found in their study that using

social media online compulsively is a maladaptive attempt to regulate emotions. In another study Dong, Lu, Zhou and Zhao (2011) found that people who had significant internet addiction disorder, exhibited more obsessive-compulsive behaviours than the control group, purporting that an association between the two disorders may exist. In exploring a different perspective Steelman, Soror, Limayem, and Worrel's (2012) study found that excessive or dangerous use of mobile phones had a connection with obsessive-compulsive type behaviours. This study describes when a person is trying to manage their anxiety associated with obsessive-compulsive behaviour, and this could result in placing their own and others livelihood at risk (for example, using the phone while driving, or while on a plane). This research details the association between obsessive-compulsive behaviour and potential for social media addiction, however further research needs to establish directionality and causality. The question remains: Is it that users with obsessive-compulsive behaviour are more likely to be attracted to social media and at greater risk of addiction, or is it that social media enhances the potential for development of obsessive-compulsive behaviours for some people, or both?

LaRose, Connolly, Lee, Li and Hales (2014) examine the concept of connection overload in their study and look at the consequences of social media. This study looks at the demands of social media platforms. Connection overload happens when the demand occurs by receiving many messages and when the user tries to maintain contacts and update profiles this has an overwhelming adverse effect on their life (LaRose et al., 2014). They found that deficient self-reaction of connection demands, also sometimes known as compulsive use, led to undesirable outcomes that directly resulted in contributing to negative affect, additional stress and negative feelings (LaRose et al., 2014).

### **3.8.6 Conclusion of addictive or problematic social media use**

Problematic use or addiction of social media is a state that can significantly impact the life of the user given the associations with various symptoms and signs of mental health conditions and impact on quality of life. Depression and anxiety including obsessive-compulsive disorder, have an association with the addictive use of social media and research suggests this could be a bidirectional relationship (Seabrook et al., 2016). Just as it is thought that some symptoms of mental health disorders increase the likelihood of addiction to social

media, similarly addictive use of social media could exacerbate mental health issues creating a ‘chicken and egg’ phenomena.

Addiction can result in impaired interpersonal relationships, interruption to daily life, and reduced concentration due to intrusion, along with negative affect and social isolation (Elphinston & Noller, 2011; LaRose et al., 2014; Teo et al. 2015). There was no causal evidence located in the literature indicating that social media causes addiction or vice versa. Either way, it is essential to recognise this association, as social media is a popular and attractive occupation and the impact of addiction can be significant.

It is important that exploration around factors that motivate engagement in social media and what sustains the perpetual motivation to log on and check-in. It is possible that the ease of access to use social media and the availability of constant connection allows for addictive features of individual's personalities to be activated, which in turn exacerbates the risk of addiction. I am aware that parents often place restrictions on children engaging in social media online, however do not limit their own urges to use social media. This creates concern about the intrusion of the occupation of social media inhibiting the many other occupations that individuals engage in during their day. The findings of this literature review highlight the significance of addressing addiction and intrusion related to social media use, and reinforces the need for occupational balance.

### **3.9 Physiological effects**

Using social media can impact individuals physiologically and sometimes in ways which the user may not always be aware. This section explores social media use and the associations with the physiological stress response, sleep disruption and impact on mental health.

#### **3.9.1 Physiological stress response and mental health**

It has been found that when a person is under stress, a physiological reaction occurs releasing greater levels of cortisol into the body (Vaillancourt et al., 2011). When stressed, cortisol rises and if elevated can effect blood pressure and metabolism (Javier et al., 2013). The association between stress and social media use is gathering interest, a study by Mauri et al.



(2011) identified that there is a relationship between a physiological stress response and using Facebook. Social media has some features that could activate a stress response, in particular, receiving negative interactions, exposure to others stressful situations, becoming overwhelmed by content and pressure to keep updates regular (Chen & Lee, 2013; Rose & Tynes 2015; Valkenburg & Peter, 2009).

Javier et al. (2013) reported that victims of cyberbullying have a greater likelihood of somatic complaints that could be related to increased levels of stress. A study by Sourander et al. (2010) found that young people who are victims of bullying online are at greater risk of encountering difficulty sleeping, ongoing abdomen discomfort and recurring headaches. Prolonged stress and associated physiological effects on the body can subsequently effect our physical and mental health (Cooper & Marshall, 2013).

### **3.9.2 Social media and sleep**

Deprivation of sleep can negatively effect a person in many domains of their lives. Sleep deprivation can hinder physical, social, psychological and emotional functioning, which can lead to negative impacts on mood, memory, ability to manage stress and can result in a compromised immune response (Curcio, Ferrara & De Gennaro, 2006). Disrupted sleep is a symptom of many major mental disorders and requires careful attention to maintain mental health. Some initial research on the 'fear of missing out' (FOMO) phenomenon found it is related to more extensive Facebook use (Adams, Williford, Vaccaro, Kisler, Francis & Newman, 2016). Those participants who had greater FOMO were using Facebook immediately after waking in the morning and before going to sleep, which may impact on the time that it takes to go to sleep (Adams et al., 2016).

In this study, Adams et al. (2016) conducted semi-structured interviews with university students about their use of technology and the impact on sleep, identifying three themes; socialising trumps sleep, FOMO, and distraction from technology. Sleep quantity was not measured objectively; however, all participants reported that sleep was compromised with some reporting as little as four hours sleep at night (Adams et al., 2016). This study added to the body of evidence by providing detailed data about how students felt, however, the sample size was small and mostly female. Therefore, transferability of results is limited. It would also be

beneficial to ensure that a greater analysis of other factors that may impact on sleep are included in future study, for example, pre-existing mental health and academic stressors.

Woods and Scott (2016) studied the adolescent use of social media and found that young people with the greater use had more emotional investment in the media. These subjects reported poor quality sleep, reduced self-esteem and more significant levels of depression and anxiety. This study suggests that engaging in social media at night before bed could result in later bedtimes and shorter time asleep. Additionally, these results indicate that induced anxiety about not being tethered to social media could make it hard to switch off and maybe the connection between social media and disturbed sleeping (Woods and Scott, 2016). Additionally, a South American study on undergraduate students found an individual with Facebook dependence was 1.3 times more likely to have poor quality sleep than those with no dependency on Facebook (Wolniczak et al., 2013).

Levenson, Shensa, Sidani, Colditz and Primack (2016) studied a representative sample of 1788 adults (19-32 years old), examining social media use and sleep disturbance, using a brief patient-reported outcome measurement information system (PROMIS) sleep disturbance measure. They found more than half of the participants reported significant levels of disturbance with sleep (Levenson et al., 2016). Due to the study design, it was not able to be determined whether the use of social media lead to sleep problems, or the other way around, or both.

There are many possible reasons social media could disrupt sleep, for example, staying up late posting images, watching videos on YouTube or engaging in interactions on Facebook before going to bed could promote physiological, emotional or cognitive arousal (Levenson et al., 2016). It is also possible that when accessing social media, the visual stimulation from the screens could have an adverse effect on quality of sleep. Studies have found that ongoing exposure to night lighting of portable technology devices could result in misalignment of the circadian timing system as well as disrupt the melatonin secretion (Cajochen et al., 2011; Chang, Aeschbach, Duffy, & Czeisler, 2015; Wood, Rea, Plitnick & Figueiro, 2013). Circadian rhythms and sleep are necessary for good health (Buysse, 2014). The tremendous growth in the use of social media recently has increased concern about its effect on the quality and quantity of sleep (Zimmerman, 2008). People who have trouble getting off to sleep could use social media as a way of entertainment or way to pass the time when they are not able to sleep.

Therefore, it is possible that sleep disturbance could cause an increase in the use of social media to pass the time, which could result in further sleep disturbance creating a vicious cycle.

### **3.9.3 Conclusion of physiological effects**

Effects of being bullied on social media include trouble sleeping, stomach upsets, headaches and other somatic complaints that are considered to be related to stress or distress (Sourander et al., 2010). Studies on the effects of reduced sleep due to using social media and the possible reasons why, are emerging in the literature (Levenson et al., 2016; Wolniczak et al., 2013; Zimmerman 2008). The impact that social media might have on the body physiologically could effect wellbeing and subsequently mental health.

Engaging in social media can have an impact on our bodies in ways that users may not always be aware. Social media use can upset daily rhythms due to lack of sleep, which could again result in a vicious cycle, as to tire ourselves we use social media as an entertainment late at night further impeding sleep. Likewise, the impact of stress on the body from social media use can have a significant impact on how the body functions. Like any occupation, stress and physiological demands on the body need to be managed by the user. However, I suspect that awareness of the route of the stress is not always apparent to the user, therefore careful management may be overlooked.

## CHAPTER 4

### CONCLUSION

This literature review has revealed that there is a considerable amount of evidence to suggest that there is a relationship between social media use and mental health which is consistent with previous research (Seabrook et al. 2016). The nature of those relationships and implications for occupational therapists are discussed under each theme below. In this review, the use of the thematic framework has created a platform for a broad and vast discussion of the available literature which has resulted in wider acknowledgment of the possible influence social media use could have on mental health.

Occupational therapists strive to do the best that they can for their clients, and in doing so, they aim to remain current with the literature and the guidance that it can provide in assisting those who receive services. The purpose of this review was solely for that reason, to understand the risks and the opportunities that social media affords its users to advance knowledge of occupational therapists and to increase discussion about social media and its connections with mental health. This review has provided a wealth of information on the topic and the narrative study design selected has allowed for the breadth of evidence to be gathered together.

#### **4.1 Frequency of social media use**

The evidence on the frequent use of social media and mental health does not show a clear association, which is consistent with previous research (Seabrook et al., 2016). However, the literature did identify several possible influences on mental health which are all negative. Including; greater dispositional anxiety (Vanucci et al. 2017), lack of meaningful activity (Sagioglou & Greitmeyer, 2014) and feeling envious, lonely or ruminative (Krasnova et al., 2013; Shaw et al., 2015; Tandoc, et al., 2015).

Any occupation that could influence the mental health or well-being of clients negatively is of interest to occupational therapists, however of significant interest is the finding that social media use can be experienced as a time-wasting meaningless activity (Sagioglou & Greitmeyer, 2014). If this is so, then why is it one of the most popular occupations that individuals are engaging in? Additionally, if clients with anxiety are using social media as a coping mechanism, which may be perpetuating their anxiety further, occupational therapists have a role in educating clients on the potential harm of engaging in social media in this way. Occupational therapists work alongside clients on improving quality of life, which includes participating in meaningful, purposeful activity and minimises meaningless and maladaptive activities.

A concerted clinician effort to discuss with clients the activities that they are engaging in on social media, by inquiring how often and how they feel about this afterward would allow insight into how this occupation is part of the client's life. Evaluating if social media use is considered a leisure, work, rest or sleep activity for the client would allow greater understanding of how social media use infiltrates their life. Conversations about social media use in clients' lives could encourage self-reflection and enhance awareness into how this medium may be positively or negatively influencing mental health.

#### **4.2 Size and structure of social network on social media**

The research on social media friend network size has resulted in mixed findings and resulted in further investigation into social aspects of interactions rather than the number of friends a person has on social media (Park et al., 2015). Clinicians discussing with clients that the number of friends on Facebook is less important than the quality of those relationships and interactions, could be reassuring and refocus attention on building relationships.

Research examining the structure of social media sites has found that positive effects on self-esteem and well-being can come from positive feedback from others on the sites (Nambisan et al., 2015). The site structure also has protective features for vulnerable users, for example, suicide prevention measures. (Fu et al., 2013). Risks inherent in the structure of social media sites include exposure to undesirable content, the creation of virtual communities that

encourage self-harm and suicide (Luxton et al., 2012). Structure of the social media site may allow ease of perpetrators to victimise vulnerable individuals resulting in severe effects on mental health.

By informing occupational therapists of the risks and benefits associated with the structural features of social media sites, this means that in discussions with clients around the use of social media clinicians can educate on potential risk. This creates an opportunity for conversations about privacy settings and enhancing awareness that not all users are well intended. In mental health, this information could be part of the client's risk management plan. For example, a client becoming more active in particular virtual communities online may be identified as a risk factor or early warning sign that they monitor and make action plans with their therapist about what to do in this situation. However, this example does bring up the ethical side of supporting clients with social media, because as therapists we do not and should not have access to others private information online. This is a whole other thesis topic which occupational therapists also need to be cognisant and aware. However, what is being suggested here, is an open conversation about the use of social media between client and therapist as a means to mitigate risk factors associated with the particular use of social media. The ability to do this will depend on the therapeutic relationship with the client which will need to have openness and trust inherent.

### **4.3 Social media for self-disclosure and expression**

Research on self-disclosure and expression on social media sites has found that individual preferences, pre-existing disorders, and personality all influence how social media is used (Mehdizadeh, 2010; Moore & McElroy, 2012; Ryan & Xenos, 2011). Pressure to uphold status and provide updates to followers on social media is positively related to depression and anxiety (Rosen et al., 2012); however, literature did not show any evidence of social media causing mental health conditions. It is likely that people with certain personality traits or disorders (for example, narcissism) are drawn to social media which exacerbates traits by the encouragement to disclose and express yourself often. Engagement in social media could

enhance narcissism traits in users and it is also possible that pressure to ‘impression manage’ is effecting other aspects of daily life.

Additionally, finding that alcohol use is related to disclosure on social media is interesting, especially as the direction of the relationship is not known, i.e., does alcohol use influence social media use, or does social media use influence alcohol intake? This section has highlighted many variables that are related to disclosure of information on social media. Therefore, spending time analysing this particular aspect of the occupation with clients to get an awareness of what is it that is appealing and what the motivations for disclosure are, would provide valuable information to the therapist about what drives use.

It is known that people usually disclose positive information and often portray only the desirable aspects of their life on social media, which is not actually an accurate portrayal of their lives (Qui et al., 2015). By occupational therapists informing clients and increasing awareness that people do present more positive emotional experiences and less negative, this would hopefully reduce the effect of negative social comparison with others.

Informed occupational therapists are in a position to have discussions around what activities their clients are engaging in on social media sites. Finding out how clients feel after disclosing information, what they gain from communicating in this way and what do they believe are the pros and cons of using social media for self-disclosure. Examples of questions include: Is it helpful to disclose on social media when not feeling well, intoxicated or feeling at risk? How does disclosing on social media effect offline relationships with friends? Is it beneficial or harmful to the relationship? These are all examples of questions that would help enhance the therapists understanding of how their clients are using social media and help assess what their knowledge of potential benefits and risks of disclosing information on sites. This knowledge could help both client and therapist to negotiate social media and strategise how to get the most out of the medium.

#### **4.4 Quality of interactions**

The quality of the interactions on social media has been found to be a defining factor in influencing the mental health and well-being of the user. Positive interactions on social media that are reciprocal and interpersonal provide similar positive benefits to face-to-face interactions (Baek et al., 2013). Negative interactions on social media are associated with depressive symptoms (Feinstein et al., 2012; Takahashi et al., 2009). Risks to mental health come from negative interaction from being cyberbullied (Best et al., 2014; Goebert et al., 2011).

Occupational therapist's facilitating conversations about what is considered appropriate and suitable comment on social media could encourage disclosure of being cyberbullied. Discussing with the client if they have been cyberbullied and strategising what they would do if this did occur. Similarly, discussing involvement in online communities and the risk that these pose to users could assist clients in managing their social media interactions. This search did not yield any cyberbullying assessment tools as it was not the focus of this project; however, further investigations into this could help guide occupational therapists in this area.

Occupational therapists should not discount the positive benefits that could be gained through social media interactions that have value to the recipients. Exploration with clients about the benefits of positive social interactions and how it may help with recovery and maintenance of mental health could be of significant worth. The benefits of social media are abundant and plentiful and never before has there been something so available. This medium is accessible, mostly free or low cost and with basic learning can be used by most. It is a rich resource that occupational therapists should be embracing.

#### **4.5 Social support**

The relationship between social support and social media is considered bidirectional, in that positively perceived social support is beneficial, with negative communications having the opposite effect (Rice et al., 2014). Social support gained via social media has been identified as protecting against depression (Rice et al., 2014), reducing high levels of anxiety (Indian & Grieve, 2014) increasing well-being (Best et al., 2014) and greater life satisfaction (Nabi et al., 2013). Also, it is important to acknowledge that perceived support on social media is beneficial



to the user and if the help is not considered of value then positive effects will not be experienced (Manago et al., 2012).

Most occupational therapists will know that gaining social support has often been a difficult task for many clients who are experiencing mental health problems; however, social media has provided another avenue. The benefits of social support from social media should not be overlooked as this may be a medium that could enhance well-being and assist in recovery from mental illness. Occupational therapists are well known to explore the concept of social support with clients and their role places them in a privileged position to include social media in this discussion.

#### **4.6 Social connectedness**

Social media use may create feelings of connection and belonging, which can, in turn, enhance feelings of satisfaction with life, greater well-being and fewer symptoms of anxiety or depression (Grieve et al., 2012). Additionally, enhanced social capital via social media can bring positive changes in self-esteem, psychological well-being, and satisfaction with life (Bargh & McKenna, 2004; Ellison et al., 2007; Helliwell & Putman, 2004; Kim et al., 2006; Valenzuela et al., 2009).

One emerging area of evidence is the use of social media by older adults and finding that social media helps maintain connections and feelings of belongingness between generations (Nef et al., 2016). Occupational therapists may consider teaching skills or suggest that older people learn skills to become involved in using the internet to connect with others socially, given the reported positive influences on mental health and well-being (Nef et al., 2016). There seems to be a digital divide, and crossing this divide might be of benefit to older users. By engaging in the virtual world older users could learn more about people they know, than they would in the 'real' world, even their closest people. Occupational therapists exploring ways in which clients can connect with others is a beneficial exercise in harnessing the power of social media and how it can enhance social capital and social connectedness. One example would be to assist or teach a client in setting up a small private messenger group on Facebook with some friends

or family members. This would allow for connection with a selected group and limits privacy concerns. Engagement in social media has many advantages that can help people in maintaining a balanced life with positive social connections.

#### **4.7 Social comparison**

Social comparison on social media has been associated with depression, anxiety, eating disorders, reduced well-being, greater distress, less self-esteem, negative self-perception and negative emotions (Fox & Moreland, 2015; Lup et al., 2015; Mackrell & Hall, 2016; Orth et al., 2008; Seabrook et al., 2016; Smith et al., 2013). The literature on social media and social comparison illuminates the risks associated with comparing self to others on this medium, especially in relation to body dissatisfaction and development of eating disorders (Holland & Tiggemann, 2016; Smith et al. 2013). In particular, social comparison is sometimes not obvious to the user and they may be unknowingly engaging in this often-unconscious act, and therefore not aware of the consequences on their mental health and well-being. Together this research suggests that it is essential that occupational therapists become aware of why and how their clients are engaging in social media, particularly to reduce the maladaptive use of social media that may be impacting negatively. Social media use appears to have the capacity to exaggerate the effects of social comparison in the online environment.

#### **4.8 Addictive or problematic social media use**

The literature on addiction or problematic use of social media consistently presents a negative influence to mental health and well-being. It is suggested that this relationship is bidirectional, as it is thought the addictive use of social media could exacerbate symptoms of mental disorder; likewise, symptoms of mental disorders could increase the likelihood of addiction (Seabrook et al. 2016). Either way, it is important to recognise this association as individuals are spending more time on social media and the costs to health are high (Duggan et al., 2015).

Occupational therapists are commonly discussing time use and daily structure with clients. Being aware of the risk of addiction and addressing excessive time spent on social media would be part of the therapist role. Developing assessment tools was not part of the scope of this research project; however, one guide presented in the literature by Krishna et al. (2013) recommends the Social Media Network Clinical Questionnaire to guide clinicians to identify the problematic use of social media.

1. Do you participate in social media network?
2. How much time a day/week do you spend on social media network?
3. Do you sometimes have trouble when you are not checking your social media network or updating your profile?
4. How much do you think about your social media network account when you are doing other things?
5. How many online “friends” do you have?
6. Have you ever accepted a “friend” request from someone you have never met in person?

This quick questionnaire was adapted from Chow, Leung, Ng & Yu (2009) who initially developed a screen for identifying maladaptive internet use. This guide could allow occupational therapists to gather the necessary information to determine if the problematic use of social media is an issue. Further research on assessment guides could be an eventual outcome of this literature review. In assessing if social media addiction is an issue that may be overtaking or intruding on other occupations, this also allows for analysis of occupational balance and can lead to a re-evaluation of time use for the client.

#### **4.9 Physiological effects**

Problems sleeping, upset stomachs, headaches and somatic complaints are all symptoms of stress or distress which have been related to being bullied on social media (Sourander et al., 2010). Studies on the effects of reduced sleep due to using social media discuss the many possible reasons social media could contribute to the deprivation of sleep (Levenson et al., 2016; Wolniczak et al., 2013; Zimmerman 2008;).

Social media use and its effect on sleep is important for occupational therapists to assess due to the effect sleep quality can have on functioning. Exploring if the reason the person is not getting sleep is because of their FOMO, or their want to socialise, or their significant emotional investment in the site and desire to stay connected at all times, are valuable insights for the therapist assessment (Adams et al., 2016). Other possible reasons could be the noise of the notifications on the phone or even the effect of the visual stimulation from the screen use late at night impeding on sleep (Cajochen et al., 2011). Discussion on the impact and awareness of sleep deprivation, together with strategising ways to address this is a crucial part of an occupational therapists role as they work with people to maintain good health and quality of life.

#### **4.10 Occupational therapy and social media**

Occupational therapists work with people on enhancing the quality of life, on gaining and maintaining independence, on skill development and functionality and supporting wellness and recovery. This work requires detailed assessment working alongside clients exploring their goals, aspirations, strengths and hope for the future. Occupational therapists are interested in routines, structure, time use, volitional and meaningful aspects of occupation to name a few. With social media use now considered a pervasive occupation which could be having a positive and negative impact on mental health, it appears imperative that discussions begin. In fact, it seems that occupational therapists are well skilled to be innovative in exploring social media use with clients given their training in occupation.

#### **4.11 Limitations and strengths of the study**

This narrative literature review is a philosophical overview of the field and given the current research question, it was important to gather ideas rather than to review the literature systematically. Hence, this study cannot hope to reach saturation point due to the broadness of the search, but does give a reasonable snapshot in time. Realistically, it is also important to

identify that this 60-point research project has only been able to scratch the surface on this topic. It has been a massive undertaking to pull the literature from various disciplines together and then to apply this to occupational therapy. However, in doing so, this paper has identified that there is such a need for occupational therapists to be actively involved in research on the occupation of social media.

This narrative review has clear inclusion and exclusion criteria, however, the bias of article selection from the author exists and needs to be acknowledged. Further papers were selected from the reference lists of pertinent articles to enhance the research base and for additional information to be gathered on particular topics. This strategy was to build the narrative in the discussion chapter.

The information obtained from this data search was phenomenal and the amount of material available on this topic was sometimes difficult to negotiate. Due to the vast amount of literature located, particular articles were selected that appeared in the final write up of this paper whilst others were not included. Decisions about this were made in order to create a coherent narrative literature review. Data specifically on video gaming or computer gaming was omitted from the review, although this limits generalisability the purpose was to reduce the size of the review into a comprehensible narrative. Similarly, the decision to use peer-reviewed data only has not warranted the inclusion of many examples and ideas that exist in the general media; however, this decision was made to ensure that the analysis was from research from an informed, evidence-based source.

Due to the number of items accessed and used in this data analysis, critical analysis of each article is not included in this project. However, greater attention was placed on research considered the most methodologically robust. The majority of articles were from quantitative designs meaning that this literature review had a greater focus on the quantitative data available. Efforts have been made to also explore qualitative and mixed method designs in this project to ensure a holistic view of the data was obtained.

The majority of research available for this literature review was from Facebook. This is likely a result of the prolific use and popularity of Facebook, and it is one of the earlier social media sites developed. Therefore, the generalisation of this research is limited as other social media sites do have different structures and features. Similarly and unsurprisingly, most

research on social media use is on adolescents and young people, likely because they are the most voracious users. Research from other age groups is limited and in need of further investigation on how social media use can influence mental health. This would allow for more representative data over the lifespan. However, it is important to acknowledge that although social media is now a part of life for many, the research on its impact is in its infancy. The ever-changing environment of social media will make it difficult for researchers to remain current. There is so much more to know about this medium and in particular the finer details and greater explanation of why social media use may influence mental health.

This literature review has resulted in many questions arising throughout the process and in the final conclusions above. This greater questioning of the topic has come from being well informed about social media use and mental health. Being able to provide information and to better inform occupational therapists was the purpose of this literature review; therefore, questions and discussions about the impact of social media use on mental health are welcomed.

#### **4.12 General limitations of the studies**

Many studies did not define what activity is occurring on social media. Social media encompasses an extensive range of activities that vary between different social media sites. Examples include; instant messaging, browsing one's newsfeed, looking at others profiles and commenting on others updates. The omission of this detail has limited knowledge in identifying exactly what it is with social media use that influences mental health and well-being. This may be one of the reasons for conflicting results.

Another observation from conducting this literature review is the limited detail on the prior mental state or psychological well-being of participants. This problem extends for numerous studies on social media use, mental health and well-being (Jelenchick et al., 2013; Kross et al., 2013; Pantic et al., 2012). A similar observation is that the research is not always clear about what is understood by the term depression, anxiety, etc. Some studies appear to be using these terms informally rather than the formal definition of the disorders. Hence, the studies are making conclusions that social media is associated with depression, when in fact

they are measuring low mood or unhappiness (Sagioglou & Greitmeyer, 2014). Some studies have used valid measurement tools like the Beck Depression Inventory (Beck, Steer & Carbin, 1988) which are beneficial in determining if depression is related to social media, without establishing causation (Pantic et al., 2012). However, one noticeable problem with the use of such measures is the lack of ability to detect milder adverse effects like sadness or subjective discontent. This has highlighted the importance of more detailed, qualitative exploration which is methodologically necessary to pick up finer-grained analysis. There is a significant amount of quantitative, self-report survey and cross-sectional designs which offer larger samples and identify patterns; however, the qualitative data is more detailed and offers greater levels of insight.

This review includes many studies that adopt social psychological research designs that use a survey technique to estimate variables. The survey technique is subject to reporting bias with the risk of over or under reporting. Examples include; under-estimation on how much time you spend on Twitter each day or an over-estimation of how many friends you have on Facebook. The inclusion of objective measures could allow for more accurate measurement of variables.

#### **4.13 Future direction**

The findings of this literature review have advanced knowledge on the mechanisms that connect social media use to negative and positive mental health outcomes. The knowledge is at a point where further detail would be of benefit in an effort to understand why some people's mental health may be influenced positively or negatively from using social media. For example, the differences between the active and passive use of social media are starting to be explored in the literature as having varying influences, and the next step moving forward would be to examine why does each particular feature have the impact. This is a significant finding in this study and one that applies specifically to occupational therapists. Examination and analysis of actual activity on social media and its influence on users is what is needed. There needs to be a greater understanding of different types of social media and the different functions within the particular sites. As has been identified in this study, the term social media is broad and can mean

engaging in various activities. A focus on the specific processes that take place within the occupation of social media will help unravel the complexities associated with social media use and provide further information on how some activities may be detrimental and others advantageous.

By the use of study designs that consider theoretical perspectives and examine the cognitive processes utilised when using social media, research could address questions like "Why could Facebook be contributing to anxiety symptoms?" Future effort to address the unknown and identify what the factors are that could increase particular mental health symptoms would be hugely beneficial, so that more targeted intervention and education could be directed.

Specifically, from an occupational therapist perspective research around clinical practices that can guide assessment and intervention processes from an occupational viewpoint would assist the profession in becoming influential in the realm of social media. This narrative literature review was initiated as a starting point to encourage discussion and share information from other professions that may be useful in advancing occupational therapy clinical practice at some point in the future. Social media is possibly one of the most fertile and widespread occupations of all time, and as occupational therapists it is imperative and urgent that we equip ourselves to adjust to this change of communication and socialisation processes in our communities. Occupational therapists need to advance their knowledge to a level where they are in a position to develop procedures for assessment and intervention so that clients can be assisted in how to harness the power and mitigate against the risk of social media.



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**Appendix A:** The Narrative Overview Rating Scale (Green, Johnson & Adams, 2006).

### **Narrative Overview Rating Scale**

Circle the number that you feel is appropriate for the paper that you are reading:

**1 = Absent 2 = Present but not complete 3 = Present and complete**

#### **Initial Impression**

1 2 3 Does the review appear to be relevant to an issue of interest?

#### **Abstract**

1 2 3 Is the specific purpose of the review stated?

1 2 3 Is context for the overview provided?

1 2 3 Is the type of research design stated?

1 2 3 Are the search methods clearly summarized?

1 2 3 Are the important findings clearly discussed?

1 2 3 Are the major conclusions and recommendations clearly outlined?

#### **Introduction**

1 2 3 Is the specific purpose of the review clearly stated based upon a brief review of the literature?

1 2 3 Is the need/importance and context of this study established?

1 2 3 Are novel terms defined?

#### **Methods**

1 2 3 Were the electronic databases used to conduct the literature searches identified (MEDLINE, CINAHL, etc.)?

1 2 3 Were the search years stated?

1 2 3 Were the search terms stated?

1 2 3 Were standard terms used as search terms, including Medical Subject Headings (17)?

1 2 3 Were the guidelines for including and excluding articles in the literature review clearly identified?

### **Discussion**

1 2 3 Were the results summarized in a comprehensible manner?

1 2 3 Was the critical appraisal of each study the same and reproducible?

1 2 3 Was the quality of the included articles assessed objectively?

1 2 3 Was the variation in the findings of the studies critically analyzed?

1 2 3 Were the meaning of the results addressed?

1 2 3 Do the authors tie in the results of the study with previous research in a meaningful manner?

1 2 3 Were the weak points and untoward events that occurred during the course of the study addressed by the authors?

### **Conclusions**

1 2 3 Was a clear summary of pertinent findings provided?

1 2 3 Were the authors' conclusions supported by the evidence provided?

1 2 3 Were specific directives for new research initiatives proposed?

1 2 3 Specific implications to the practice environment are addressed?

### **References**

1 2 3 Are references relevant, current and appropriate in number?

1 2 3 Are all papers reviewed cited in the references?

### **Overall Impressions**

1 2 3 Do the merits of this review of the literature outweigh the flaws?

1 2 3 Were the authors unbiased in their approach to the review?

1 2 3 Will the results of the paper help me in my philosophical or evidence based approach to patient care?

**Comments & Notes:**

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**Appendix B: Search terms from the databases accessed**

<p>PubMed</p> <p>Search 1) 601 articles found, 79 relevant</p> <p>Search 2) 98 articles found, 39 relevant</p> <p>Both search 1) and 2) resulted in 108 articles found, 67 after initial read, 39 after articles read, duplicates removed and inclusion/exclusion criteria checked.</p>	<p>Search 1:</p> <p>(((((("mental health"[Title/Abstract] OR "mental wellbeing"[Title/Abstract] OR psychology[Title/Abstract] OR psychiatry[Title/Abstract] OR "emotional wellbeing"[Title/Abstract]) OR (mental health[MeSH Terms]))) AND (("social media"[Title/Abstract] OR "social network*" [Title/Abstract]) OR (social media[MeSH Terms]))) AND Journal Article[ptyp] AND ("2000/01/01"[PDat] : "2018/12/31"[PDat]) AND English[lang]) AND (Journal Article[ptyp] AND ("2000/01/01"[PDat] : "2018/12/31"[PDat]) AND English[lang])</p> <p>Search 2:</p> <p>((("mental health"[Title] OR "mental wellbeing"[Title] OR psychology[Title] OR psychiatry[Title] OR "emotional wellbeing"[Title]) OR (mental health[MeSH Terms])) AND (("social media"[Title] OR "social network*" [Title]) OR (social media[MeSH Terms]))</p>
<p>Medline</p>	<p>1. exp *social media/ or cyberbullying/</p>

<p>138 articles found, 46 relevant, 12 after abstracts read, duplicates removed and inclusion/exclusion criteria checked.</p>	<p>2. ("social media" or ("social network*" adj3 (media or online))).tw.</p> <p>3. ("social media" or ("social network*" adj3 (media or online))).ti.</p> <p>4. *mental health/</p> <p>5. ("mental health" or "mental wellbeing" or psychology or psychiatry or "emotional wellbeing").tw.</p> <p>6. 1 or 2</p> <p>7. 1 or 3</p> <p>8. 4 or 5</p> <p>9. 6 and 8</p> <p>10. 7 and 8</p> <p>11. limit 9 to (human and english language)</p> <p>12. limit 10 to (human and english language)</p> <p>13. limit 11 to (yr="2000 -Current" and journal article)</p> <p>14. limit 12 to (yr="2000 -Current" and journal article)</p>
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	<p>15. *Social Media/  16. Social Media/  17. 2 or 16  18. 8 and 17  19. limit 18 to (english language and humans)  20. limit 19 to yr="2000 -Current"</p>
<p>Psych Info  319 articles found, 99 relevant, 39 after abstracts read, duplicates removed and inclusion/exclusion criteria checked.</p>	<p>1. exp *social media/ or cyberbullying/  2. ("social media" or ("social network*" adj3 (media or online))).tw.  3. ("social media" or ("social network*" adj3 (media or online))).ti.  4. *mental health/  5. ("mental health" or "mental wellbeing" or psychology or psychiatry or "emotional wellbeing").tw.  6. 1 or 2  7. 1 or 3  8. 4 or 5  9. 6 and 8  10. 7 and 8  11. limit 9 to (human and english language)  12. limit 10 to (human and english language)</p>



	<p>13. limit 11 to ("0110 peer-reviewed journal" and yr="2000 -Current")</p> <p>14. limit 12 to ("0110 peer-reviewed journal" and yr="2000 -Current")</p>
<p>CINAHL</p> <p>75 articles found, 40 relevant, 33 after duplicates removed and inclusion/exclusion criteria checked.</p>	<p>1. (MM "Social Media") OR (MM "Social Networking")</p> <p>2. TI("social media" OR ("social network*" N3 (media OR online)) ) OR AB ("social media" OR (social network*" N3 (media or online)) )</p> <p>3. 1 OR 2</p> <p>4. (MM "Mental Health")</p> <p>5. TI "mental health" OR wellbeing OR "well being" OR well-being OR psychology OR psychiatry) OR AB ("mental health" OR wellbeing OR "well being" OR well-being OR psychology OR psychiatry)</p> <p>6. TI "mental health" OR wellbeing OR "well being" OR well-being OR psychology OR psychiatry</p> <p>7. 4 OR 5</p> <p>8. 3 AND 7</p> <p>9. 4 OR 5</p> <p>10. 3 AND 9</p>
<p>ProQuest Central</p> <p>135 articles found, 39 relevant, 27 after duplicates removed and inclusion/exclusion criteria checked.</p>	<p>ti("social media" OR "social network*") AND ti("mental health" OR wellbeing OR "well being" OR well-being OR psychology OR psychiatry) AND (at. Exact ("Article"</p>

	OR "Literature Review") AND la.exact ("ENG") AND yr (2000-2019).
Scopus 244 articles found, 96 relevant, 39 after duplicates removed and inclusion/exclusion criteria checked.	((TITLE ("social media" OR ("social network*" W/3(media OR online))) OR KEY ("social media" OR ("social network*" W/3(media or online)))) AND (TITLE-ABS-KEY("mental health" OR (emotional OR mental OR psychological W/3 (wellbeing OR "well being" or "well-being")))) AND (LIMIT-TO(DOCTYPE, "ar") OR LIMIT-TO(DOCTYPE, "re")) AND (LIMIT-TO(LANGUAGE, "English"))).
Taylor and Francis 278 articles 40 relevant, 24 after duplicates removed and inclusion/exclusion criteria checked.	(All:"mental health") AND ("social media")

## **Appendix C: Definition of terms related to social media**

### **Definitions of types of social media**

**Online forums, Internet forums, discussion forums, message boards and discussion boards and chat rooms**– are all essentially the same thing. They are a discussion site online where people can hold discussions and communicate by posting messages. Each new discussion topic is called a thread (“internet forums,” n.d.).

### **Definition of terms used associated with social media use**

**Trolls** – Internet slang for someone who purposefully upsets others provoking emotional responses (“internet trolls,” n.d.).

**Thinspiration** - is a media content that purposefully promotes loss of weight, usually in a way that encourages dangerous behaviours characteristic of eating disorders (Lewis & Arbuthnott, 2012).

**Microblog** – to post very short entries, as a brief update or a photo on a blog or social media website (“microblog” n.d.).

**Catfishing** - A catfish is someone who pretends to be someone they're not using Facebook or other social media to create false identities, particularly to pursue deceptive online romances (Urban dictionary, 2010).

**Hashtags** - (# - preceded by words and no spaces) are used to mark topics and link similar material and this can occur across social media sites which make them discoverable for people with shared interests (Fontein, 2015).

**FOMO** – Fear of missing out, is intense apprehension that a more interesting event is happening elsewhere (Przybylski et al., 2013).

**NOMO** – no mobile phone phobia, is a term used to describe a person’s distress when they are not able to contact other via the mobile phone (D’Agata, 2008).

**Suicide contagion** – That exposure to suicide or information about suicide can result in ‘copycat’ suicides (Bohanna, 2013).

**Facebook intrusion** - has been defined as “excess involvement in Facebook and disrupting day-to-day activities and interpersonal relationships” (Elphinston & Noller, 2011 p. 631)

**Facebook depression** – “the affective result of spending too much time on the social networking site” (Blease, 2015, p. 1).