Support seeking in early and middle adolescent girls:

An exploratory study of online support seeking and

mental health

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Abstract

Many adolescents interact with their friends online, and report gaining social support through online communication. While research has focused on adolescents' use of formal online support, less is known about adolescent girls' use of informal online support. This study aimed to investigate the use of informal online support seeking, and assess the relationship between online support seeking and adolescent mental health. The study assessed adolescents' motivation for and beliefs about seeking support online, with the aim of identifying developmental affordances or limitations of this form of support seeking.

Early and middle adolescent girls ($N = 186$) completed a self-report survey measuring their intended use of support seeking from parents, friends, peers, and online, as well as isolation in response to academic and social stressor vignettes. Mental health was assessed with a measure of depression, anxiety, and stress. Semi-structured interviews ($n = 31$) addressed motivation and beliefs about online support seeking.

In-person support seeking from parents and friends was the most preferred form of support. Online support was more likely to be used by middle adolescents and more likely for academic stressors rather than social stressors. Girls who sought less support from parents and more support from friends reported seeking more support online. Seeking support online for both academic and social stressors was significantly related to higher levels of depression and anxiety. The use of isolation moderated the relationship between online support seeking and anxiety in response to academic stressors.

Interviews revealed that most girls used online support seeking to access emotional and academic support from their friends. Girls identified potential developmental limitations to the use of online support seeking, such as using online support seeking to avoid emotion. This study provides an important contribution to our understanding of the use of online support seeking by adolescent girls.

Statement of Candidate

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Ethics approval for this project was granted by the Macquarie University Human Research Ethics Committee, approval number: 5201400949

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Dedication

In loving memory of my nanna, Pat, one of my wonderful supporters who so dearly wanted to see me finish this thesis.

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Author Contributions

I took primary responsibility for the design of this thesis project, including the conceptual focus, theoretical orientation, draft methodology, and specific research questions. My supervisors, Dr. Anne McMaugh (principal supervisor) and Dr. Penny Van Bergen (associate supervisor), helped me to refine my initial ideas, strengthen my methodology, and map the sequence of papers. I completed all participant recruitment and data collection, together with the analyses for each paper. As outlined below, I sought statistical assistance and advice from Dr. McMaugh and Dr. Van Bergen as required. I am the first and corresponding author for all four publications included in this thesis. Specific contributions to the papers are as follows:

- Paper I: I independently conducted the literature search and systematic review. I wrote the drafts of the manuscript. Dr. McMaugh and Dr. Van Bergen reviewed my work and suggested major and minor edits.

- Paper II: I independently recruited participants and collected the data for Papers II-IV. Dr. Van Bergen assisted with the statistical analysis for this paper. I wrote the drafts of the manuscript. Dr. McMaugh and Dr. Van Bergen reviewed my work and suggested major and minor edits.

- Paper III: I drew on the same data as collected for Paper II. Dr. McMaugh assisted with the statistical analysis for this paper. I wrote the drafts of the manuscript. Dr. McMaugh and Dr. Van Bergen reviewed my work and suggested major and minor edits.

- Paper IV: I drew on the same data as collected for Paper II. I designed the initial coding scheme, and coded all participants' data. Dr. McMaugh acted as the second coder of the data. I wrote the drafts of the manuscript. Dr. McMaugh and Dr. Van Bergen reviewed my work and suggested major and minor edits.

1. Introduction

The ability to access social resources by seeking support is an important way of coping in times of stress (Newman, 2008). Coping is defined as personal capacity "to maintain, restore, replenish, and repair the fulfilment of basic psychological needs in the face of experienced assaults on those needs" (Skinner & Wellborn, 1994, p. 91). Adolescents can choose to seek support from a variety of sources, but tend to prefer informal supports such as parents, friends, and peers (Camara, Bacigalupe, & Padilla, 2017; Wilson, Deane, Ciarrochi, & Rickwood, 2005). Adolescents can also choose to isolate themselves when faced with stress. Isolation is generally viewed as less adaptive than support seeking, as it involves withdrawal from social resources (Frydenberg, 2008; Skinner & Zimmer-Gembeck, 2016). The ways in which adolescents respond to stress are important, as being able to adaptively respond to stress is implicated in healthy psychosocial development (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Skinner, Edge, Altman, & Sherwood, 2003). Although adolescent support seeking is well understood, little is known about their use of online sources of support, and the implications of this behaviour for the development of adaptive coping.

While Australian adolescents continue to report that friends and parents are their first sources of support seeking when faced with a problem (Spears, Taddeo, Daly, Stretton, & Karklins, 2015), they also turn to online sources of support (Bonetti, Campbell, & Gilmore, 2010; Rickwood, Mazzer, & Telford, 2015). The use of the internet for informal support seeking is distinguished from other formal sources of support such as that provided by mental health professionals online and online support groups. While there is a considerable body of research focusing on adolescents' use of formal online support (see e.g. Clarke, Kuosmanen, & Barry, 2015; Kauer, Mangan, & Sanci, 2014; Rice et al., 2014 for reviews), less is known about their use of informal online support seeking. This represents a key gap in our understanding of adolescent coping. Recent evidence suggests that adolescents use their online connections to seek social support in response to daily stressors (Frison & Eggermont, 2015), and that many adolescents report being supported by online contacts in times of difficulty (Lenhart, Smith,

Anderson, Duggan, & Perrin, 2015). Thus, informal online support seeking may represent an important, and relatively new way in which adolescents cope with stress.

This thesis explores online support seeking in Australian early and middle adolescent girls. It focuses on determining how online support seeking is used in relation to traditional, in-person support seeking, and will identify how online support seeking is related to adolescent mental health. Finally, it will also seek to explore adolescents' reasons for seeking support online, with the aim to identify specific online support seeking behaviours that may be useful or problematic. The findings provide the first step towards developing interventions to increase optimal online support seeking behaviours in adolescents.

While the experience of everyday stress is normative across the lifespan, the early to middle adolescent period is a particularly stressful time (Seiffge-Krenke, 1995). During this period, adolescents nominate concerns about family and peer relationships, academic concerns, and societal issues as major causes of stress (Frydenberg, 2008). In Australia, early adolescents must also navigate a major school transition from primary to secondary school, with common transition stressors including increased academic pressure, the need to learn new school routines, and the need to make new friends (Waters, Lester, & Cross, 2014). As these are normative school experiences, individual differences in how adolescents cope with daily stress may reveal ways of coping that lead to positive and negative outcomes.

As adolescence is an important period for the development of coping (Zimmer-Gembeck & Skinner, 2011), it is critical that we understand the conditions under which the use of particular coping strategies is adaptive or maladaptive. Adolescence is also a crucial time to investigate support seeking and isolation specifically, because of the importance and flux of social relationships during this period. This is especially the case for girls, who are more susceptible to negative outcomes as a result of interpersonal stress (Hankin, Mermelstein, & Roesch, 2007; Moksnes, Espnes, & Haugan, 2014) but are also more likely to seek support to cope with stress (Hampel & Petermann, 2006; Raviv et al., 2009). Finally, early adolescence is a period of increased engagement with online communication (Office of Communications, 2016),

meaning that this is a critical age group in which to investigate the emergence of online support seeking behaviours.

1.1 Statement of the problem

Despite evidence that adolescents are seeking informal support online (Bonetti et al., 2010; Frison & Eggermont, 2015), we know little about this behaviour: particularly in early and middle adolescent girls. It is unknown: (a) whether online support seeking is used for particular stressors or contexts of coping, (b) whether online support seeking increases with age, or (c) whether or not online support seeking replaces or is related to other ways of coping. A further critical area of uncertainty is how online support seeking is related to mental health. Finally, there is limited research regarding adolescents' understandings of the conditions under which online support seeking may be useful or problematic, particularly in young adolescent girls.

1.2 Purpose and aims

The overarching purpose of this doctoral thesis was to investigate the informal online support seeking preferences of early and middle adolescent girls, and the developmental implications of this behaviour. In particular, the thesis aims to:

1. Identify whether adolescent girls' preferences for online support seeking (and seeking support from parents, friends, and peers, and isolation) vary according to stressor type and age,

2. Identify the extent to which girls rely on online sources of support in relation to traditional, in-person sources of support (i.e. parents, friends, and peers) and isolation,

3. Examine the relationships between online support seeking and seeking support from traditional, in-person sources of support (i.e. parents, friends, and peers) and isolation,

4. Identify the relationships between online support seeking (and seeking support from parents, friends, and peers, and isolation) and depression, anxiety, and stress, and

5. Explore adolescent girls' perceptions of the affordances and limitations of online support seeking.

1.3 Thesis outline

This doctoral thesis is presented as a thesis by publication. As stated in the Macquarie University Higher Degree Research Thesis Preparation, Submission and Examination Policy:

"A thesis by publication may include relevant papers, including conference presentations, which have been published, accepted, submitted or prepared for publication for which at least half of the research has been undertaken during enrolment. The papers must form a coherent and integrated body of work, which focuses on a single thesis project or set of related questions or propositions." (Macquarie University, 2017).

To satisfy the requirement for a thesis by publication, this thesis includes one systematic review paper (Paper I) and three empirical papers (Papers II – IV) prepared for publication. Two of these papers have been submitted to journals and are currently under review (Paper II and IV). Papers I and III have been prepared for submission to specifically targeted journals.

The thesis consists of nine chapters, as outlined in Table 1.1. *Chapter 1* (this chapter) provides a brief introduction to the thesis. This is followed by a review of the literature, presented in two parts. The first part of the literature review (*Chapter 2*) focuses on the literature that forms the theoretical background of the thesis. The second part of the literature review (*Chapter 3*) is presented as a systematic review of online social support studies (Paper I). The study contributions and research questions are outlined in *Chapter 4*. The methodological approach is introduced in *Chapter* 5 with further detail in each empirical paper. The results of the thesis are presented in three empirical papers (Papers II – IV) in *Chapters 6 – 8*. Finally, *Chapter 9* provides an integrated discussion of the findings detailed in previous empirical papers.

Table 1.1

Overview of thesis by chapter

Chapter Number	Chapter Title	Chapter Description	Publication Details (where relevant)
1	Introduction	Description of the research problem and brief discussion of the background of the doctoral thesis.	
2	Adolescent stress and coping	Conceptual review of the literature that forms the theoretical foundation of the thesis within a stress and coping framework. This chapter includes a review of the developmental context of stress and coping, theories of stress and coping, and support seeking and isolation in adolescence.	
3	Online social support	This chapter includes a systematic review paper focusing on informal online social support in adolescents and young adults. In this paper, benefits and limitations of three types of online social support are identified, including perceived online support, online support seeking, and enacted (actual) support.	Paper I: Benefits and limitations of informal online social support for youth: A systematic review. This article has been prepared for submission to *Personal Relationships*.
4	The current study	Identification of the contributions of the thesis and research questions.	
5	Methods	Overview of the methods employed in the study, which is supplemented by further detail in each of the empirical articles that follow.	
6	Relationships between online support seeking and other ways of coping	This chapter includes the first empirical paper, which explores the relationships between online support seeking and the other traditional ways of coping. This paper also examines age differences in ways of coping between the early and middle adolescent samples, and compares the use of online support seeking with the other ways of coping, according to stressor type.	Paper II: Seeking support in a modern world: Relationships between online support seeking and seeking support from traditional sources in adolescent girls. This article is currently under review in the *Journal of Early Adolescence.*

Chapter Number	Chapter Title	Chapter Description	Publication Details (where relevant)
7	Relationships between ways of coping and mental health	This chapter includes the second empirical paper, which investigates relationships between online support seeking and traditional ways of coping and mental health. Analyses were conducted separately for academic and social stressors, allowing conclusions to be drawn based on intended responses to different stressor type.	**Paper III:** Support seeking, isolation and asking for help online: Relationships with adolescent girls' mental health. This article has been prepared for submission to the *Journal of Adolescence*.
8	Adolescents' perspectives on the affordances and limitations of online support seeking	This chapter includes the third empirical paper, which provides insights into participants' views on the affordances and limitations of online support seeking. This paper presents the thematic analysis of interviews with a subset of adolescent girls, and also includes a brief section detailing the online support seeking behaviours of the entire study sample.	**Paper IV:** Adolescent girls seeking support online: Affordances and limitations. This article has been submitted to *Computers in Human Behavior*.
9	General discussion and conclusion	General discussion of the findings from the project, including practical, methodological, and theoretical implications.	

2. Adolescent Stress and Coping

Learning to cope with stress is a ubiquitous feature of adolescent life. Adolescent stress has been conceptualised in terms of daily hassles and major life events (e.g. Compas, Davis, Forsythe, & Wagner, 1987). While only a small proportion of adolescents may be experiencing a highly stressful major event at any given time (e.g. the death of a loved one, parental divorce, or severe illness), almost all adolescents will experience day-to-day challenges and hassles that require coping responses (e.g. arguments with friends or parents, challenging school work, and peer exclusion) (Seiffge-Krenke, Aunola, & Nurmi, 2009). Experiencing and responding to these everyday stressors is a normative aspect of children and adolescents' lives, both inside and outside school settings.

Coping is a regulatory process that is enacted in response to stress (Compas, 2009), and appropriate coping responses are required to navigate the early and middle adolescent period successfully. Indeed, the ways in which adolescents respond to stress can have significant short- and long-term implications for their psychosocial functioning (Compas et al., 2001; Skinner et al., 2003). As a result, significant research attention has been devoted to investigating how different responses to stress influence adolescent development. While this body of research is well-established (for reviews see Compas et al., 2001; Compas et al., 2017; Zimmer-Gembeck & Skinner, 2011), the relatively recent and rapid uptake of online communication by adolescents represents a new context in which to consider adolescent coping.

This chapter begins with an overview of sources, the incidence, and effects of stress in the early to middle adolescent years. This is followed by an exploration of theory and research on coping, and the developmental perspectives of coping that underpin the theoretical approach of this thesis. Finally, the chapter focuses on reviewing research on adolescents' use of support seeking and isolation as specific ways of coping.

2.1 Sources and effects of stress in the early to middle adolescent years

While exposure to everyday stressors is normative across the lifespan (Aldwin, 2011; Almeida, 2005), many adolescents report experiencing relatively high levels of stress.

Approximately two-thirds of the 14,530 Australian adolescents who participated in the 2015 Programme for International Student Assessment (PISA) reported feeling very anxious about their exams (Organisation for Economic, & Co-operation and Development, 2017). Similarly, adolescents in the United States reported that their stress levels were higher than what they perceived to be healthy, particularly during the school year (American Psychological Association, 2014). Unsurprisingly then, "coping with stress" and "concerns about school or study" were the top two issues of concern identified by adolescents in a recent Australian study of 24,055 adolescents (Bullot, Cave, Fildes, Hall, & Plummer, 2017). These findings indicate that a significant proportion of adolescents experience concerning levels of stress, particularly regarding schoolwork.

Developmental trends in adolescents' stress levels are also evident, with early adolescence representing a time of particular vulnerability. A longitudinal study of changes in stress perception and coping during adolescence in German adolescents found that higher levels of stress were experienced in early adolescence, and lower levels of stress after 15 years of age (Seiffge-Krenke et al., 2009). In an Australian study, Grade 7 students reported significantly higher distress than Grade 9 and Grade 11 students (Frydenberg & Lewis, 2009). While evidence suggests that pubertal neurobiological changes are implicated in increased stress reactivity in early adolescence (Dahl & Gunnar, 2009; Romeo, 2010), there are also significant social and environmental changes that occur during this period. These sources of stress in early to middle adolescence will be explored in the next section. Following this, implications of adolescent stress for mental health will be examined.

2.1.1 Sources of stress in early to middle adolescence

Early adolescence is generally accepted as a stressful period because of new pubertal, social, and environmental stressors (Schonert-Reichl & Muller, 1996; Waters et al., 2014). One important contextual factor for early adolescents in Grade 7 is the transition from primary to secondary school, as this transition can be a time of heightened stress (Lupien et al., 2013) that places significant demands on coping resources (Bagwell & Schmidt, 2013; He & Wong, 2017;

Jindal-Snape & Miller, 2008). In most cases, moving to secondary school may involve a new school environment, social disruption, and significantly different educational expectations (Lord, Eccles, & McCarthy, 1994; Waters et al., 2014). These changes have academic and socio-emotional implications, with a decline in academic achievement (Alspaugh, 1998; Hopwood, Hay, & Dyment, 2017; Ryan, Shim, & Makara, 2013; West & Schwerdt, 2012), increased loneliness (Benner, Boyle, & Bakhtiari, 2017), and declines in self-esteem (Chung, Hutteman, van Aken, & Denissen, 2017; Jindal-Snape & Miller, 2008) reported across the transition period. Most adolescents navigate the transition well, and any negative effects are temporary (Anderson, Jacobs, Schramm, & Splittgerber, 2000; Gillison, Standage, & Skevington, 2008; He & Wong, 2017; Walls & Little, 2005). However, for some adolescents the difficulties faced during the move to secondary school can be ongoing. In these cases, there can be a detrimental effect on future learning and engagement with school (Eccles, Lord, Roeser, Barber, & Jozefowicz, 1997; Smith, 2006).

In addition to the stressors specific to the primary to secondary school transition, research has shown that 46 – 82% of everyday stressors reported by adolescents are related to interpersonal concerns, such as conflict in relationships (Seiffge-Krenke et al., 2009). There is also an increase in relationship conflict between childhood and adolescence (Juang & Umaña-Taylor, 2012). In parent-child relationships, for example, conflict peaks in early to middle adolescence, which may stem from younger adolescents increasingly seeking autonomy from their parents (Furman & Buhrmester, 1992). While this is a fundamental developmental task of adolescence, it can produce conflict between adolescents and parents if there is a mismatch between adolescent and parental perceptions of appropriate adolescent autonomy (Gutman & Eccles, 2007). According to adolescents themselves, conflicts with parents can also be triggered by poor academic performance, or by their parents' beliefs that they are lacking in academic motivation (Camara et al., 2017). Such conflict may have negative effects on family relationships and adolescent development, particularly when it is recurrent (Ehrlich, Dykas, & Cassidy, 2012; Laursen & Collins, 1994). Further, changes and conflict in relationships can

mean the effectiveness of support provided is reduced (Holt-Lunstad, Uchino, Smith, & Hicks, 2007). Together, these findings show that parent-adolescent relationships may be a significant source of stress for some early adolescents.

Conflict in peer relationships is also common, and has a negative effect on adolescent wellbeing (La Greca & Harrison, 2005). Relational aggression, which includes behaviours intended to hurt others by damaging relationships (Crick, 1996), is known to reach a peak between the ages of 10 and 13 years (Finkelhor, Turner, Shattuck, & Hamby, 2015). Peer conflict is postulated to be particularly stressful for adolescents because it threatens the social resources (including social support) that peer relationships provide (Laursen & Pursell, 2009). Girls appear to be especially susceptible to interpersonal stress, experiencing higher levels of interpersonal stress than boys, and view these stressors as inherently more stressful (Hankin et al., 2007; Rosenfield & Mouzon, 2013; Seiffge-Krenke & Persike, 2017). Indeed, adolescent girls report that they experience a range of negative psychosocial effects following incidences of relational aggression (Owens, Slee, & Shute, 2000). Thus, adolescent girls may be particularly vulnerable to loss or changes in sources of support at this stage of life.

Taken together, these findings demonstrate that the early to middle adolescent period is a time of heightened exposure to multiple stressors. This may be particularly true for girls, who experience higher levels of stress than boys (De Vriendt et al., 2012; Hampel & Petermann, 2006). While there are many biological and psychosocial factors that are implicated in the emergence of poor mental health (Paus, Keshavan, & Giedd, 2008), elevated levels of everyday stress are related to poor mental health in early adolescence (Compas et al., 2001; Marks, Sobanski, & Hine, 2010; Moksnes, Espnes, & Haugan, 2014; Rueger & Malecki, 2011). The incidence and emergence of mental health difficulties in early to middle adolescence will be examined in the next section.

2.1.2 *Mental health in early to middle adolescence*

In Australia and internationally, many adolescents experience suboptimal levels of mental health. In one recent Australian study, for example, Lawrence et al. (2015) found that

almost 14% ($N = 9,279$) of children and adolescents aged 4 to 17 years had experienced a mental health disorder. Similarly, a meta-analysis of the worldwide prevalence of mental health disorders in children and adolescence reported that 13.4% experienced a mental health disorder (Polanczyk, Salum, Sugaya, Caye, & Rohde, 2015). Another Australian study found that less than 50% of participants aged 13 to 17 years were "flourishing in life", with high levels of well-being and positive functioning (Venning, Wilson, Kettler, & Elliot, 2013, p. 299). Given that those who experience depression and anxiety during their adolescent years are also more likely to experience a mental health disorder in early adulthood (Pine, Cohen, Gurley, Brook, & Ma, 1998), such findings are a cause for concern.

While mental health concerns occur across adolescence, early to middle adolescence is a particularly vulnerable time for the emergence of mental health difficulties. In the United States, for example, 50% of lifetime cases of diagnosable mental health disorders emerge by age 14 (Kessler et al., 2005). Two of the most prevalent mental health disorders experienced by adolescents are depression and anxiety (Lawrence et al., 2015; Merikangas et al., 2010; Rapee, Schniering, & Hudson, 2009). While the prevalence of depression rises in adolescence (Zahn-Waxler, Shirtcliff, & Marceau, 2008), anxiety is more likely to emerge in childhood and to become more prevalent in adolescence (Merikangas et al., 2010; Roza, Hofstra, van der Ende, & Verhulst, 2003). Anxiety is also considered to be a risk factor for the later development of depression (Beesdo, Bittner, & Pine, 2007), suggesting that mental health difficulties experienced in early adolescence may have significant implications for mental health throughout middle and later adolescence.

As for stress more generally, gender is a significant predictor of adolescent mental health. Girls are more likely to experience internalising disorders than boys, including depression (Colarossi & Eccles, 2003; Hankin et al., 2007; Zahn-Waxler et al., 2008) and anxiety (Roza et al., 2003). In the Mission Australia Youth Survey, conducted annually from 2012 to 2016, Australian adolescent girls aged 15 to 19 years were twice as likely as boys to have a probable serious mental illness (Mission Australia, 2016).

There are some suggestions that the mental health of girls has become worse over time. For example, in the 2012 Mission Australia Youth Survey, 22.5% of girls and 12.7% of boys were identified as having a probable serious mental illness. In 2016, the percentage of girls meeting the criteria for probable serious mental illness rose to 28.6%, while there was a minimal increase to 14.1% for boys (Mission Australia, 2016). This finding is similar to an earlier comparative study of 15 year olds in Scotland that reported that girls' psychological distress levels had increased between 1987 and 1999, while boys' distress levels were unchanged (West & Sweeting, 2003). Further, a recent systematic review of international epidemiological studies of mental health in adolescence concluded that while the incidence of externalising disorders appear to have remained stable for both genders, the incidence of internalising disorders in adolescent girls has increased over time (Bor, Dean, Najman, & Hayatbakhsh, 2014). These authors suggest that increased pressure of achievement being placed on girls, earlier sexualisation, increased concerns about appearance, and changes in media use over time explain the increased incidence of internalising disorders in girls.

Girls from advantaged and middle class backgrounds appear to be particularly at risk of experiencing some mental health difficulties. For example, Luthar and D'avanzo (1999) found that girls from affluent backgrounds in the United States were two to three times more likely to report experiencing depression than girls in normative samples. A more recent study has found that affluent girls experienced greater levels of perfectionism, body dissatisfaction, and envy about peers than boys from affluent backgrounds and girls from lower socioeconomic backgrounds (Lyman & Luthar, 2014). Recent evidence similarly suggests that adolescents from advantaged backgrounds in the United Kingdom experience poorer mental health than those from less advantaged backgrounds (Lessof, Ross, Brind, Bell, & Newton, 2016). Several reasons for greater distress in girls from affluent backgrounds have been found, including increased stress generated from concerns about academic achievement and appearance, isolation from parents, heightened peer comparison, and pressure from parents to succeed (Luthar & Latendresse, 2005; Spencer, Walsh, Liang, Mousseau, & Lund, 2016). Collectively, these

findings suggest that adolescent girls from advantaged backgrounds may be a particularly important population in which to examine factors related to stress, coping, and mental health.

2.1.3   Summary

The literature reviewed in this section has demonstrated that young adolescents experience a range of concurrent social and school-based stressors. While the onset of mental health difficulties in adolescence is driven by numerous biological and psychosocial factors (Paus et al., 2008), exposure to these everyday social and school-based stressors is a contributing factor: placing adolescents at heightened risk of poorer mental health outcomes (Marks et al., 2010; Sim, 2000). Adolescent responses to everyday stressors can vary, and these responses play a role in determining the outcomes associated with the experience of stress (Compas et al., 2001). Thus, the development of effective coping skills has important implications for the mental health and wellbeing of early and middle adolescents. In the following section, key theoretical perspectives on coping are reviewed, including the role of cognitive appraisals in the experience of stress.

2.2 Coping

While coping was originally viewed as a defence mechanism in response to stress, Lazarus' work beginning in the 1960s expanded this notion to include both behavioural and cognitive responses employed in response to problems (Folkman & Moskowitz, 2004). This seminal body of work represented a shift towards stress and coping as a transactional process, emphasising the interplay between the environment (situation) and the individual (perception of the situation) (see Lazarus, 1981). The transactional view of stress and coping acknowledges that the environment affects the individual, but the individual also influences the environment through their cognitive appraisal of the situation: known as the cognitive mediational theory.

2.2.1   Cognitive appraisals in stress and coping

A key aspect of the cognitive mediational theory is the view that an individual's appraisal of the stressful event is fundamental to their experience of stress and their response to the event (Lazarus, 1981). First, the primary cognitive appraisal of an event can be distinguished as

benign/positive, irrelevant, or stressful. Stressful appraisals of events are further divided into three types: harm, threat, and challenge. Harm represents an event that had already occurred, while threats and challenges are anticipatory appraisals. Threats are viewed as stressors associated with harm or loss, while challenges are stressors that bring opportunities for personal development or mastery of the situation (Lazarus & Folkman, 1987). These primary appraisals of stress are hypothesised to influence the type of coping response used, together with the wellbeing of the individual (Lazarus, 1981).

Following the primary appraisal of an event as being stressful, the individual can employ a coping response to mitigate the effects of the stressful encounter. The assessment of potential coping options is referred to as secondary appraisal (Lazarus, 1981). This secondary appraisal also influences the primary appraisal. For example, if the individual believes that their coping resources are not sufficient to meet the demands of the stressful event, they are more likely to perceive it as threatening. In contrast, if the individual is confident in their ability to respond effectively to the situation, they are more likely to perceive it as challenging (Lazarus & Folkman, 1987). As such, stress and coping are very much an individual experience and no two individuals can be assumed to be experiencing or appraising a stressor in the same way.

2.2.2   Categories of coping

As people's coping responses are highly variable, Lazarus and Folkman (1980) initially used the concept of coping 'function' to distinguish between and categorise different ways of coping. Two functions of coping were originally identified: problem-focused coping, where the coping response is centred on dealing with the stressful event itself, and emotion-focused coping, where the focus is emotion regulation (Folkman, Lazarus, Gruen, & DeLongis, 1986). For example, problem-focused strategies include problem-solving and support seeking, and emotion-focused strategies include distraction and emotional expression. In situations perceived as controllable, problem-focused strategies are considered preferable. Conversely, in situations that are perceived to be unchangeable, efforts to regulate the emotional response are more ideally suited (Lazarus, 1984). Drawing on this early conceptualisation, Forsythe and Compas (1987)

also found empirical evidence for less favourable outcomes if there is a mismatch between the coping style and situation. Where a problem-focused response was used in an uncontrollable situation, for example, college students experienced higher levels of psychological symptomology (defined as emotional, behavioral, and somatic problems). However, Lazarus and Folkman also argue that:

> "…any given coping process may have favourable or unfavourable results depending on (1) who uses it, (2) when it is used, (3) under which environmental and intrapsychic circumstances, and (4) with respect to which adaptational outcomes." (1987, p. 158)

This method of classifying coping is also problematic because the categories are not mutually exclusive (Lazarus, 1996; Skinner et al., 2003). Social support, for example, can be used to help solve a problem (e.g. by seeking advice), but can also be emotion-focused (e.g. by reaching out to someone for emotional support). Thus, alternative methods of classifying coping have been proposed.

Several higher-order categories of coping have emerged (for an extensive review, see Skinner et al., 2003). For example, a commonly used distinction is approach and avoidant coping, reflecting whether coping efforts are directed at or away from the source of stress (Roth & Cohen, 1986). These methods of classification are typically limited, however, in that categories are either not clearly defined or overlap (Skinner et al., 2003). In the case of the approach and avoidance, for example, seeking support is often classified as an approach strategy (e.g. Causey & Dubow, 1994). However, Skinner and colleagues (2003) argue that support seeking can take the focus away from the stressor, which would place it in the avoidance category.

Taken together, it appears that broad categories of coping are problematic because they are not mutually exclusive or clearly defined, and they draw a diverse range of coping responses into several large categories (Compas et al., 2001; Skinner et al., 2003). While classifying coping into broad categories has proven to be useful in comparing findings across studies, information

about more specific ways of coping is obscured (Folkman & Moskowitz, 2004). This limitation may be particularly relevant to research on child and adolescent coping, where developmental changes may influence the emergence or development of specific ways of coping at different stages, as appears to be the case in the recent emergence of online support seeking. To address this limitation, some developmental theorists have moved towards classification systems that allow investigation of more specific ways of coping (e.g. Ayers et al., 1996; Connor-Smith & Compas, 2000; Skinner et al., 2003).

2.3 Developmental perspectives on coping

While coping research in children and adolescents was initially based on transactional models of stress and coping, developmental perspectives on coping have emerged that consider both individual differences in coping, and the developmental of coping across childhood, adolescence, and early adulthood (Zimmer-Gembeck & Skinner, 2016). Although developmental definitions of coping vary, they converge on one central tenet of coping defined as "regulation under stress" (Compas et al., 2001; Eisenberg, Fabes, & Guthrie, 1997; Skinner & Zimmer-Gembeck, 2016). This definition of coping emphasises the importance of coping in the development of regulation and successful adaptation, which is distinct from the transactional perspective of coping as responses aimed at reducing harm as a result of stress (Skinner & Zimmer-Gembeck, 2016). Thus, coping involves regulation of emotion, behaviour, physiology, cognition, attention, and motivation in response to stress (Skinner & Zimmer-Gembeck, 2009; 2016). Developmental coping perspectives recognise that coping is constrained by the emotional, social, and cognitive development of the child or adolescent (Compas et al., 2001), and focus on how changes in coping are related to developmental processes and vice versa (Compas, 1998).

One key objective of the developmental study of coping is to identify typical patterns of changes in coping. To this end, developmental stages reflecting major changes in coping have been identified (Skinner & Zimmer-Gembeck, 2007, Zimmer-Gembeck & Skinner, 2011). Each stage is characterised by developmental changes that influence stress and coping, including regulation, emotion, cognition, and the social context (Zimmer-Gembeck & Skinner, 2011).

These developmental stages and their associated major transformations in coping are summarised in Table 2.1. In early adolescence, for example, improvements in metacognition

Table 2.1
Summary of typical major transformations in coping and related developmental context (adapted from Skinner & Zimmer-Gembeck, 2007, 2009, 2016)

Developmental stage	Age range (approx.)	Expected global changes in coping	Related developmental context
Infancy	18 – 24 months	Use of voluntary actions to cope, heavy use of social partners to assist in coping efforts	Emergence of voluntary behavioural control
Middle childhood	5 – 7 years	Use of cognitive coping strategies, generation of alternative coping strategies	Changes in memory, emotion, and cognition
Early adolescence	10 – 12 years	Increased use of cognitive and metacognitive coping, increased coping flexibility	Improvements in metacognition, expansion of social networks
Middle adolescence	14 – 16 years	Increased self-reliance in coping	Increased importance of identity and autonomy
Late adolescence	18 – 22 years	Integrates long-term goals into coping efforts	Increased self-regulation and emotion-processing

should lead to an increased ability to match coping strategies with the type of stressor, and allow adolescents to reflect on their own coping (Compas et al., 2001; Zimmer-Gembeck & Skinner, 2016). Further, a greater range of coping strategies should be available to adolescents (Compas et al., 2001; Donaldson et al., 2000), but when faced with everyday stressors they may rely on a narrower range of strategies that they have identified as being effective (Skinner & Zimmer-Gembeck, 2016). While these changes indicate that adolescents should have increased capacity to cope with stress, emotion regulation and response inhibition are not yet fully developed in adolescence (Rahdar & Galván, 2014; Steinberg, 2005), which may lead to adolescents employing less adaptive coping strategies under high stress situations (Zimmer-Gembeck & Skinner, 2016). During middle adolescence, the increased salience of identity and autonomy is expected to drive increases in self-reliance in managing stressors (Crystal et al., 2008; Skinner & Zimmer-Gembeck, 2016).

Beyond the identification of major transformations in coping, it is also important to identify how specific coping responses develop from infancy to adulthood (Skinner & Zimmer-Gembeck, 2009). This is because the specific coping strategies that children and adolescents employ have "short-term effects on the resolution of stressors, as well as… long-term effects on mental and physical well-being and development" (Skinner & Zimmer-Gembeck, 2016, p. 27). Following a comprehensive review of coping measures, Skinner and colleagues (2003) identified over 400 different labels for coping strategies. Twelve groups of coping strategies, called families, have been proposed to organise the diverse array of coping options (Skinner et al., 2003). The structure of the families of coping model will be expanded on in the following section, along with the developmental implications of classifying coping in this way.

2.3.1   *Families of coping*

Families of coping are higher-order categories of coping strategies, or ways of coping (Skinner et al., 2003). As shown in Table 2.2, the families of coping are grouped according to their role in one of three key adaptive processes associated with managing stress: (1) coordinating reliance and social resources available, (2) coordinating actions and contingencies in the environment, or (3) coordinating preferences and available options (Skinner & Zimmer-Gembeck, 2007). For example, the support-seeking, isolation, self-reliance, and delegation families of coping are implicated in the adaptive process of coordinating reliance and social resources available because they involve balancing the use of available social resources that can assist with coping efforts with self-reliance on coping capacities to conserve these social resources (Skinner & Zimmer-Gembeck, 2016).

Each family of coping includes coping strategies that perform a particular function within one of the three adaptive processes (see Table 2.2). For example, the support seeking family of coping includes strategies such as comfort-seeking, contact-seeking, and instrumental aid (Skinner et al., 2003). These strategies are theorised to have the same function in the adaptive process, which is to access social resources that can help to deal with stress (Skinner & Zimmer-Gembeck, 2016).

Families of coping are also organised around whether they are employed in response to appraisals of challenge or threat (see Table 2.2) (Skinner et al., 2003), which reflects the key role of appraisals in the experience of stress (Lazarus & Folkman, 1987). The families that stem from

Table 2.2
Links between coping families and their adaptive function, organised by their driving psychological need (adapted from Skinner et al., 2003; Skinner & Zimmer-Gembeck, 2007).

Adaptive process	Appraisal	Family of coping	Examples of strategies	Function in adaptive process
Coordinate reliance and social resources available	Challenge	Self-reliance	Emotion and behaviour regulation	Protect available social resources
		Support-seeking	Contact-seeking, comfort-seeking, instrumental aid	Use available social resources
	Threat	Delegation	Maladaptive help-seeking, whining	Find limits of resources
		Isolation	Social withdrawal, concealment	Withdraw from unsupportive context
Coordinate actions and contingencies in the environment	Challenge	Problem-solving	Strategising, planning	Adjust actions to be effective
		Information-seeking	Observation, asking others	Find additional contingencies
	Threat	Helplessness	Confusion, cognitive interference	Find limits of actions
		Escape	Behavioural avoidance, denial	Escape noncontingent environment
Coordinate preferences and available options	Challenge	Accommodation	Distraction, minimisation	Flexibly adjust preferences to options
		Negotiation	Persuasion, bargaining	Find new options
	Threat	Submission	Rumination, intrusive thoughts	Give up preferences
		Opposition	Other-blame, aggression	Remove constraints

challenge appraisals (e.g. support seeking, self-reliance) are typically considered more adaptive, while those that stem from threat appraisals (e.g. isolation, delegation) are theorised to be indicative of an overwhelmed coping system, and may have long-term negative implications for development (Zimmer-Gembeck & Skinner, 2016). Skinner et al. (2003) argue that the long-term developmental consequences and subjective experience of a family of coping strategies should be considered holistically when determining whether a group of coping strategies is adaptive. No family of coping should be considered good or bad in *all* situations, rather:

"…it is necessary to carefully consider how, when, and why certain responses to stress should be "good news" or "bad news"." (Skinner & Zimmer-Gembeck, 2016, p. 42)

Indeed, there may be situations where the short-term use of less adaptive coping strategies can be useful. For example, concealment of a poor exam mark (a strategy of isolation) from a parent to avoid conflict may be an adaptive way of coping in the short-term. However, a pattern of coping behaviours that includes frequent concealment of academic difficulty is likely to be maladaptive, preventing the adolescent from seeking academic support.

A critical feature of the families of coping model is the notion that the coping strategies within each family may differ depending on the developmental stage of the individual (Skinner & Zimmer-Gembeck, 2016). For example, support seeking in early childhood can be observed as heavy reliance on attachment figures for all forms of support, after which time developments in cognitive capacity enable support seeking to be more specific to the problem and context that the child or adolescent is exposed to (Zimmer-Gembeck & Skinner, 2011). As social networks expand, and peer relationships become more salient in early adolescence (Skinner & Zimmer-Gembeck, 2009), support may be increasingly sought from friends (Crystal et al., 2008) or from online sources (Frison & Eggermont, 2015). Thus, the developmental context in which different coping strategies contribute to adaptive processes can be integrated into the families of coping model.

2.3.2   Support seeking and isolation

While each of the twelve families of coping are significant in their own right, this study focuses on support seeking and isolation. Support seeking is theorised to stem from challenge appraisals, and is a behaviour that is characterised by the tendency to reach out and seek connections with others, thus enabling the individual to cope when stressors outweigh their ability to cope alone (Skinner & Zimmer-Gembeck, 2016). This support can include emotional support, information and resources, and a sense of connection or relatedness with others (Skinner et al., 2003; Zimmer-Gembeck & Skinner, 2008). Support seeking is also a highly variable

coping family, as there are different *sources* of support and different *types* of support that can be sought. In contrast, isolation includes behaviours such as concealment of problems, withdrawal, and avoidance of others (Skinner et al., 2003). Isolation is positioned as the opposing family to support seeking (Skinner et al., 2003), reflecting appraisals of threat rather than challenge. As a coping strategy, isolation is theorised to interfere with the ability to gather social coping resources and obstruct the development of more adaptive ways of coping (Frydenberg, 2008; Skinner et al., 2003; Skinner & Zimmer-Gembeck, 2016). Isolation strategies allow the individual to hide problems or emotions generated by stress from others (Skinner & Zimmer-Gembeck, 2016), but are also linked with emotions such as sadness, loneliness, and despondency (Skinner et al., 2003).

Early to middle adolescence is a critical developmental stage in which to investigate support seeking and isolation. In the case of support seeking, for example, developments in metacognitive capacity from childhood to adolescence mean that adolescents are increasingly capable of identifying when they could benefit from seeking support, and they can also differentiate between the potential usefulness of different sources of support (Ryan, Pintrich, & Midgley, 2001; Schonert-Reichl & Muller, 1996; Skinner & Zimmer-Gembeck, 2007). Further, the capacity to seek support in adolescence has been implicated in mental health outcomes because of the adaptive or maladaptive nature of certain support seeking strategies, such as co-rumination or focusing on negative affect (Velez et al., 2015). Finally, adolescence is characterised by changing contexts and relationships, suggesting that support seeking may be influenced by the concurrent cognitive, pubertal, and social changes experienced by young adolescents (Schonert-Reichl & Muller, 1996; Skinner & Zimmer-Gembeck, 2009). In the case of isolation, those who experience difficulties at school may choose to withdraw by concealing their problems (Marchand & Skinner, 2007). It is also possible that isolation is influenced by increasing metacognitive capacity in early to middle adolescence, as "the same capacities that allow adolescents to *recognize* they need help can also trigger *concern* that others may lose respect for them if they seek help" (Zimmer-Gembeck & Skinner, 2016, p. 29).

In the following sections, evidence of adolescents' use of traditional support seeking and isolation is reviewed. These sections focus on how adolescents use support seeking and isolation, and on the relationships between these coping strategies and adolescent wellbeing.

2.4 Adolescents' use of support seeking to cope with stress

For adolescents, support seeking represents a frequently used way of coping with stress (Skinner et al., 2003). Support seeking is also varied, with different sources of support (e.g. parents, friends, peers) each able to offer different kinds of support (e.g. emotional, informational, instrumental) (Malecki & Demaray, 2002). While findings from focus group interviews with 15 and 16 year olds indicate that emotional support may be the most valued type of support for adolescents (Camara et al., 2017), informational and instrumental support are also likely to be salient and useful in academic contexts. Given the different sources of support available to adolescents, one increasingly important developmental task during support seeking is to match the source of support with the context or type of support required (Zimmer-Gembeck & Skinner, 2011). Changes in patterns of support seeking are considered to be one of the clearest indicators of increased coping flexibility in adolescence (Zimmer-Gembeck & Skinner, 2016).

2.4.1   Sources of support

Adolescents are most likely to seek support from friends and parents, rather than from more formal sources of support such as teachers or other professionals (Bullot et al., 2017; Raviv, Sills, Raviv, & Wilansky, 2000; Schonert-Reichl, Offer, & Howard, 1995; Wilson et al., 2005). Informal support seeking may be less threatening to the self and more easily accessible than formal support (Raviv et al., 2009); because it is more common, it may also be seen as more normative. Further, negative attitudes towards seeking formal professional support can lead to avoidance of seeking formal support, with some evidence that adolescents express concerns that professional support would not be useful, or that their issues would not be taken seriously (Rickwood, Deane, Wilson, & Ciarrochi, 2005).

While studies of social support have traditionally focused on face-to-face support from parents, friends, and peers (e.g. Raviv et al., 2000), it is increasingly evident that some

adolescents seek support online as well as in-person. For example, Frison and Eggermont (2015) found that higher levels of daily stress were related to greater support seeking through Facebook. While no studies to date have determined which online sources adolescents seek support from, more general online communication patterns suggest that such sources may predominantly be friends and acquaintances that they know in-person (see Pempek, Yermolayeva, & Calvert, 2009; Reich, Subrahmanyam, & Espinoza, 2012).

It is also evident that there are developmental changes in terms of the sources adolescents prefer to seek support from. Reflecting the increased importance of peer relationships in adolescence, for example, cross sectional studies show that children in the upper primary years view their parents and family as their primary sources of support (Shute, De Blasio, & Williamson, 2002) while early adolescents view friends as their primary sources of support (Crystal et al., 2008; Furman & Buhrmester, 1992). Similarly, middle and late adolescents identify that they are most likely to turn to friends for support, followed by parents and other family members (Bullot et al., 2017). An increased desire for autonomy during adolescence may also drive a reduction in seeking support from adults (Skinner & Zimmer-Gembeck, 2016). Notwithstanding this developmental shift, however, parents remain a vital source of support across adolescence. For example, parents remain influential in decision-making, particularly when the decisions are perceived to have longer-term consequences (Bengtson, Biblarz, & Roberts, 2002). Parent support is a stronger predictor of wellbeing and academic achievement than peer support across adolescence (Helsen, Vollebergh, & Meeus, 2000; Schonert-Reichl & Muller, 1996; Wentzel, Russell, & Baker, 2016). Further, Szwedo, Hessel, Loeb, Hafen, and Allen (2017) found that seeking support from parents at 13 years predicted functional independence at 25 years. For girls in particular, parental support during adolescence predicts wellbeing in early adulthood (Seiffge-Krenke & Persike, 2017). These findings suggest that early adolescent support seeking behaviours may have long-term implications for healthy psychosocial development.

Over and above developmental differences, it is significant to note that the source of support selected by adolescents may depend on the *type* of stressor they are facing. As discussed earlier, adolescents face different types of everyday stressors, including academic and social stressors. For example, adolescents appear to prefer seeking support from friends for social stressors (Boldero & Fallon, 1995; Wilson et al., 2005; Wintre & Crowley, 1993). In an early study, adolescents reported a preference for seeking support from teachers for academic stressors (Boldero & Fallon, 1995). There is also more recent evidence showing that adolescents seek academic support from friends and family (Altermatt, 2007; Ryan & Shim, 2012). The extent to which adolescents prefer to seek support from parents, friends, and peers when faced with academic stress is unknown, however, as are their preferences for seeking support online.

2.4.2 Gender differences in support seeking

A relatively large body of evidence shows important gender differences in support seeking by girls and boys. For example, girls are more likely to seek support than boys, who tend to rely on physical recreation and ignoring the problem (e.g. Donaldson, Prinstein, Danovsky & Spirito, 2000; Frydenberg & Lewis, 1993; Frydenberg & Lewis, 2000; Hampel & Petermann, 2006; Piko, 2001; Raviv et al., 2009). This gender difference remains significant even after controlling for the amount of psychological distress experienced (Rickwood & Braithwaite, 1994), suggesting a robust difference in patterns of coping according to gender. While the reasons for these differences have not been confirmed, Rickwood et al., (2005) suggest girls may be more likely to identify and express distress than boys. Boys, in turn, may be more likely to avoid emotional expression to adhere to masculine social roles.

While girls may be more likely to seek support than boys, they also draw on different sources. Girls are more likely than boys to seek support from peers (Altermatt, 2007; Boldero & Fallon, 1995; Bullot et al., 2017), and online sources (Bonetti et al., 2010; Bullot et al., 2017; Lenhart et al., 2015). On the other hand, boys are more likely than girls to seek support from parents (Boldero & Fallon, 1995), and prefer to seek support from family over friends (Rickwood et al., 2005). These findings highlight the importance of examining individual

differences in support seeking and in the case of gender differences, the particular importance of distinguishing sources of support for adolescent girls.

Together, these findings demonstrate that support seeking is a commonly used coping strategy for girls, with peers representing a particularly salient source of support. While there has been significant research focus on adolescents' use of different sources of support, less is known about how sources of support vary according to the type of stressor being experienced. Indeed, both the type and source of support may be implicated in determining the effectiveness of support seeking. The adaptive function of seeking support from various sources according to stressor type is considered in the following section.

2.4.3   *Support seeking and mental health: role of source and type of support*

As discussed earlier, adolescents' ability to adapt to stressful situations is important for healthy psychosocial development. While support seeking is generally considered to be an adaptive way of coping, empirical evidence for this is inconsistent for two reasons. First, seeking support can be an indicator that an individual's coping resources are overwhelmed, meaning that people who are more stressed may be more likely to seek support in the first place (Chu, Saucier, & Hafner, 2010). Second, while seeking support facilitates access to social resources, there are also emotional costs such as feeling incapable or embarrassed in front of the support provider (Bolger, Zuckerman, & Kessler, 2000). These emotional costs have been posited as barriers to support seeking, but can also be consequences of seeking support that affect the relationship between seeking support and wellbeing (Bolger & Amarel, 2007). The nature of the support received (enacted) is also likely to influence whether support seeking is beneficial (Maisel & Gable, 2009). These factors should be acknowledged as having the potential to complicate the relationship between support seeking and psychosocial development. Indeed, these factors also may explain why the relationship between support seeking and mental health has been found to be less consistently positive than the relationship between perceived social support and mental health (Chu et al., 2010).

It is apparent that both stressor type and the source of support are critical factors to consider in determining the relationship between support seeking and mental health. When stressor types are not identified, conflicting findings are evident. For example, Murberg and Bru (2005) found that adolescents who sought support from their parents were less likely to be depressed one year later, while Galaif and colleagues (2003) reported that there was no relationship between seeking support from friends and family and depression one year later. When stressor types are identified, different relationships have been found between support seeking and mental health outcomes, depending on the source of support and type of stressor. In response to social stressors, for example, seeking support from parents (Visconti & Troop-Gordon, 2010) or from unspecified sources (Zimmer-Gembeck, 2015) is unrelated to mental health. Seeking support from friends predicted increased anxiety (Visconti & Troop-Gordon, 2010), however.

Less is known about the relationship between seeking support for academic stressors and mental health. It is known that students who seek support from parents, friends, or professionals are more likely to experience positive outcomes such as a positive school attitude (Ganim & Frydenberg, 2006) and higher levels of school engagement (Marchand & Skinner, 2007). However, it is unknown how seeking support for academic stressors from parents, friends, and peers is related to negative mental health outcomes, such as depression and anxiety. As academic concerns are a salient source of stress for adolescents (Bullot et al., 2017), increased research attention on the relationship between academic support seeking and mental health is warranted.

Another area of research in its preliminary stages is the relationship between informal online support seeking and mental health. Initial evidence suggests that online support seeking may have a complex relationship with mental health in adolescence (Frison & Eggermont, 2015). Studies focussed on the relationship between online support seeking and mental health are examined in Chapter 3.

The literature reviewed in this section has demonstrated that adolescents seek support from a range of sources, but prefer seeking support from informal sources such as friends and parents. There are a number of gender differences in the use of support seeking, with girls being more likely to seek support overall, and preferring friends as sources of support. Less is known about adolescents' support seeking preferences when they are faced with different types of stressors.

Despite the conceptualisation of support seeking as being adaptive, empirical evidence for this is mixed. In particular, relationships between support seeking and mental health may be dependent on the source of support and stressor type, and may also be complicated by the emotional implications of seeking support. A number of questions remain regarding relationships between specific sources of support and mental health in response to different stressor types. Future research on adolescent support seeking should consider both the source of support and type of stressor, with particular attention to gender differences in support seeking behaviours.

2.5 Adolescents' use of isolation to cope with stress

Isolation is the opposing family of coping to support seeking, theorised to stem from appraisals of threat in response to stress (Skinner et al., 2003). There is much less extensive research on isolation as a coping strategy than the research evidence on support seeking. Further, while social isolation and withdrawal have been extensively studied in the context of peer relationships (e.g. Rubin, Coplan, & Bowker, 2009), there has been less research focus on the use of isolation in response to everyday stressors. There is evidence that adolescents may increasingly use isolation as they get older: for example, Ryan and Pintrich (1997) found that avoidance of help in the academic domain increased from 7th to 8th grade. Similarly, Donaldson et al. (2000) found that adolescents (aged 15 to 18) were more likely to cope using social withdrawal than children (aged 9 to 11). Although more evidence is needed, there may be a shift towards increased use of isolation from early to middle adolescence. As the adaptive function of

isolation is to withdraw from an unsupportive social context (Skinner et al., 2003), it is possible that changing social contexts in this period lead to increased use of isolation.

While isolation may be useful in the short-term (Seiffge-Krenke, 2011), it is generally viewed as a maladaptive coping strategy because it may prevent the development of more adaptive strategies, for example: "… a young person who retreats to her room and listens to music on her headphones whenever her parents argue may not develop the skills needed to cope with conflict in later years." (Frydenberg, 2008, p. 151). Further, the tendency to cope using isolation may lead to depletion of social resources in the long term (Skinner & Zimmer-Gembeck, 2016), thus leaving the adolescent with fewer support seeking opportunities. Not surprisingly, then girls' use of withdrawal coping in response to problems with peers at 13 years of age predicts greater use of withdrawal coping for problems with peers and parents at 17 years of age (Seiffge-Krenke & Persike, 2017), potentially indicating a long-term loss of social resources.

As for support seeking, it is possible that adolescents' use of isolation varies depending on the type of stressor. Donaldson and colleagues (2000) investigated patterns of coping (i.e. the use of multiple coping strategies) and found that the use of isolation did not vary according to stressor type. It is critical to note, however, that participants were asked to nominate their own stressor, and these stressors were then sorted into four categories (family, friend, sibling, or school stress). While this methodology allowed conclusions to be drawn about patterns of coping, it was not possible to compare preferences for isolation based on stressor type alone. As stressors were self-identified, it is possible that preferences for different ways of coping were driven by the severity of the problem, rather than the stressor type. For example, adolescents who preferred to cope by isolating themselves may have been responding to more severe problems, masking any differences according to the type of problem (i.e. academic or social stressors). There do not appear to be any studies that have directly compared the use of isolation in response to different, standardised stressor types, indicating an important gap in understanding of adolescent coping.

2.5.1 *Isolation and mental health*

While the influence of support seeking on mental health is mixed (see Section 2.4.3), a consistently negative relationship is found between the use of isolation and adolescent mental health. In studies that have examined adolescents' use of isolation strategies in response to social stressors, for example, relationships are found with social anxiety, depression, and anxious solitude (Rudolph & Zimmer-Gembeck, 2014; Shin & Ryan, 2012; Zimmer-Gembeck, 2015). Recent evidence also suggests that isolation may be particularly problematic for girls. Seiffge-Krenke and Persike (2017) found that girls who withdrew in response to family and peer stress at 13 years were more likely to experience internalising and externalising symptoms at 23 years. However, there was no relationship between withdrawal in adolescence and internalising or externalising symptomology in adulthood for males (Seiffge-Krenke & Persike, 2017). This is supported by an earlier study that reported that adolescent girls' use of behavioural and social avoidance following peer victimization was associated with social maladjustment (Visconti & Troop-Gordon, 2010). These findings show that there are both psychological and social implications for adolescents who withdraw in response to social stressors, particularly for adolescent girls.

While these results provide support for isolation being conceptualized as a maladaptive way of coping, there is also evidence for isolation and mental health having a transactional relationship. Specifically, emotional sensitivity (includes measures of depression, social anxiety, and rejection sensitivity) has been found to predict later use of isolation, and isolation in turn predicts later emotional sensitivity (Zimmer-Gembeck, 2015). Thus, the use of isolation to cope with social stressors may be both an antecedent and an outcome of poor mental health.

There is less research focus on how isolation is related to mental health when used in response to academic stressors, rather than social stressors. Existing research suggests that the use of isolation strategies (such as avoiding help or concealing problems) in the academic domain may also be problematic, however. In a study by Ryan, Patrick, and Shim (2005), early adolescents who were identified by their teachers as having the tendency to avoid seeking help

had higher levels of anxiety and lower levels of positive affect than those who were identified as being appropriate help seekers. There are also other indicators to suggest that isolation is problematic the academic context. For example, concealment of difficulties in response to academic stress is associated with disengagement from school later in the school year, and poorer academic achievement (Marchand & Skinner, 2007; Ryan, Patrick, & Shim, 2005), and in older adolescents, a negative attitude towards school (Ganim & Frydenberg, 2006). For both academic and social stressors, therefore, these findings highlight the multiple ways in which isolation is problematic for adolescents.

2.6 Chapter summary

The early to middle adolescent years are a critical time for the onset of mental health difficulties and the development of coping. Early conceptualisations of coping highlight the role of appraisals in coping, and more recently developmentally-focused frameworks have emerged. Support seeking and isolation, are two coping families that may be influenced by the concurrent psychosocial changes experienced by adolescents in this period of development. In the case of support seeking, prevalence and effectiveness may depend on the type of stressor and the source of support, thus highlighting the importance of including these factors in future study designs. In the case of isolation, less is known about prevalence across adolescence. However, the long-term implications of isolation for mental health appear to be negative.

Emerging as a new theme in coping research is the role of online sources of support. Adolescents now report using online as well as in-person sources of support, which is not surprising given high engagement with online communication in this age group (Lenhart, 2015). To date, however, we know relatively little about how early and middle adolescents use online support seeking to cope with stress, and how online support seeking is related to mental health. The next chapter in this thesis is a systematic review of studies focusing on online social support behaviours in adolescence and young adulthood, identifying benefits and limitations of this relatively new way of coping.

3. Online Social Support

This chapter is presented as a systematic review paper, which focuses on identifying benefits and limitations of informal online social support for adolescents and young adults. While the focus of this thesis is on online support seeking, this review paper also considered benefits and limitations of two additional forms of online support: perceived support and enacted support. Perceived support is the perception that support is available when required (Zhang, 2017), while enacted support refers to the process of actually giving and receiving support (Li, Chen, & Popiel, 2015). Perceived online support and enacted online support are both relevant to online support seeking, therefore, in highlighting the quality of support provided online, the conditions under which such online support is likely to be sought, and the possible influences on mental health.

To date, no papers have simultaneously considered the benefits and limitations of adolescents' perceived online support, online support seeking, and enacted online support. While a review of in-person social support in children and adolescents has been conducted in reference to forms of perceived support, support seeking, and enacted support (Chu et al., 2010), this review predated much of the research on online social support. Thus, a systematic review of perceived online support, online support seeking, and enacted online support is needed to inform future research focused on patterns of support seeking beliefs and behaviours amongst youth.

The research questions addressed in this paper were:

- What are the benefits and limitations of perceived informal online support for youth?
- What are the benefits and limitations of informal online support seeking for youth?
- What are the benefits and limitations of informal enacted support for youth?

This paper has been prepared for submission to *Personal Relationships*. Please note that American English spelling is used in this paper to conform to journal requirements.

Benefits and Limitations of Informal Online Social Support for Youth: A Systematic Review

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Abstract

Online communication technologies enable adolescents and young adults to access social support from friends and other online contacts. A systematic review was conducted to identify the benefits and limitations of informal online social support for youth, by considering studies focusing on perceived online support, online support seeking, and enacted online support. Following literature searches on five databases, 266 studies were identified. Thirty-five studies met the inclusion criteria. The findings show that youth experienced positive wellbeing outcomes if they perceived high support from online friends. Youth who feel unsupported online, or engage in higher levels of online support seeking, may experience poorer wellbeing. While youth typically viewed online support as being effective, support offered in person was more effective in ameliorating stress. Given these mixed benefits, future research should focus on identifying specific online support seeking behaviors that have positive or negative implications for development and wellbeing.

Keywords: youth, adolescent, social support, online support seeking, mental health

Benefits and Limitations of Informal Online Social Support for Youth: A Systematic Review

Across the lifespan, we rely on the support of friends, family and others to help us cope with everyday stressors, thus reducing stress and enhancing psychological outcomes (Kawachi & Berkman, 2001; Uchino, 2006). Following the rise of easily and cheaply accessible internet technologies, people are able to use these technologies to access both formal and informal sources of support online. For example, young people are increasingly using the internet to access mental health services and information (Blanchard, Hosie & Burns, 2013) and many adolescents recognize that they have been supported online in times of difficulty (Lenhart et al., 2015). College students identify that seeking social support is one of their main reasons for using social networking sites (SNSs) (Kim, Sohn, & Choi, 2011). Indeed, online communication tools have become a platform for young people to obtain various types of support, including instrumental, informational and emotional support (Trepte, Dienlin & Reinecke, 2015; Wohn, Ellison, Khan, Fewins-Bliss, & Gray, 2013). Yet we do not know what the advantages and disadvantages of using online support are. The recent emergence of this form of support seeking is apparent in that commonly used social support measures do not include assessment of online support seeking, and only recently has a targeted measure of online support seeking been developed for adults (McCloskey, Iwanicki, Lauterbach, Giammittorio, & Maxwell, 2015).

Research on online social support emerged in the mid-1990s in the context of investigations of formal computer-mediated support groups (for example, Finn & Lavitt, 1994; Weinberg, Schmale, Uken, & Wessel, 1995). However, on the whole, the field of research remains underdeveloped in the context of informal online social support, particularly among adolescents. Previous reviews of the online communication literature have provided important insights into how the use of online platforms may influence adolescent psychosocial development and wellbeing (Best, Manketow & Taylor, 2014a; Spies Shapiro & Margolin, 2014), yet focus predominantly on the general use of online communication, rather than online social support specifically.

Forms of Online Support

Research focusing on provision of in-person social support conceptualizes support in three ways: perceived support, support seeking, and enacted support (Chu, Saucier, & Hafner, 2010). It is apparent that these different forms extend to online contexts. First, perceived support is the perception that support is available if needed. Thus, *perceived* online support is the perception that support is available from online friends or contacts (Zhang, 2017). This contrasts with online support *seeking*, which refers to the behavior of using online communication to seek support from online contacts (Frison & Eggermont, 2015). The third type of support is enacted support, which focuses on the *actual* supportive behavior. Enacted online support can include the giving or receiving of support online (Li, Chen, & Popiel, 2015); as such, studies that measure this type of support analyze the quality of support provided online. In their meta-analysis of the relationships between social support and wellbeing in children and adolescents, Chu et al. (2010) concluded that of the different forms of social support, perceived social support was most strongly related to positive wellbeing. However, this review predated much of the research on the use of online platforms to seek support. It is possible that the use of support in informal online contexts has implications for in-person support, and distinct implications for wellbeing in young people.

Implications of Online Support

Existing syntheses of adolescents' general use of online communication have reported benefits and risks associated with communicating online (Best et al., 2014a; Spies Shapiro & Margolin, 2014; Yau & Reich, 2017), some of which are relevant to online support seeking. Benefits include improvements in peer relationships and belonging, enhanced self-disclosure, and increased perceptions of being socially supported (Best et al., 2014a; Yau & Reich, 2017). In contrast, costs of online communication include increased exposure to negative feedback and harm, unhealthy social comparison and social isolation (Best et al., 2014a; Spies Shapiro & Margolin, 2014). These findings for online communication suggest that there may be both benefits and limitations for youth accessing and receiving social support online.

Rains and Wright's (2016) recent narrative review of online social support studies identified several benefits and limitations of online support seeking and perceived online support. For example, the authors conclude that the perception that support is available online has positive implications for wellbeing, but support obtained in-person may be higher in quality. While the review provides important insights about benefits and limitations of online social support, much of the research reviewed focused on adults' use of online social support in the contexts of coping with illness, for example, in online support groups. It is clear, however, that many young people turn to informal online support when coping with everyday stressors (Frison & Eggermont, 2015; Zhang, 2017). Given that youth are particularly reliant on informal support in times of difficulty (Bullot, Cave, Fildes, Hall, & Plummer, 2017; Wilson, Deane, Ciarrochi, & Rickwood, 2005), the potential effects of obtaining such support online warrant investigation. Despite the potential implications of online social support for wellbeing, a systematic review of young people's use of informal online social support is absent from the literature.

The Present Study

The aim of this review is to examine the benefits and limitations of informal online social support, depending on the online support category (i.e. perceived support, seeking support, and enacted support). Specifically, the review addresses the following three research questions:

1. What are the benefits and limitations of perceived informal online support for youth?

2. What are the benefits and limitations of informal online support seeking for youth?

3. What are the benefits and limitations of informal enacted support for youth?

We begin by outlining the method used to search the literature. Next, we systematically review the empirical evidence relating to benefits and limitations of social support for youth. Following this review of study findings, we present an integrated discussion of the studies. We conclude with research recommendations to guide future investigations in this important area. All references to online social support in the proceeding sections of this review refer to informal online social support.

Method

To identify relevant research on adolescent and young adult use of informal online support seeking, searches of PsycInfo, Scopus, Web of Science, Medline, and ERIC were conducted in August, 2017. Inclusion terms included: variations of "adolescent" or "youth" with "Internet communication", "online communication", "electronic communication", "computer-mediated communication", "social networking site" or "Facebook" and "support seeking", "social support", or "help seeking". Facebook was the only SNS specified in the search due to its widespread popularity. Given the rapid changes in popularity of other SNSs, it was not feasible to identify all individually, rather the more general "social networking site" term was used. Studies of online self-disclosure were not included in the review unless they were conceptualised as self-disclosing for the purposes of seeking support. Studies of blogging were not included in the review as reasons for blogging are varied and include non-support seeking behaviours such as venting and self-expression (for a review of the benefits and risks associated with blogging see Petko, Egger, Schmitz, Totter, Hermann, & Guttormsen, 2015). Research referenced by these articles was also considered for inclusion in this review. This method generated 266 studies for title review, once duplicates were removed from the sample.

Exclusion criteria were applied to ensure that the research reviewed related to informal online social support, as shown in Figure 1. First, records not published in English or in peer-reviewed academic journals (e.g. conference presentations, theses, book chapters) were excluded. Next, articles that focused on young people's use of professional support, support groups and health-related information online were excluded, as these are usually moderated by professionals and are conceptually distinct from informally seeking support from friends and peers. Articles that investigated the relationship between offline social support and general Internet use (for example, time spent online or on SNS) were excluded, as these did not provide any insights about online social support. Studies that used a combined online and offline support measure were excluded if the reported findings did not differentiate online from offline support. Studies that focused only on populations likely to have specific online support needs were also

excluded (e.g. sexual minority youth, youth with diagnosed mental health disorders, and youth with special needs). Studies that provided a comparison between youth likely to have specific online support needs and without specific online support needs were included in the review (e.g. Ybarra, Mitchell, Palmer, & Reisner, 2015). Finally, and consistent with our aim to review studies focusing on online social support and young people, studies were excluded if the mean

Records identified in database searches (*n* = 442)

Records identified through other sources (*n* = 33)

Records after duplicates removed (*n* = 266)

Records excluded after title screen (*n* = 131)
Exclusion criteria:
- Book, dissertation, commentary or conference presentation
- Record in language other than English
- Formal online support or online support group (indicated in title)

Records retained for abstract screening (*n* = 135)

Records excluded after abstract screen (*n* = 56)
Exclusion criteria:
- Older sample (*M* > 25.5 years)
- Literature review article
- Formal online support or online support group (indicated in abstract)
- Health-related information seeking
- Offline social support and internet use
- Participants with specific needs (e.g. sexual minority youth, youth with diagnosed mental health disorders, youth with special needs)

Records retained for full text screening (*n* = 79)

Records excluded after full text screen (*n* = 44)
Exclusion criteria:
- Combined offline and online support in measure and result reporting
- Offline social support and internet use
- No measure of online support seeking or social support
- Mixed informal and formal online support seeking in measure

Records included in review (*n* = 35)

Figure 1
Flow diagram outlining study selection process for systematic review

age of the participants was over 25.5 years. The application of these exclusion criteria resulted in 35 articles being included in the review.

Systematic Review

Following the literature search and application of the exclusion criteria described above, 35 studies were included in this review. These studies were categorized according to their measurement focus on perceived support, support seeking, or enacted support. Several studies measured multiple forms of online support. As shown in Figure 2, the field of informal online social support research is relatively young, with most studies published in the past 5 years. While there has been greater research focus on perceived online support and online support seeking, research attention on enacted support appears to be increasing.
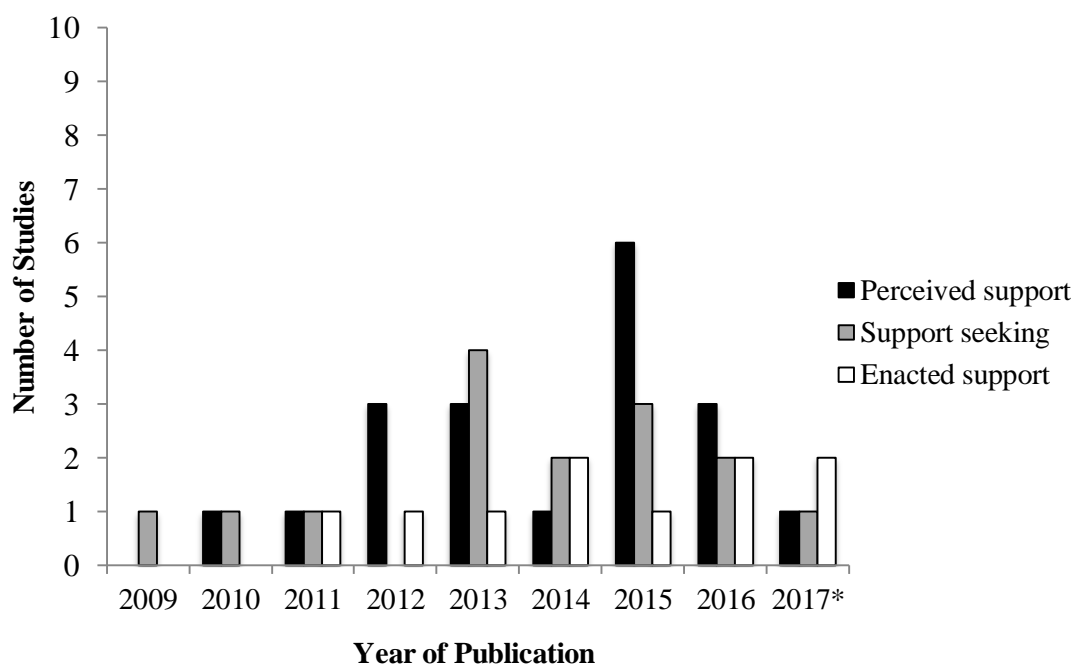
Figure 2
Year of publication of online social support studies identified in this systematic review with adolescents and young adults
Note: * = As the literature search for this review took place in August, 2017, only studies published prior to August are included in the count of studies for 2017.

The average age of participants in the studies that reported mean age of participants ($n = 25$) was 19.44 ($SD = 2.11$) years. The average sample size of all included studies was 479 participants. Study designs were mostly cross-sectional ($n = 29$), with five experimental and one longitudinal study included in the sample.

Benefits and Limitations of Perceived Online Support

As shown in Table 1, nineteen studies identified benefits or limitations of perceived online support. These studies examined the relationship between perceived online support and three key areas: mental health and wellbeing, in-person or general perceived support, and academic outcomes. The following discussion is organized around these three categories.

Perceived online support and wellbeing. Thirteen studies were identified that examined the relationship between perceived online support and one or more wellbeing variables. Wellbeing variables were defined as any measure of mental health, or outcomes that are typically related to positive functioning. All were cross-sectional in nature, ten were conducted with youth in the United States, and nine focused on Facebook as the online platform. Depression was the most common variable investigated in this group of studies.

Six studies considered the relationship between perceived online support and depression, all of which focused on Facebook as the online platform. Four of these studies reported that the general perception that support was available online was related to lower levels of depression or depressive symptoms in young adults (Cole, Nick, Zelkowitz, Roeder, & Spinelli, 2017; Wright et al., 2013) and adolescents (Frison & Eggermont, 2015, 2016). In contrast, Park et al. (2016) reported that perceived online support was related to higher levels of depressive symptoms amongst young adults, but also found that those with higher depressive symptoms received more actual support (as identified through content analysis) on Facebook. This finding suggests that there can be a discrepancy between how supported youth with higher depressive symptoms feel online and how much support they actually receive. The sixth study by McCloskey and colleagues (2015) investigated different types of online support and reported conflicting findings in young adults. Both perceived support and perceived availability of online instrumental support were unrelated to depression, but emotional support was related to higher depression. The measure of emotional support designed for this study appeared to be focused on emotional responses to receiving responses from Facebook friends (e.g. "I'm happy when people comment on my posts" is an example item) rather than the perception that support was available, which

Table 1

Summary of studies measuring perceived online support

Study	Sample Size	Country	Age	Study Type	Platform	Perceived online support measure / example item	Well-being	In-person support	Academic
								Outcome variable category	
(Best, Taylor, & Manktelow, 2015)	56	Northern Ireland	14 - 15 Males only	Q	Not specified	Thematic analysis of focus group interviews		✓	
(Blight, Jagiello, & Ruppel, 2015)	149	US	$M = 21.20, SD = 3.21$	CA	FB	Measurement of Enacted Social Support scale (Goldsmith, McDermott, & Alexander, 2000): participant rating of satisfaction with the support provided		✓	
(Burnell & Kuther, 2016)	159	US	$M = 21.87, SD = 2.08$	CS	SNS	Adapted from Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988), as used by Frison & Eggermont (2016)	✓		
(Cole et al., 2017)	256	US	$M = 19.28, SD = 1.15$	CS	Not specified	Social Network Scales (developed for this study)	✓	✓	
(Frison & Eggermont, 2015)	910	Belgium	$M = 15.44, SD = 1.71$	CS	FB	Adapted from Multidimensional Scale of Perceived Social Support (Zimet et al., 1988)	✓		
(Frison & Eggermont, 2016)	910	Belgium	$M = 15.44, SD = 1.71$	CS	FB	Adapted from Multidimensional Scale of Perceived Social Support (Zimet et al., 1988)	✓		
(Khan, Wohn, & Ellison, 2014)	690	US	Grade 9 – 12	CS	FB	Facebook friends' instrumental support, e.g. "My Facebook Friends give me ideas when I don't know what to do." (Wohn et al., 2013)			✓
(Kim & Lee, 2011)	391	US	$M = 19.57, SD = 2.88$	CS	FB	Adapted from Interpersonal Support Evaluation List (Cohen & Syme, 1985)	✓		
(Koles & Nagy, 2012)	83	Hungary	$M = 19.1$, 15 – 24 years	CS	FB	Cyber relationship motives scale: Emotional support subscale (Wang & Chang, 2010)			✓

Study	Sample Size	Country	Age	Study Type	Platform	Perceived online support measure / example item	Well-being	In-person support	Academic
(Liu & Yu, 2013)	330	Taiwan	18 – 23 years	CS	FB	Adapted from Interpersonal Support Evaluation List (Cohen & Syme, 1985)	✓	✓	
(Manago, Taylor, & Greenfield, 2012)	88	US	M = 20.64 (no SD)	CS	FB	Adapted from Interpersonal Support Evaluation List (Cohen & Syme, 1985)	✓	✓	
(McCloskey et al., 2015)	633	US	Mdn = 21	CS	FB	Facebook Measure of Social Support (developed for this study)	✓	✓	
(Park et al., 2016)	61	US	M = 19.95, SD = 1.13	CA	FB	Adapted from Social Provision Scale (Cutrona and Russell, 1987)	✓		
(Schiffrin, Edelman, Falkenstern, & Stewart., 2010)	99	US	M = 19.0, SD = 1.11	CS	Not specified	Adapted from Duke-UNC Social Support Scale (Broadhead, Gehlbach, de Gruy, & Kaplan, 1988)		✓	
(Wohn et al., 2013)	504	US	Grade 9 - 12	CS	FB	Adapted from the Child and Adolescent Social Support Scale (Malecki, Demaray & Elliot, 2000)			✓
(Wright, 2012)	283	US	M = 19.95, SD = 1.95	CS	FB	Adapted from Emotional Support Scale (Weber & Patterson, 1996)	✓		
(Wright et al., 2013)	361	US	M = 20.26, SD = 2.72	CS	FB	Adapted from Social Support Questionnaire (Sarason, Sarason, Shearin, & Pierce, 1987)	✓	✓	
(Ybarra et al., 2015)	5907	US	M = 15.8, SD = 1.6	CS	Not specified	Adapted from Multidimensional Scale of Perceived Social Support (Zimet et al., 1988)	✓		
(Zhang et al., 2015)	439	US	M = 19.49, SD = 1.45	CS	Range	Adapted from Social Influence on Physical Activity Questionnaire (Chogahara, 1999)	✓		

Note: FB = Facebook; CS = cross sectional study; CA = content analysis study; Q = qualitative study

may explain this contradictory finding. In the same study, negative support on Facebook was found to be positively correlated with depression and negatively correlated with quality of life in college students: thus indicating that there may be negative implications for wellbeing when negative feedback is received.

Three studies compared the relationship between perceived support and depression in online and offline contexts. When compared with perceived online support, in-person support was more strongly related to reduced depression symptoms in young adults (Cole et al., 2017; Wright et al., 2013). In a study with adolescents, however, both in-person and online perceived support were similarly related to reduced depression symptoms (Frison & Eggermont, 2015). This suggests that the role of online perceived support in reducing depression symptoms may be different for teenagers and young adults; however, it should also be noted that these studies used different measures of perceived online support. Frison and Eggermont (2016) also reported that perceived online support was related to decreased depression for girls, but that this relationship did not exist for boys.

Seven studies examined the relationship between perceived online support and other wellbeing indicators. All studies were conducted with young adults. These positive wellbeing outcomes included increased happiness (Kim & Lee, 2011), psychological wellbeing (Liu & Yu, 2013), self-esteem and life satisfaction (Manago et al., 2012), intentions to exercise (Zhang et al., 2015), and lower perceived stress (Wright, 2012). In contrast, McCloskey et al. (2015) found that both feeling supported online and perceived availability of online informational and instrumental support were unrelated to quality of life. Liu and Yu (2013) also found that online support was not directly related to wellbeing, but this relationship was mediated by general perceived support (i.e. feeling supported overall).

While most studies identified above have found online perceived support to be beneficial for youth, others have identified potential limitations. Two studies have investigated how perceived online support is related to victimization and its effects. In a study with a population oversampled for LGBT adolescents, Ybarra et al. (2015) found that perceived support from

friends met online was not associated with reduced odds of being victimized by peers online and in-person, and was related to higher odds of online sexual victimization. In contrast, perceived support from face-to-face friendships was associated with reduced odds of being victimized by peers online and in-person. Similarly, Cole et al. (2017) found that online support offset the negative effects of victimization for young adults; however, in-person support was more strongly implicated in reducing negative victimization effects. In a further study of young adults, Burnell and Kuther (2016) found that perceived online support was related to higher levels of SNS dependency, which is considered a measure of problematic SNS use.

Perceived support online and in-person. The perception of in-person social support is a relatively consistent predictor of wellbeing (Chu et al., 2010). As such, another focus of the literature has been to determine how online support is related to in-person or general support, as this is potentially an important affordance of online support. Eight studies investigated the relationship between perceived online support and in-person or general perceived support. Perceived in-person support is the perception that support is available in face-to-face relationships, while general social support reflects a global perception of feeling supported. All studies were cross-sectional, five focused on Facebook as the online platform, and six were conducted with youth in the United States.

The first group of studies focused on whether support perceived from online networks is related to feeling supported in-person. The perception of support being available from Facebook friends was positively correlated with general social support (Liu & Yu, 2013), and with face-to-face perceived and received support (McCloskey et al., 2015). In contrast, young adults who received negative social support on Facebook had significantly lower levels of perceived face-to-face support (McCloskey et al., 2015). Interestingly, satisfaction with social support received online was also associated with being satisfied with face-to-face support (Wright et al., 2013). Thus, far from offering an alternative source of relief for those who lack in-person support, online support appears most beneficial for those who have access to in-person support. Together, these findings indicate that youth who feel supported in-person generally also feel supported

online; however, those who have weaker in-person support networks may also be at risk of experiencing negative feedback online.

A further three studies have focused on the extent to which the online and offline support networks of young adults overlap. Blight et al. (2015) found that in-person perceived support was correlated with the perceived supportiveness of comments on online support seeking attempts. The authors surmised that there is some overlap between online and face-to-face support networks. An alternative explanation for this finding is that some people may be more effective at seeking high-quality support online. A study by Manago et al. (2012) casts further light on the degree to which online and in-person networks overlap, finding that close friends and activity connections (e.g. peers, co-workers) made up 21% and 24% of college students' Facebook networks respectively. Acquaintances and past friends made up 45% of online networks, meaning that only a small proportion of online networks are exclusively online connections. Further contextualizing these findings, there is evidence that the relationship between online and offline support networks may not be linear. Cole et al. (2017) found a curvilinear relationship between in-person and online support, such that there was less overlap in these networks for those with weaker offline support networks in comparison to those with stronger offline support networks.

Two studies identified potential limitations of perceived online social support. For example, Schiffrin et al. (2010) found that young adults were no more likely to receive online than face-to-face support. The authors suggest a new internet-driven paradox whereby young people view online communication as less useful than face-to-face communication, but use it more anyway. In focus group interviews conducted with adolescent males in Northern Ireland, adolescents reported feeling more distressed if they did not feel that their online friends supported them (Best et al, 2015). However, the same adolescents identified that having large online networks of friends increased their perceptions of being supported.

Perceived online support and academic outcomes. Three studies investigated the relationship between perceived online support and academic outcomes for adolescents. In the

first study (Koles & Nagy, 2012), secondary school students who perceived their online relationships to be sources of emotional support had higher academic self-perception. Khan et al. (2014) found that perceived instrumental support from Facebook friends was positively associated with academic collaboration online (including accessing online instrumental and informational support) in secondary school students. While further investigation is critical, these findings suggest that knowing support is available online may increase adolescents' perceptions of their academic ability.

There is also potential for online platforms to provide instrumental support when it is otherwise unavailable. For high school students who did not have a parent who had graduated from college, for example, perceived instrumental support from Facebook friends was a positive predictor of students feeling capable of applying for college (Wohn et al., 2013). However, for students who had at least one parent who had graduated from college there was no significant relationship. Thus, it appears that having access to a larger network of people online can provide assistance when this instrumental support is less likely to be available at home (Wohn et al., 2013).

Summary. Generally, the studies focused on perceived online support suggest that there are several benefits of perceived online support for youth. On the whole, the findings indicate that perceived online support has positive implications for wellbeing in youth (e.g. Cole et al., 2017; Frison & Eggermont, 2015; Liu & Yu, 2013). Perceived online support was positively related to general and in-person perceived social support (e.g. Blight et al., 2015; Liu & Yu, 2013), with potential additional benefits for youth with smaller in-person support networks (Cole et al., 2017). Finally, there is evidence to suggest that there may be academic benefits for adolescents who perceive their online networks as capable of providing instrumental and informational support (e.g. Khan et al., 2014; Wohn et al., 2013).

Perceived online support may also be limited in several ways. First, in-person perceived support may be more strongly related to wellbeing than perceived online support, suggesting strong in-person support networks are also critical for wellbeing (Cole et al., 2017; Wright et al.,

2013). Second, there were risks associated with higher levels of perceived online support, including greater SNS dependency and online sexual victimization (Burnell & Kuther, 2016; Ybarra et al., 2015). Third, if youth felt unsupported by online friends or received negative support online, they were more likely to experience distress and feel that their in-person relationships were unsupportive (Best et al., 2015; McCloskey et al., 2015). While additional research is needed to confirm these as limitations of online perceived support, potential avenues for intervention include supporting youth to effectively manage risks and build strong in-person networks.

Benefits and Limitations of Online Support Seeking

As shown in Table 2, fourteen studies examined benefits or limitations of online support seeking in youth. These studies examined the relationship between online support seeking and two key areas: mental health and wellbeing, and access to support providers. The following discussion is organized around these two categories.

Seeking support online, mental health, and wellbeing. Six studies have investigated the relationship between online support seeking and indicators of mental health in youth. Five were cross-sectional in nature, and four focused on Facebook as the online platform. The studies were conducted in five different countries.

Four studies have reported that online support seeking may be beneficial for distressed youth. Dolev-Cohen and Barak (2013) found that distressed adolescents using IMing could reduce their distressed state by venting negative emotions via written text. However, for non-distressed adolescents there was no significant change. Similarly, Zhang (2017) found that self-disclosure via Facebook of depressive symptoms for those who experienced higher stressful life events had a buffering effect. However, honest self-disclosure led to decreased life satisfaction for young adults who experienced high levels of stress. It is possible that making honest but negative disclosures online may lead to peer rejection, and that online disclosures must be strategic to obtain relief from stress (Zhang, 2017). Despite this, Moreno et al. (2011) reported that one-quarter of Facebook profiles of college students contained at least one disclosure that

Table 2

Summary of studies measuring online support seeking

Study	Sample Size	Country	Age	Study Type	Platform	Online support seeking measure	Outcome variable category	
							Well-being	Access to support
(Best, Gil-Rodriguez, Mankelow, & Taylor, 2016)	56	Northern Ireland	14 - 15 Males only	Q	Not specified	Thematic analysis of focus group interviews		✓
(Best et al., 2014b)	527	Northern Ireland	14 - 15 Males only	CS	Not specified	"Have you ever shared personal problems with online friends?"	✓	
(Blight et al., 2015)	149	US	$M = 21.20$, $SD = 3.21$	CA	FB	Thematic coding of support seeking attempts		✓
(Bonetti, Campbell, & Gilmore, 2010)	626	Australia	$M = 12.85$, $SD = 1.92$	CS	Not specified	"How often do you chat about <various topics of online communication, e.g. serious problems, trivial problems, secrets>?"		✓
(Clerkin, Smith, & Hames, 2013)	319	US	$M = 18.66$, $SD = 1.46$	L	FB	Facebook reassurance seeking scale (Smith, Hames, & Joiner, 2013)	✓	
(Dolev-Cohen & Barak, 2013)	150	Israel	14 – 18 years	CA	IMing	Count of negative expressions/emoticons in IMing conversations	✓	
(Frison & Eggermont, 2015)	910	Belgium	$M = 15.44$, $SD = 1.71$	CS	FB	"If you are feeling down or in a difficult situation… I turn to Facebook to seek help I turn to Facebook to talk with someone about my problems"	✓	
(Greenhow & Robelia, 2009)	11	US	17 – 19 years	Q	MySpace	Thematic analysis of interviews		✓
(Ivcevic & Ambady, 2013)	99	US	$M = 19.72$, $SD = 1.56$	CA	FB	Count of participants expressing emotions		✓
(Khan et al., 2014)	690	US	Grade 9 - 12	CS	FB	Use of Facebook for class-related academic collaboration, e.g. "I use Facebook to contact other students with questions related to a class or schoolwork."		✓

Table continues over page

Study	Sample Size	Country	Age	Study Type	Platform	Online support seeking measure	Outcome variable category	
							Well-being	Access to support
(Moreno et al., 2011)	200	US	$M = 20.00$	CA	FB	Identification of disclosures reflecting depression symptoms from Facebook status updates	✓	
(Oh & LaRose, 2016)	176	US	$M = 20.86, SD = 1.45$	EX	FB	Coding of sophistication of support seeking message		✓
(Wohn et al., 2013)	504	US	Grade 9 - 12	CS	FB	"I learn about college from my friends online" "I get information about college on Facebook and/or other social media sites."		✓
(Zhang, 2017)	560	Hong Kong	18 – 25 years	CS	FB	Adapted from General Disclosiveness Scale (Wheeless & Gross, 1976)	✓	

Note: FB = Facebook; CS = cross sectional study; CA = content analysis study; EX = experimental study; L = longitudinal study; Q = qualitative study

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reflected a depression symptom, and 2.5% contained enough disclosures to be considered as a major depressive episode. In a study with 14 – 16 year old adolescent males, Best, Manktelow, and Taylor (2014b) found that those who spoke to friends online about their problems had higher levels of mental wellbeing than those who did not; however it was unclear whether those who did not disclose online instead chose to seek support face-to-face or avoided disclosing their problems altogether.

While the four studies reviewed above provide evidence that online support seeking can be beneficial, one study has found that the benefits of online support seeking are contingent on perceptions of support. For adolescents who perceived a lack of support online, Frison and Eggermont (2015) found that support seeking through Facebook was directly associated with increased depressed mood. However, if emotional support was seen to be available, it predicted a reduction in depressive symptoms. For traditional face-to-face support seeking there was no relationship with depressed mood, which suggests that online and face-to-face support seeking may vary in their relationship with mental health.

The final study examining online support seeking and wellbeing investigated whether seeking support online is a beneficial coping strategy for young adults with poor social skills (and no other special needs) (Clerkin et al., 2013). Seeking reassurance on Facebook predicted decreases in trait and state self-esteem when controlling for offline reassurance seeking. Lower levels of self-esteem were then related to the perception that one was a burden and decreased sense of belonging in this study. Reassurance seeking may be considered as an example of excessive support seeking that may leave people at risk of rejection or negative feedback.

Seeking support online to access support providers. While online support seeking offers potential benefits for mental health and wellbeing, at least in some contexts, it is still unclear why youth might choose to seek support online rather than in-person. Eight studies have investigated access to wider networks of potential support providers online than in-person as a possible affordance. As shown in Table 2, six were conducted in the US, and four focused on

Facebook as the online platform. One study was experimental (Oh & LaRose, 2016) and the remaining studies employed cross-sectional study designs.

First, Blight et al. (2015) found that by seeking emotional support online, college students could seek support from close and weak ties at the same time. An earlier qualitative study also found that MySpace was used to access emotional support from old school friends during the transition to college (Greenhow & Robelia, 2009). There is evidence, however, that seeking emotional support online does not lead to increases in feeling supported in general. In a study that included content appraisal of college students' Facebook pages, Ivcevic and Ambady (2013) found that the number of emotional expressions on Facebook was unrelated to participants' level of perceived emotional support. This was despite the finding that the number of Facebook friends was positively related to perceived emotional support. Finally, Bonetti et al. (2010) found that children and adolescents who self-identified as being lonely were found to be more likely than non-lonely or socially anxious youth to discuss topics that included support seeking behaviors (including serious problems, secret things, and how they felt), which suggests that seeking support online may afford youth who have difficulties seeking support face-to-face a way of accessing emotional support.

Two studies have investigated whether online support seeking affords young people greater access to informational support. In addition to their findings regarding the relationship between perceived online support and college application efficacy discussed earlier, Wohn et al. (2013) also identified that seeking informational support online was a positive predictor of college application efficacy for students who did not have a parent who had graduated from college. In the second study, Khan et al. (2014) found that academic achievement was positively associated with accessing instrumental and informational support online in high school students. The same study also found a positive relationship between number of Facebook friends who are also offline friends and online academic collaboration, suggesting that the composition of the online network is also important. Thus, the ability to access informational support online may be an important affordance of online support seeking for high school students.

Two studies have investigated benefits and limitations of online support seeking in terms of enhancing or detracting from the support seeking process. Oh and LaRose (2016) found that young people took longer to generate an online support seeking message if the problem was severe rather than mild and was going to be posted publicly rather than privately. Critically, the longer time taken, the more sophisticated the support seeking message was. Thus, the ability to take time to compose support seeking attempts is a particular affordance of online support seeking. Best et al. (2016) conducted a qualitative study that examined the affordances and limitations of online support seeking from the perspectives of adolescent males. Adolescents in this study identified that it was easier to disclose personal problems online, as they perceived less judgment and embarrassment because the physical responses of the support provider were not visible. However, limitations were also identified, including the inability to control material once posted, meaning that there was a risk that support seeking attempts could be shared (Best et al., 2016).

Summary. The studies reviewed in this section have identified potential benefits and limitations of online support seeking for youth. A key benefit of online support seeking is that young people can reduce their distress by seeking support online (e.g. Dolev-Cohen & Barak, 2013; Zhang, 2017). However, there were several findings that suggested online support seeking has negative implications for wellbeing under particular conditions, for example, if youth did not feel supported when seeking support online (Frison & Eggermont, 2015), made honest disclosures online (Zhang, 2017), or sought reassurance online (Clerkin et al., 2013). Together, these findings suggest that there may be useful and problematic ways of seeking support online. Additional research in this area is critical, as it may inform intervention opportunities to support young people to seek support online effectively.

Another potential benefit of online support seeking is that wider networks of support providers can be accessed online than in-person (Blight et al., 2015; Greenhow & Robelia, 2009; Wohn et al., 2013). However, one study found that accessing support online did not lead to feeling supported in general (Ivcevic & Ambady, 2013), which may be indicative of online

support being less effective in reducing stress than in-person support (Rains et al., 2016). It also appears that there may be affordances and limitations of communicating online that are relevant to seeking support online. For example, youth identified that they felt less embarrassed when seeking support online (Best et al., 2016), and were able to take more time to compose support seeking attempts (Oh and LaRose, 2016). However, adolescents were also concerned about their privacy after seeking support (Best et al., 2016).

Benefits and Limitations of Enacted Online Support

As shown in Table 3, ten studies focused on benefits and limitations of enacted online support. Seven examined enacted (receiving) support, and four measured enacted (giving) support (one study by Li et al. (2015) measured both giving and receiving support). The following review is organized around these two categories.

Enacted (receiving) support. Seven studies examined potential affordances and limitations of the receipt of support online, by measuring the quality of support received in response to online support seeking attempts. As shown in Table 3, six of these studies were conducted using Facebook as the online platform, and all studies were conducted with young adult populations. Two categories of studies were identified in the review of enacted receiving support studies: receiving support and mental health or wellbeing, and the quality of support received online.

Four studies have investigated relationships between the frequency of receiving support online and wellbeing outcomes. Zhang (2017) found that receiving support on Facebook was positively related to life satisfaction and general perceived support, but unrelated to depression in college students. In the second study, there was no relationship between receiving support on Facebook and general perceived support (Li et al., 2015). In the third study, Park et al. (2016) found that youth with higher depressive symptoms received more actual support on Facebook in response to their negative disclosures, but perceived that they received less support. The fourth study, by Moreno et al. (2011), examined references to depression symptoms within Facebook status updates. It was reported that college students made more references to depressive

Table 3

Summary of studies measuring enacted online support

Study	Sample Size	Country	Age	Study Type	Platform	Enacted online support measure / example item	Enacted support category Receiving	Giving
(Blight et al., 2015)	149	US	$M = 21.20$, $SD = 3.21$	CA	FB	Thematic coding of support seeking attempts and participant identification of most supportive comment	✓	
(High, Oeldorf-Hirsch, & Bellur, 2014)	84	US	$M = 19.91$, $SD = 1.19$	EX	FB	Willingness to provide support, e.g. Extent to which they would "Express sorrow or regret for her situation". Intent to provide quality support, e.g. "I could be counted on to effectively console her when she was upset"		✓
(Li et al., 2015)	566	US	$M = 19.40$, $SD = 1.91$	CS	FB	Frequency of enacted received and provided support e.g. "How often do you receive help from FB friends to deal with stresses and difficulties; how often do you help FB friends deal with stresses and difficulties"	✓	✓
(Moreno et al., 2011)	200	US	$M = 20.00$, No SD	CA	FB	Count of responses to depression references on FB	✓	
(Park et al., 2016)	61	US	$M = 19.95$, $SD = 1.13$	CA	FB	Responses to positive and negative disclosures on FB coded as providing emotional support or not	✓	
(Rains, Brunner, Akers, Pavlich, & Goktas, 2016)	82	US	$M = 21.61$, $SD = 3.22$	EX	IMing	Comparison of self-efficacy, worry and uncertainty after support provided in-person and via IMing	✓	
(Rozzell et al., 2014)	88	US	$M = 20.14$	CS	FB	Participant-rated effectiveness of support received in comments on Facebook posts, e.g. helpful/not helpful, encouraging/not encouraging	✓	
(Stefanone, Kwon, & Lackaff, 2012)	49	US	$M = 20.8$, $SD = 1.7$	EX	FB	Count of how many people responded to requests for instrumental help on FB, quality measured by amount of help provided by each contact		✓
(Zhang, 2017)	560	Hong Kong	18 - 25 years	CS	FB	Frequency of enacted received support (Li et al., 2015)	✓	
(Ziegle & Reinecke, 2017)	870	Germany	$M = 25.16$, $SD = 7.26$	EX	FB	Willingness to write a comment on status update; willingness to send a private message in response to a status update		✓

Note: FB = Facebook; IMing = instant messaging; CS = cross sectional study; CA = content analysis study; EX = experimental study

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symptoms if they also received comments on these references. Thus, receiving support online may influence future online support seeking behavior (Moreno et al., 2011); however, the wellbeing implications of this are unknown.

Three studies have focused on the quality of support received online: two using youths' ratings of the quality of support they received online, and one measuring stress responses after obtaining support online and in-person. Rozzell et al. (2014) found that young adults rated the support they received online from both close and non-close ties as being equally effective. However, Blight et al. (2015) reported that when young adults rated the *most* supportive comments they received online, these tended to come from close rather than weak ties. Perceived supportiveness of comments was also related to offline perceived support, which suggests that those who access close friends and family online as well as in-person may feel more supported than those who only access this support online (Blight et al., 2015). In an experimental study that compared the receipt of online and face-to-face support, Rains et al. (2016) reported that those who received support via IMing experienced more worry and uncertainty than those who received the same support in-person. Although the support was provided by a stranger in both conditions, this indicates that support received online was less useful in ameliorating stress than that received in-person.

Enacted (giving) support. Four studies focused on the provision of support online. All studies were conducted with young adult populations, and focused exclusively on Facebook as the online platform for support giving (see Table 3). These studies examined factors that influence the provision of support online, and potential affordances for the support provider.

Three of the four studies focused on giving support online consider the factors that influence the provision of support online. Together, these studies identify potential conditions under which online support can be beneficial or limited. First, High et al. (2014) manipulated a Facebook profile to disclose negative emotions in one, two, or three different ways (representing low, medium and high emotional bandwidth), and asked young adults to rate the likelihood of them providing support to the profile owner. They found that young adults would provide less

emotional and network support in response to the high emotional bandwidth profile than the medium and low emotional bandwidth profiles. Further, youth with high levels of Facebook community and a preference for online interaction were more likely to provide support. Females were more likely to identify that they would provide quality support in response to high emotional bandwidth Facebook profiles than males. In a second study (Ziegle & Reinecke, 2017) that asked young adults to imagine that one of their Facebook friends was asking for support, participants were less likely to provide public support if the request for support was negative, but were more likely to provide support in private and if they were a close friend. These findings suggest that the display of negative emotion may result in support providers giving less emotional support, and highlight a potential important difference between the provision of emotional support in public and private online spaces. In the third study, Stefanone et al. (2012) found that almost 80% of requests for instrumental help were ignored. However, as youth who had higher social status were more likely to be given support, social status was an important predictor of whether college students would receive instrumental support from Facebook contacts.

The final study focused on support provision considered the experience of the support provider (Li et al., 2015). The provision of support was conceptualized as contributing to perceived support for the support provider because of increasing the likelihood of receiving support in return in this study. However, findings indicated that providing support on Facebook was unrelated to general perceived support. The authors argue that while support is exchanged on Facebook, it does not appear to equate to the support provider feeling more supported overall.

Summary. The review of studies focusing on enacted online support have enabled potential benefits and limitations of online support to be identified. Indeed, an important contribution of enacted support studies was to provide insights about the quality of support received online. While the findings suggest that young people viewed support provided online as effective and supportive (Blight et al., 2015; Rozzell et al., 2014), experimental evidence suggests that support provided in-person was more effective in reducing worry and uncertainty

associated with stress (Rains, et al., 2016). Further, the quality of support provided online may be influenced by the strength of the bond between the support provider and the support seeker (Blight et al., 2015), suggesting that the source of online support is an important factor to consider in future studies of online support quality.

While some studies focusing on the provision of online support did not directly investigate benefits or limitations of online support, they provided insights about the factors that influence the likelihood of a young person providing support online. Factors such as the tone of the support-seeking attempt (i.e. how negative the request for support was), the social status of the support seeker, and the nature of the online space (public or private) appear to influence the likelihood of young people providing support online (High et al., 2014; Stefanone et al., 2012; Ziegle & Reinecke, 2017). Identification of other factors that may improve the likelihood of support being provided online is an important area of future research.

General Discussion

The aim of this review was to identify benefits and limitations of online social support for youth, as no existing review has considered young people's use of informal online social support. We identified 35 studies that considered benefits and limitations to youth of forms of online support: perceived online support, online support seeking, and enacted online support. These studies reflect an emerging field of study that is diverse in its focus, and several potential benefits and limitations were identified for each form of online support. We provide an integrated discussion of these benefits and limitations in the following section. This is followed by a discussion of four methodological considerations and future research directions emerging from these considerations.

Benefits and Limitations of Online Support

Online support was frequently associated with positive wellbeing outcomes for youth. For example, perceived online support was related to reduced depressive symptoms (e.g. Cole et al., 2017; Frison & Eggermont, 2016), increased happiness (Kim & Lee, 2011), and self-esteem (Manago et al., 2012). Perceived online support and seeking support online may also benefit

youth wellbeing by reducing distress or offsetting negative effects of negative experiences (Cole et al., 2017; Dolev-Cohen & Barak, 2013; Zhang, 2017). However, the studies reviewed in this paper also reveal that wellbeing benefits of online support may be contingent on several factors. First, if youth seek support online but feel unsupported, they are more likely to experience depressive symptoms (Frison & Eggermont, 2015). This highlights the importance of perceived support in online contexts. Second, the tone and online context of the support-seeking attempt influenced the likelihood of receiving support online. Young people who displayed negative emotions were less likely to receive emotional support online, especially in public online spaces (High et al., 2014; Ziegle & Reinecke, 2017). Thus, youth may require specific support seeking strategies to receive quality support online. This reflects recent findings that suggest adolescents require specific social skills to have successful online interactions (Reich, 2017). Third, there were risks associated with online support, such as increased likelihood of victimization (Ybarra et al., 2015), and development of SNS dependency (Burnell & Kuther, 2016). Taken together, these findings suggest that there are benefits and limitations of online support for youth wellbeing.

This review also identified potential benefits and limitations for youths' access to support. One of the significant differences between online and face-to-face social support is that mobile internet devices allow young people potentially constant access to online social support, while face-to-face support relies on physical proximity to others. Thus, a benefit of online support may be that young people have increased opportunities to seek support. In support of the rich-get-richer hypothesis (Gross et al., 2002), young people with strong in-person networks also appear to enjoy supportive online networks (e.g. McCloskey et al., 2015; Liu & Yu, 2013). These findings suggest that offline social skills may transfer to online platforms. Other studies included in this review instead provide support for the social compensation hypothesis (Valkenburg, Schouten, & Peter, 2005), as online platforms appear to offer additional support avenues for youth with smaller in-person networks (Cole et al., 2017), limited access to informational support in-person (Wohn et al., 2013), or those who have difficulty seeking

support in-person (Bonetti et al., 2010). Taken together, these findings suggest that there are some social skills that directly transfer from offline to online interactions, but others that are valuable in online interactions specifically (Reich, 2017).

While increased access to support appears to be an obvious benefit of online support, there are potential limitations associated with youth having increased access to support. For example, there was a positive relationship between perceived online support and SNS dependency (Burnell & Kuther, 2016), which suggests a propensity for some youth to become over-reliant on online support. Concerns about the implications of youth having relatively constant contact with their friends has similarly been identified in earlier research on youths' use of online communication (Davis, 2012; Spies Shapiro & Margolin, 2014). Further, as increased requests for support were unrelated to perceptions of support (Ivcevic & Ambady, 2013) and reassurance seeking predicted decreased self-esteem (Clerkin et al., 2013), less regulated use of online support seeking may be detrimental for youth. As such, a critical area of future research will be to determine the long-term implications of frequent use of online support seeking for youth.

Several studies reviewed in this paper have made a comparison between online and in-person support. Collectively, the findings suggest that in-person support is more important than online support. For example, perceived in-person support had a stronger relationship with mental health than perceived online support, and was more protective against the negative effects of victimization (Cole et al., 2017; Wright et al., 2013). Further, support received online resulted in higher levels of worry and uncertainty than support provided in-person (Rains et al., 2016). These limitations may provide some explanation about why young people prefer in-person support seeking over seeking support online (Rife, Kerns, & Updegraff, 2016). However, these limitations also indicate that online support should not replace in-person support, and youth who excessively rely on online support may be vulnerable.

Methodological Issues and Future Research Directions

Our analysis identified several important methodological trends. First, most studies (65.71%) were conducted with young adults, usually with college students over 18 years of age. Of the twelve studies that included school-aged adolescents, only one study identified that their sample included adolescents under the age of thirteen years (Bonetti et al., 2010). Yet, adolescence is viewed as beginning at age 10 (Sachs, 2003), and the concurrent academic and social changes driven by the transition to secondary school represent a fertile ground for investigating support seeking attempts in early adolescents. Given that recent figures show that 72% of 12 – 15 year olds have a social media profile (Office of Communications, 2016), this indicates a critical need for increased research attention on early adolescent populations.

Second, most studies (74.29%) examined the use of a specific platform for online social support, and of these, Facebook was the platform specified by all except three studies. As young people increasingly use a diverse array of platforms to communicate online, such as Instagram, Snapchat, and WhatsApp (Lenhart, 2015; Lenhart et al., 2017), it is highly likely that social support is sought and enacted on other social media platforms. In fact, support may be sought on multiple platforms simultaneously. It is therefore important for future research to include multiple other platforms (Rains & Brunner, 2015) to provide insights into general patterns of online support seeking. Studies that examine online support through specific platforms can also extend findings regarding the nature and implications of support sought and provided in private compared to public online platforms.

Third, many studies on online social support have employed correlational designs (see Clerkin et al., 2013 and Rains et al., 2016 for exceptions). This is important when studying patterns of real-life phenomena and behaviors that are not easily manipulable. However, as a result, the direction of effects between online social support and perceived support or wellbeing outcomes remains ambiguous. For example, Frison and Eggermont (2015) and McCloskey et al. (2015) found that seeking support online was related to poorer mental health, but it is unknown whether seeking support online results in poorer mental health, suggesting poor quality support,

or if youth who experience poorer mental health are more likely to seek support online. Such youth may already have a greater need for support (Chu et al., 2010), and may also find it easier to self-disclose in online settings (Valkenberg & Peter, 2007). While it is possible that this relationship is bidirectional, prospective designs are needed to investigate this possibility. To complement the existing research, for example, longitudinal studies could be used to track age of onset of mental health challenges and support seeking across childhood and adolescence. Age could also be investigated as a potential moderator of the relationship between online support and wellbeing.

Fourth, evidence from studies of in-person support seeking show that adolescents seek support from different sources according to the type of stressor that they are facing (Boldero & Fallon, 1995; Wilson et al., 2005), and that relationships between seeking support from these different sources and mental health vary (Visconti & Troop-Gordon, 2010). Thus, it is important that studies of support seeking consider the role of stressor type by examining the types of stress that young people seek support for. Many studies included in this review identified general problems or issues in their measures of support seeking, such as personal problems or negative emotions (see Zhang, 2017 for an exception). While these studies lay an important foundation for research in this area, future studies can extend these findings by examining whether online support seeking is beneficial or problematic when used in response to different stressor types.

Fifth, most studies in this review measured online and in-person support without specifying the specific sources of support. For example, while online support was related to in-person support (e.g. Liu & Yu, 2013), it is unknown whether this relationship varies according to the source of face-to-face support. Future studies will ideally examine online support in conjunction with support from various sources (e.g. parents, friends, peers) in-person. For example, it is unknown whether the tendency to seek support from parents is reduced by adolescents turning to online sources of support. Thus, it will be particularly important to compare outcomes of online support for youth who use online support as an extension of offline support networks with those who use it in place of in-person support. Further, while young

people mostly communicate with their existing friends online (Pempek, Yermolayeva, & Calvert, 2009; Reich, Subrahmanyam, & Espinoza, 2012), it is unknown who they turn to for informal support sources online. While it is assumed that they would mostly seek support from existing friends online, adolescents and their parents are also known to communicate online (Doty & Dworkin, 2014). Future studies should examine the sources of support available to youth via online platforms, and the benefits and limitations of accessing support online from these various sources.

Finally, a critical area of future research is to examine how online support seeking influences the development of coping in adolescence. Early, middle, and late adolescence are salient periods for the development of coping, as developmental changes drive changes in coping (Skinner & Zimmer-Gembeck, 2016). For example, the increased importance of peer relationships and expansion of social networks in early adolescence (Skinner & Zimmer-Gembeck, 2009) is expected to drive an increased reliance on peers for support (Crystal, Kakinuma, DeBell, Azuma, & Miyashita, 2008). Adolescents should also become more capable of selecting the appropriate source of support for particular problems (Zimmer-Gembeck & Skinner, 2011). Online communication has the potential to influence these developments in coping by increasing access to friends and providing access to wider social networks than those avaliable in-person. Thus, longitudinal studies are required to investigate whether online support seeking influences the development of coping in adolescence.

Limitations of the review

It is important to acknowledge that the current systematic review had a necessary but limited scope. While it makes an important contribution by reviewing studies of online perceived support, support seeking, and enacted support, there are several bodies of related literature that may include findings considered relevant to knowledge of young people's use of online support in specific contexts. For example, massively multiplayer online games are platforms on which social support in transacted (O'Connor, Longman, White, & Obst, 2015), and comments on blog entries can contribute to feeling supported by an online community (Petko et al., 2015).

Conclusion

Seeking social support is an important coping strategy for young people, and with their ubiquitous uptake of online communication, this has become a new platform for access to social support. While the field of young people's use of online social support is emerging, a number of benefits and limitations have already been identified. Key benefits include positive wellbeing implications if young people feel supported online, and the ability to use online support to reduce distress. Further, online platforms allow youth access to support from large networks of potential support providers. There are also significant limitations associated with online social support. For example, seeking support online can be related to poorer mental health and youth may be less likely to receive support when making negative disclosures online. In-person support also appears to be more important for youth wellbeing and more effective in reducing the negative effects of stress. This review has identified several key areas that require future research attention in this emerging field of study.

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4. The Current Study

The literature review presented in Chapters 2 and 3 identified a number of areas in need of further research. In this brief chapter, this literature review is related to the aims of the thesis and research questions. Further, the empirical papers in which each aim is addressed are identified.

4.1 Purpose of the study

While it is apparent that adolescents seek informal support online, relatively little is known about this behaviour. It is both theoretically and practically important to investigate how informal online support seeking may function as an adaptive or maladaptive response to everyday stressors. Thus, the overarching purpose of this doctoral thesis was to investigate the informal online support seeking behaviours of early and middle adolescent girls. The aims of the thesis originated from identified gaps in the existing research literature. These gaps are briefly summarised below to justify each of the study aims.

First, there are several factors related to adolescents' preferences for online support seeking that warrant further investigation. For example, it is unknown whether adolescents prefer to use informal online support seeking in response to different types of daily stress (e.g. academic and social stressors). Further, no study to date has investigated age-related differences in adolescents' use of informal online support seeking. As a result, the first thesis aim was to identify whether girls' use of support seeking (from parents, close friends, peers, and online) and isolation varies with age or according to the type of stressor (academic or social) they are exposed to.

Second, the extent to which online support seeking is used alongside traditional in-person sources of support is also unknown. Findings from online communication research more broadly suggest that adolescents' use of online communication may displace time spent with parents (e.g. Lee, 2009; Subrahmanyam & Greenfield, 2008). Given parental support is particularly important for adolescent wellbeing (Helsen et al., 2000; Schonert-Reichl & Muller, 1996; Seiffge-Krenke & Persike, 2017), it is critical to investigate how online support seeking is related to seeking

support from parents in particular. Thus, the second thesis aim was to (i) investigate the extent to which girls rely on informal online sources of support in relation to traditional, in-person sources of support (i.e. parents, friends, and peers) and isolation, and (ii) determine the relationships between online support seeking and these traditional ways of coping.

Third, while the perception that support is available online is usually associated with positive wellbeing outcomes for adolescents and young people (e.g. Kim & Lee, 2011; Liu & Yu, 2013; Manago et al., 2012), there is preliminary evidence to suggest that seeking support online is related to negative mental health outcomes, such as depression (Frison & Eggermont, 2015). However, research focusing on the online support seeking behaviours of early to middle adolescents is currently very limited, and it is unknown how online support seeking is related to other measures of mental health, such as anxiety and stress. Accordingly, the third thesis aim was to identify the relationships between online support seeking (and the other ways of coping) and depression, anxiety, and stress. Further, as adolescents who isolate themselves may have less access to, or avoid in-person support, it is possible that these adolescents may seek support online to replace in-person support. Given the negative relationships between online support seeking and mental health, and between isolation and mental health, this combination of coping strategies may be particularly problematic. Thus, this thesis will also investigate whether the combination of online support seeking and isolation (i.e. avoidance of in-person support) is related to poorer mental health.

Finally, adolescents' perspectives of informal online support seeking have received little research focus to date, and are likely to provide important insights into their experiences and views on using informal online social support. For example, while Rains and Wright (2016) identified a number of reasons why adults seek support online (especially in response to health-related stress), we do not yet know the reasons why adolescent girls elect to seek informal support online for daily stressors. Further, while the systematic review of online social support literature (see Chapter 3) identified that there were critical limitations of seeking support online, it is unknown whether adolescent girls are cognizant of the limitations associated with this way

of coping. Thus, the fourth thesis aim was to explore adolescent girls' perceptions of the affordances and limitations of online support seeking.

4.2 Research Questions

The research questions that were developed to address the four aims outlined above are identified in Table 4.1.

Table 4.1
Aims and research questions of the thesis

Aims	Research Questions	Paper
To identify whether adolescent girls' preferences for online support seeking (and seeking support from parents, friends, and peers, and isolation) vary according to stressor type and age.	Which ways of coping do adolescent girls prefer for academic and social stressors? Are there grade differences in girls' preferences for ways of coping?	
(i) To identify the extent to which girls rely on online sources of support in relation to traditional, in-person sources of support (i.e. parents, friends, and peers) and isolation. (ii) To examine the relationships between online support seeking and seeking support from traditional, in-person sources of support (i.e. parents, friends, and peers) and isolation.	To what extent do adolescent girls rely on online sources of support in relation to traditional, in-person sources of support (i.e. parents, friends, and peers) and isolation? How do traditional ways of coping predict online support seeking?	Paper II
To identify the relationships between online support seeking (and seeking support from parents, friends, and peers, and isolation) and depression, anxiety, and stress.	Are the sources of support that adolescent girls intend to use to cope with academic and social stressors related to depression, anxiety and stress? Is the intended use of isolation by adolescent girls to cope with academic and social stressors related to depression, anxiety and stress? Does the intended use of isolation moderate the relationship between online support seeking and depression, anxiety and stress in adolescent girls?	Paper III
To explore adolescent girls' perceptions of the affordances and limitations of online support seeking.	How frequently do girls report seeking support online? Why do adolescent girls seek support online? What are the affordances and limitations of online support seeking identified by adolescent girls?	Paper IV

5.   Methods

In this chapter, a description of the integrated methods is presented. More specific descriptions of methods are also provided in the Methods sections of Papers II, III, and IV. While some repetition is inevitable, this chapter provides additional detail about participants measures, and procedures, and an overview of the data analysis plan across the entire thesis.

5.1 Participants

Participants were 186 girls (M age = 13.64 years, SD = 1.03) from four independent girls' schools in Sydney, Australia. Their ages ranged from 10.29 years to 15.33 years. The early younger adolescent group included 78 girls in Grade 7 (M age = 12.55 years, SD = 0.46) and the middle adolescent group included 108 girls in Grade 9 (M age = 14.43 years, SD = 0.40). All girls completed a survey, while a subsample of 31 girls participated in phone interviews.

Schools were recruited for the study using convenience sampling. Table 5.1 reports the background information about each school, including the Index of Community Socio-educational Advantage (ICSEA) value. The ICSEA combines student factors (such as parent occupation and education) and school factors (such as location and proportion of indigenous students) to measure a school's educational advantage (ACARA, 2015). The standardised average ICSEA score is 1000, with scores below 1000 indicating that students at the school experience educational disadvantage, while scores above 1000 imply students are relatively advantaged. All four schools were in the upper quartile on the ICSEA, indicating that the students were relatively socioeconomically advantaged in comparison to other students in Australia (ACARA, 2015). This was a particular population of interest for two reasons. First, girls from advantaged socioeconomic backgrounds appear to be at greater risk of experiencing poor mental health in comparison to their less advantaged peers (Luthar & D'avanzo, 1999; Lyman & Luthar, 2014; West & Sweeting, 2003). Second, adolescents from higher income families may have greater access to a smartphone, tablet, or laptop computer for personal use (Lenhart, 2015), and may therefore have greater opportunity to interact online.

Table 5.1
Summary of participating schools

School	Enrolments	ICSEA value	Indigenous students	LBOTE students
1	1159	1174	1%	40%
2	947	1139	0%	43%
3	473	1144	0%	31%
4	1043	1147	0%	52%

Note: ICSEA = Index of Community Socio-Educational Advantage; LBOTE = language background other than English

Table 5.1 also shows that, on average, 41.5% of students in these four schools had a language background other than English. While this appears to be a high proportion of students, it is indicative of the typical level of cultural diversity in the Sydney urban area, where 38.3% of households have a language background other than English (Australian Bureau of Statistics, 2011). Importantly, linguistic diversity is not a marker of low socioeconomic status in the current context. As shown in Table 5.2, response rates varied between the four participating schools, with an overall response rate of 21.20% for Grade 7 and 30.59% for Grade 9.

Table 5.2
Response rates for survey

School	Grade 7			Grade 9		
	Students enrolled	Participated in survey	Response rate (%)	Students enrolled	Participated in survey	Response rate (%)
1	122	11	9.02	108	36	33.33
2	85	42	49.41	94	52	55.32
3	35	5	14.29	31	3	9.68
4	126	20	15.87	120	17	14.17
Total	368	78	21.20	353	108	30.59

5.2 Measures

5.2.1 *Adolescent Coping with Academic and Social Stressors Scale*

The scale used to measure coping in this project was adapted from the Multidimensional Measure of Coping (Skinner, Pitzer, & Steele, 2013) and the Motivational Theory of Coping Scale–12 (MTC-12) (Zimmer-Gembeck, Skinner, Morris, & Thomas, 2012). These scales measure coping responses to academic and social stressors, respectively. Thus, they were combined and modified to align with the project aim of investigating how adolescent girls use online support seeking in response to different types of stressors.

Participants were presented with four vignettes representing everyday academic stressors and four representing everyday social stressors (see Appendix A). Three of the academic stressor vignettes were adapted from the Multidimensional Measure of Coping (Skinner et al., 2013), with minor changes made to wording. The fourth original vignette, *"When I run into a problem on an important test"* was omitted from this measure, as students are unlikely to be permitted to seek support from parents, friends, peers, or online while completing an exam. This vignette was replaced with a new academic stressor vignette, *"You are having trouble keeping up with the amount of study and homework you have to do"*. This particular stressor was included because the amount of time spent on homework is a salient stressor for young adolescents (Brown, Nobiling, Teufel, & Birch, 2011).

The four social stressor vignettes were adapted from the MTC-12 (Zimmer-Gembeck et al., 2012). In the original MTC-12, participants were presented with hypothetical stressors using video excerpts of young people experiencing the stressful situation. To ensure consistency with the academic stressor vignettes, participants in this study were presented with brief written vignettes describing the stressor (e.g. *"You were excluded from an activity by your classmates"*). The benefit of a vignette-based measure of coping is that it allows the researcher to standardise exposure to each stressor type (Pitzer & Skinner, 2017; Zimmer-Gembeck, 2016). This standardisation of stressors also allows researchers to compare how participants prefer different ways of coping in response to the same stressor by controlling the stressor (Zimmer-Gembeck & Skinner, 2011). This was particularly salient in the present study, where one of the aims was to investigate whether adolescent girls prefer in-person or online sources of support.

For each of the eight vignettes, participants rated how much they would use five ways of coping on a 5-point scale between 1 (*not at all*) and 5 (*definitely*). The five ways of coping were seeking support from parents, close friends, and peers, online support seeking, and isolation. This measurement approach was adapted from the MTC-12 (Zimmer-Gembeck et al., 2012). While the MTC-12 asks participants to rate how much they would use twelve ways of coping, only two ways of coping (support seeking and isolation) were retained for this study. The

support seeking response was also modified to allow the measurement of seeking support from parents, close friends, and peers/classmates, and online support seeking. Thus, for each of the eight vignettes, participants were asked:

- *How much would you go and seek the support or help of a parent?*

- *How much would you go and seek the support or help of a close friend?*

- *How much would you go and seek the support of a classmate (not a close friend)?*

- *How much would you go online or text to talk to someone about it?*

- *How much would you want to go off to be by yourself (or be alone)?*

Close friends were distinguished from peers as sources of support as children and adolescents perceive these as distinct sources of support (Malecki & Demaray, 2002). Further, online support seeking was measured without specifying a particular online platform. As identified in Paper I, young people use a range of platforms to communicate online, and may use multiple platforms simultaneously (Lenhart, 2015; Lenhart et al., 2017). This broad conceptualisation of online support seeking allows all online support seeking intentions to be captured, rather than confining measurement to a specific online platform (e.g. Facebook). Prior to commencing the survey, a verbal instruction was given to all participants to inform them that the online support seeking questions referred to asking for help or advice from friends and peers online.

Scores for each way of coping were averaged across the four academic stressor vignettes, to create an average score for each way of coping with academic stressors. This was repeated for the social stressor vignettes. Internal consistencies (Cronbach's alpha) for each way of coping with academic and social stressors are shown in Table 5.3.

Table 5.3

Internal reliabilities for Adolescent Coping with Academic and Social Stressors Scale

Way of coping	Stressor type	Cronbach's alpha
Seeking support from parents	Academic	.822
	Social	.768
Seeking support from friends	Academic	.797
	Social	.718
Seeking support from peers	Academic	.793
	Social	.651
Online support seeking	Academic	.837
	Social	.816
Isolation	Academic	.880
	Social	.875

5.2.2 *Depression, Anxiety, and Stress Scales – Youth Version*

The Depression, Anxiety, and Stress Scales (DASS) is a 42-item measure that was designed to measure three negative emotional states: depression, anxiety, and stress/tension experienced in the preceding week (Lovibond & Lovibond, 1995). The DASS was designed to have minimal overlap between the depression and anxiety subscales (Lovibond & Lovibond, 1995). A critical feature of the DASS is the stress/tension subscale, which combines items such as difficulty relaxing, tension, and irritability (Szabo, 2010). This subscale emerged during the development of the DASS, and distinguishes the measure from others that measure depression and anxiety only, such as the Beck Depression Inventory and Beck Anxiety Inventory (Lovibond & Lovibond, 1995). A short version of the DASS (DASS-21) has also been developed and both are reliable and valid measures in adult populations (e.g. Crawford & Henry, 2003; Taylor, Lovibond, Nicholas, Cayley, & Wilson, 2005). While the DASS-21 has been used in research with adolescents (Einstein, Lovibond, & Gaston, 2000), it has been recommended that the DASS or DASS-21 are not used with children or adolescents under the age of 14 years due to the terminology in some of the items (Lovibond, 2014).

To address this limitation, Szabo and Lovibond (2013) have simplified the original DASS-21 into a Depression, Anxiety, and Stress Scales Youth Version (DASS-Y). The DASS-Y has three subscales, measuring the negative emotional states of depression, anxiety and stress/tension with eight items in each subscale. Participants used a 4-point Likert scale where 0

= *not true of you* and 3 = *very true of you* to rate how much they had experienced each symptom in the preceding week. Items in each subscale were added to give a severity rating for each emotional state (0 – 24), with higher scores indicating an increased severity of the emotional state being experienced in the past week. The DASS-Y has been validated with children and adolescents in grades 7 – 12 (*n* = 2,321), with the three-factor model of depression, anxiety, and stress/tension providing an acceptable fit to the data (Szabo & Lovibond, 2013). Internal reliabilities for the study sample were α=.90 for the depression subscale, α=.87 for the anxiety subscale, and α=.86 for the stress subscale.

5.2.3   *Frequency of online support seeking*

A 3-item measure was used to measure frequency of online support seeking. Participants were asked how often they (a) chatted to friends online, (b) sought support online from friends for academic stressors, and (c) sought emotional support from friends online. Frequency was reported on a 6-point Likert scale where 1 = *not at all* and 6 = *several times a day*. Participants were also asked to identify the platforms that they use to communicate online generally. This data was reported in Paper IV as background information, and was also collected to inform participating schools about their students' online communication use.

5.2.4   *Interview*

To determine adolescent girls' perceptions of the benefits and limitations of online support seeking, a representative subsample of 31 girls was invited to complete a one-on-one semi-structured interview. Girls were selected because they had varying frequencies of online support seeking, from low (once per week or less) to high (once per day or more). Girls who did not intend to use online support seeking for academic or social stressors based on the survey self-report data were excluded from the pool of possible interview participants. The interviews were conducted by phone, recorded and transcribed verbatim.

At the beginning of each interview, the interviewer identified that the focus of the interview was on how people use technology to ask for help, advice, and emotional support. Participants were asked about the types of problems or issues they sought support for from their

friends online, the modes of support seeking they most preferred, and why. They were also asked about any problems or difficulties that they had experienced when seeking support online. The interview questions can be found in Appendix B.

5.3 Procedure

Ethics approval for this project was granted by Macquarie University (see Appendix C). Approval was also obtained from the Principal of each participating school. Paper copies of parent and student consent forms were distributed to schools to distribute to parents and students. Written parent and student consent was required for participation in the project, and verbal assent was also obtained on the day of data collection. The candidate administered paper-based surveys in pastoral or class times nominated by the schools. A survey protocol was used in each school to ensure that all participants received identical instructions to support survey completion.

On the consent forms (see Appendix D and E), participants were asked if they would be interested in being selected for a phone interview. Those who gave consent formed a pool of participants from which potential interviewees were selected. Five participants who were contacted to be interviewed elected not to participate in the interviews. Interviews were conducted until a saturation point was reached and no new themes emerged from the data ($n = 31$).

5.4 Analysis plan

Analyses were conducted separately for each empirical paper. Table 5.4 provides an overview of the measures and data analysis plan of this thesis. More specific detail about statistical and qualitative analyses are provided in each of the empirical papers.

Table 5.4
Measures and data analysis plan overview

Paper	Research Questions	Measures	Analysis Strategy
II	Which ways of coping do adolescent girls prefer for academic and social stressors? Are there grade differences in girls' preferences for ways of coping? To what extent do adolescent girls rely on online sources of support in relation to traditional, in-person sources of support (i.e. parents, friends, and peers) and isolation?	Adolescent Coping with Academic and Social Stressors Scale	**(5) x (2) x 2 repeated measures ANOVA** Within-subject factors: • Way of coping (online, parents, friends, peers, isolation) • Stressor type (academic, social) Between-subjects factor: Grade (7, 9)
	How do traditional ways of coping predict online support seeking?	Adolescent Coping with Academic and Social Stressors Scale	**Two hierarchical regressions** • Responses to academic and social stressors analysed separately • Predictors: - Grade (Step 1) - Way of coping (online, parents, friends, peers, isolation (Step 2) • Dependent variable: online support seeking
III	Are the sources of support that adolescent girls intend to use to cope with academic and social stressors related to depression, anxiety, and stress/tension? Is the intended use of isolation by adolescent girls to cope with academic and social stressors related to depression, anxiety, and stress/tension? Does the intended use of isolation moderate the relationship between online support seeking and depression, anxiety, and stress/tension in adolescent girls?	Adolescent Coping with Academic and Social Stressors Scale DASS-Y (Szabo & Lovibond, 2013)	**Six hierarchical regressions** • Responses to academic and social stressors analysed separately • Predictors: - Grade (Step 1) - Way of coping (online, parents, friends, peers, isolation) (Step 2) - Online x isolation (Step 3) • Dependent variables: depression, anxiety, stress/tension
IV	How frequently do adolescent girls report seeking informal support online?	Frequency of online academic and emotional support seeking	**Direct reporting of frequency**
	Why do adolescent girls seek support online? What are the affordances and limitations of online support seeking identified by adolescent girls?	Semi-structured phone interviews	**Inductive thematic analysis**

Results

The results of the thesis are presented in the following three chapters. Each chapter

consists of an empirical article, as outlined below:

Chapter 6

Paper II: *Seeking support in a modern world: Relationships between online support seeking and*

seeking support from traditional sources in adolescent girls

Chapter 7

Paper III: *Support seeking, isolation and asking for help online: Relationships with adolescent*

girls' mental health

Chapter 8

Paper IV: *Adolescent girls seeking support online: Affordances and limitations*

Each chapter begins with a brief introduction preceding the paper, which identifies the

aims and research questions addressed in the paper.

6. Relationships between online support seeking and other ways of coping

Relationships between online support seeking and traditional ways of coping are explored in this chapter. The aims of this chapter are threefold: (i) to identify whether adolescent girls' preferences for online support seeking (and the other ways of coping) vary according to stressor type and age, (ii) to identify the extent to which girls rely on online sources of support in relation to traditional, in-person sources of support (i.e. parents, friends, and peers) and isolation, and (iii) to examine the relationships between online support seeking and seeking support from traditional, in-person sources of support (i.e. parents, friends, and peers) and isolation. As such, this chapter addresses the following four research questions:

- Which ways of coping do adolescent girls prefer for academic and social stressors?

- Are there grade differences in girls' preferences for ways of coping?

- To what extent do adolescent girls rely on online sources of support in relation to traditional, in-person sources of support (i.e. parents, friends, and peers) and isolation?

- How do traditional ways of coping predict online support seeking?

While Rife, Kerns, and Updegraff (2016) compared college students' use of online support seeking with seeking support in-person, this study is the first to do so in an adolescent sample. It is also the first study to investigate age differences in adolescent girls' use of online support seeking. Further, this paper investigates how girls' use of the five ways of coping (seeking support online, from parents, friends, and peers, and isolation) differs in response to two common daily stressor types: academic and social stressors.

The chapter is presented as an empirical article, which is currently under review in the *Journal of Early Adolescence*. Please note that American English spelling is used in this chapter to conform to journal requirements.

Seeking Support in a Modern World: Relationships Between Online Support Seeking and

Seeking Support from Traditional Sources in Adolescent Girls

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Abstract

This study examined relationships between informal online support seeking and traditional support seeking. Early and middle adolescent girls ($N = 186$) reported their intended use of support seeking in response to eight vignettes describing everyday academic and social stressors. While girls preferred to seek support in person from their parents and friends, those who sought less support from parents reported seeking more support online. Middle adolescents were more likely to seek support online than early adolescents, and, irrespective of age, online support was more likely to be used for academic rather than social stressors. We conclude that while online support seeking does not typically replace seeking support face-to-face, online support seeking does replace parental sources of support for some girls.

Keywords: Online support seeking, coping, adolescent, support seeking, isolation, stress

Seeking Support in a Modern World: Relationships Between Online Support Seeking and Seeking Support from Traditional Sources in Adolescent Girls

When faced with significant academic or social challenges, seeking support from others is typically seen as an adaptive form of coping for adolescents (Skinner & Zimmer-Gembeck, 2016). To date, however, it is not clear how these forms of coping transfer to online support seeking contexts. While adolescents continue to report that friends and parents are their first sources of support seeking when faced with a problem (Spears, Taddeo, Daly, Stretton, & Karklins, 2015), they also turn to online sources of support (Bonetti, Campbell, & Gilmore, 2010; Frison & Eggermont, 2015; Rickwood, Mazzer, & Telford, 2015). However, it is unknown how adolescents' use of informal online support seeking relates to their use of other everyday forms of coping, such as seeking support from parents or friends, and whether it is used more commonly for academic or social stressors.

As adolescents mostly communicate online with their existing friendship group (Pempek, Yermolayeva, & Calvert, 2009; Reich, Subrahmanyam, & Espinoza, 2012), and not strangers, it is likely that they are using informal online support seeking to extend the natural and existing support provisions of these groups. Nonetheless, existing research has indicated that online support seeking differs from face-to-face support seeking in several ways. First, the adoption and proliferation of smartphone technology (Lenhart et al., 2015) increases the availability of online support. Adolescents can seek support from friends or others when they are physically separated, transcending the physical proximity boundaries of traditional face-to-face support seeking.

Second, traditional and online sources of support may differ in their capacity to provide specific types of quality support. While the provision of information may be enhanced in large online networks, the provision of emotional or instrumental support may be more difficult (Trepte, Dienlin & Reinecke, 2015). Trepte et al. (2015) suggest that intimacy is crucial for sensitive emotional support and may be difficult to establish in large online contexts where less familiar contacts or others will also be privy to the exchange. Further, some types of online communication, such as text or instant messaging, are characterised by reduced social cues in

comparison to face-to-face communication (Walther, 1996). While some researchers suggest that a reduction of social cues actually presents an unexpected advantage for adolescents because it may stimulate self-disclosure (e.g. Valkenburg & Peter, 2009), others highlight the importance of social cues and physical contact for acquiring effective support (Frison & Eggermont, 2015; Lewandowski, Rosenberg, Parks, & Siegel, 2011).

Adolescents' support seeking, social isolation, and gender differences

As highlighted above, seeking support from others is an important way for adolescents to cope with stress. Support seeking is a behaviour that is characterised by the tendency to reach out and seek connections with others, thus enabling the individual to cope when stressors outweigh their ability to cope alone (Skinner & Zimmer-Gembeck, 2016). Individuals can signal that they require support and inform others of their experiences by engaging in self-disclosure when faced with problems (Zhang, 2017). Support seeking often involves some degree of self-disclosure, as in order to seek support, an individual must engage in self-disclosure. This support can include emotional support, information and resources, and a sense of connection or relatedness with others (Skinner, Edge, Altman, & Sherwood, 2003; Zimmer-Gembeck & Skinner, 2008). It is distinct from perceived social support, which is the belief that support is available and effective (Malecki & Demaray, 2006).

While adolescents report seeking support from a variety of sources, including parents, friends, peers, teachers, and other family members, developmental changes are evident. For example, concurrent cognitive, pubertal and social changes experienced by young adolescents may influence their choice of support sources (Schonert-Reichl & Muller, 1996; Skinner & Zimmer-Gembeck, 2009). Further, an increased desire for autonomy during adolescence may also drive a reduction in seeking help from adults (Skinner & Zimmer-Gembeck, 2016). In support of this, children in the upper primary years report parents and family to be their most important sources of support, but by early adolescence friends are identified as the primary sources of support (Crystal, Kakinuma, DeBell, Azuma, & Miyashita, 2008; Furman & Buhrmester, 1992). Notwithstanding these changing preferences, parental support has been

found to be more strongly related to wellbeing than peer support across adolescence (Helsen, Vollebergh, & Meeus, 2000; Schonert-Reichl & Muller, 1996). Parents therefore remain a vital source of support across this developmental stage.

While seeking support is considered to be an adaptive coping strategy, social isolation as a means of coping may be considered maladaptive (Skinner & Zimmer-Gembeck, 2016). Social isolation is characterised by behaviours such as withdrawal, concealment of problems, and avoidance of others (Skinner et al., 2003). Isolation may reduce stress in the short term, but may lead to problems later by obstructing the development of more adaptive ways of coping (Frydenberg, 2008). It is also associated with a range of emotional and behavioural problems including anxiety, depression, and social maladjustment (Seiffge-Krenke, 2000; Seiffge-Krenke & Persike, 2017; Visconti & Troop-Gordon, 2010; Zimmer-Gembeck, 2015). Isolation may reduce stress in the short term, but may lead to problems later by obstructing the development of more adaptive ways of coping (Frydenberg, 2008). It is possible that isolation is influenced by increasing social cognitive capacity in early to middle adolescence, as "the same capacities that allow adolescents to recognize they need help can also trigger concern that others may lose respect for them if they seek help" (Zimmer-Gembeck & Skinner, 2016, p. 29). Accordingly, there is evidence that adolescents may increasingly use isolation as they get older: for example, Ryan and Pintrich (1997) found that avoidance of help in the academic domain increased from 7th to 8th grade. Similarly, Donaldson, Prinstein, Danovsky, and Spirito (2000) found that adolescents (aged 15 – 18) were more likely to cope using isolation than children (aged 9 – 11). Thus, there may be a shift towards increased use of isolation from early to middle adolescence. As the adaptive function of isolation is to withdraw from an unsupportive social context (Skinner et al., 2003), it is possible that changing social contexts in this period lead to increased use of isolation.

Taking the findings for support seeking and isolation together, it is clear that there are developmental changes in adolescents' adaptive and maladaptive coping behaviours across adolescence. In addition, gender differences in coping behaviors have also been identified. Girls

seek more social support than boys (Frydenberg & Lewis, 1999; Hampel & Petermann, 2006; Piko, 2001; Rickwood & Braithwaite, 1994), and are more likely than boys to seek support from peers (Boldero & Fallon, 1995). Evidence also suggests that parental support is particularly important for girls' wellbeing, as the relationship between parental support and lower levels of emotional problems is stronger for girls than boys (Helsen et al., 2000, Seiffge-Krenke & Persike, 2017). Significantly, adolescent girls are more likely to report that they have either received or sought social support online (Bonetti, Campbell, & Gilmore, 2010; Bullot, Cave, Fildes, Hall, & Plummer, 2017). This propensity for support seeking in adolescence indicates adolescent girls are a particularly important population in which to investigate online support seeking.

Relationships between online support seeking and other ways of coping

To date there is variable evidence of the relationship between online support seeking and other types of support seeking or coping strategies. Given that adolescents predominantly use online communication to access their pre-existing friends (Reich et al., 2012), it is likely that those who frequently seek support from their friends in person will use online communication to continue seeking support when separated (e.g. on weekends, after school). In addition, those who seek support from wider groups of peers may continue seeking support online, simply because online platforms facilitate access to large groups of peers and acquaintances, with some evidence suggesting that the typical adolescent has 350 friends on Facebook (Madden et al., 2013). Although not measuring online support seeking specifically, adolescents in 7th to 9th grade who were classed as high social users of the internet reported experiencing higher levels of social support and better quality relationships with other adolescents than low users (Foerster & Röösli, 2017), suggesting that adolescents who seek support from friends and peers offline may also use online platforms to access this support.

There is no empirical evidence regarding the relationship between online support seeking and seeking support from parents. Indications from research on adolescents' online communication more broadly suggest that the relationship may be negative. While some studies

have reported no relationship between adolescent online communication and measures of parent-adolescent relationship quality (Lee, 2009; Subrahmanyam & Lin, 2007), Subrahmanyam and Greenfield argue that "electronic communication may also be reinforcing peer communication at the expense of communication with parents" (2008, p. 1). Consistent with this 'expense theory', adolescents' online time has been found to displace time spent with parents (Lee, 2009). Adolescents aged 13 – 18 who more frequently used the Internet for social activities also experienced more family conflict (Mesch, 2006), which may have negative implications for adolescents' opportunities to seek support from parents. Similarly, recent evidence has shown that adolescents in 7th to 9th grade who engage in high levels of social internet use have less positive home life and relationships with parents than those who engage in low levels of internet use (Foerster & Röösli, 2017). To summarise, we expect that adolescents who view their wider peer network as a source of support will also use online platforms to access this support; whether this detracts from their tendency to use parents as a form of support will also be investigated here.

As the tendency to cope using isolation may lead to depletion of social resources in the long term (Skinner & Zimmer-Gembeck, 2016), adolescents who cope by isolating themselves may be left with fewer support seeking opportunities. In support of this, girls' use of withdrawal coping in response to problems with peers at 13 years of age predicts greater use of withdrawal coping for problems with peers and parents at 17 years of age (Seiffge-Krenke & Persike, 2017), which could indicate a loss of social resources. It is unknown whether the tendency to cope using isolation is related to online support seeking; however, it is possible that adolescents with fewer in-person support seeking opportunities use online platforms to access wider social networks than available face-to-face.

Seeking support for different types of stress

It is apparent that adolescents may seek different forms of support for different kinds of stressors. While some adolescents will experience major adverse events (e.g. parent divorce, death of a family member), almost all will experience everyday hassles or stressors that require

coping responses (Seiffge-Krenke, Aunola, & Nurmi, 2009; Williams & McGillicuddy-De Lisi, 1999). These everyday stressors may differ by type, including social stressors (e.g. arguments with parents, friendship problems) and academic stressors (e.g. keeping up with schoolwork).

There is variability in research findings regarding support seeking and stressor type in adolescents. For example, Hampel and Petermann (2005) found that adolescents were more likely to seek support in response to academic stressors than social stressors, while Eschenbeck, Kohlmann & Lohaus (2007) found that adolescents were more likely to seek support for social stressors. As neither study specified the source of support (e.g. parents, peers or friends) accessed by adolescents, it may be the case that adolescents use different sources of support in response to different types of stressors.

In support of the notion that adolescents seek support from different sources, depending on the type of stressor they are facing, a strong body of evidence shows that adolescents have a preference for seeking support from friends when dealing with social stressors (Boldero & Fallon, 1995; Wilson, Deane, Ciarrochi, & Rickwood, 2005; Wintre & Crowley, 1993). In contrast, adults continue to be an important source of support for adolescents when they are seeking information and support for uncontrollable stressors (Zimmer-Gembeck & Skinner, 2011). Indeed, an important developmental change in coping during adolescence is an increase in the ability to seek support from different sources, depending on the nature of the problem, and the type of support required (Skinner & Zimmer-Gembeck, 2016). In the only study to date to consider how in-person and online support seeking varies by stressor type, Rife, Kerns, and Updegraff (2016) found that college students were most likely to seek emotional support for social stressors in-person or by text, but were more likely to seek support on Twitter for achievement stressors. It is unknown, however, whether adolescents use informal online support seeking more for social or academic stressors. To date, the limited research on online support seeking amongst adolescents has considered everyday stressors as a unitary construct (e.g. Frison & Eggermont, 2015).

Current study

Research on adolescents' use of online support seeking is in its infancy, and it is unknown whether adolescents' use of online support seeking changes with age or stressor type. Further, no study was located that has examined how online support seeking is related to traditional (face-to-face) support seeking from parents, close friends, peers (classmates who are not close friends), or isolation. As such, our first study aim was to identify the extent to which girls rely on online sources of support in relation to traditional, in-person sources of support (i.e. parents, friends, and peers) or isolation. Our second aim was to identify whether adolescent girls' preferences for online support seeking, in-person support seeking (i.e. parents, friends, and peers), and isolation vary according to stressor type and age. The final aim was to examine the relationships between online support seeking and in-person support seeking and isolation. We worked with early and middle adolescent girls for two key reasons. First, and as discussed earlier, psychosocial developments in the early and middle adolescent periods may drive changes in support seeking and isolation behaviours (Schonert-Reichl & Muller, 1996; Skinner & Zimmer-Gembeck, 2009). Second, early adolescence is a period of increased engagement with online communication (Office of Communications, 2016), meaning that this is a critical age group in which to investigate the emergence of online support seeking behaviours.

Method

Participants and procedure

Participants were 186 female high school students from four independent girls' schools in Sydney, Australia. There were 78 early adolescent girls in Grade 7 (M_{age} = 12.55 years, SD = 0.46) and 108 middle adolescent girls in Grade 9 (M_{age} = 14.43 years, SD = 0.40). The diversity of the sample was evidenced in the languages spoken in the home, with 31 – 52% of the student population in the four schools either speaking a language other than English, or having a parent who spoke a language other than English at home. This relatively high proportion of students with a language background other than English is typical of the demographics in Sydney, Australia (Australian Bureau of Statistics, 2011). All four participating schools were in the upper

quartile of socioeconomic advantage, as indicated by the Australian "Index of Community Socio-educational Advantage" (Australian Curriculum, Assessment and Reporting Authority, 2015). This is explained by the nature of the sample which was drawn from independent schools, which cater for girls only enrolments. Imputation of the relevant subscale mean was used to estimate missing values for two students who missed a single coping item in their survey.

Ethical approval was sought and granted from the institutional ethics committee prior to commencement of this study. All students in Grades 7 and 9 at the four participating schools were then invited to participate, with 21.20% of those in Grade 7 and 30.59% of those in Grade 9 agreeing. All students received parental consent to participate in the study and students also provided written and verbal consent to participate. The measure of adolescents' support seeking was then administered by the lead author during school hours via a paper-based survey. The survey protocol included a verbal reminder that the survey was about who they turned to for help and advice, including using technology to ask for support from friends.

Measures

Support seeking and isolation were assessed in eight vignettes representing academic and social stressors. Participants were presented with eight vignettes depicting common academic and social stressors. Three of the four vignettes reflecting academic stressors were adapted from the Multidimensional Measure of Coping (Skinner, Pitzer, & Steele, 2013). A fourth vignette (*"You are having trouble keeping up with the amount of study and homework you have to do"*) was added to replace one of the original vignettes (*"When I run into a problem on an important test"*) as adolescents would not be able to seek support in a typical school testing environment. Four vignettes depicting common social stressors *("You had a fight with your parents")* were adapted from the Motivational Theory of Coping Scale–12 (MTC-12) (Zimmer-Gembeck, Skinner, Morris, & Thomas, 2012). The original MTC-12 uses video vignettes: these were converted to written narrative to ensure consistency across academic and social stressors.

For each vignette, participants rated how much they would seek support online, seek support from parents, close friends, and peers (classmates who are not close friends), and use

isolation on a scale from 1 (*not at all*) to 5 (*definitely*). For example, to measure online support seeking, participants were asked, "How much would you go online or text to talk to someone about it?" in response to each of the eight vignettes. Average coping scores for each form of support were then derived separately for academic stressors and social stressors. Internal consistencies (Cronbach's alpha) for the subscales averaged .83 (online = .84; parents = .82; close friends = .80; peers = .79; isolation = .88). For social stressors, Cronbach's alphas averaged .77 (online = .82; parents = .77; friends= .72; peers = .65; isolation = .88), demonstrating acceptable internal reliability.

Results

Means and standard deviations for the five ways of coping by age and stressor type are presented in Table 1. Preliminary analyses indicate that the average intended online support seeking and seeking support from peers scores were low ($M = 1.83$ and 1.67 respectively), while intentions to seek support from parents and close friends scores were relatively high ($M = 3.55$ and 3.43 respectively). The average isolation score was 2.71. However, there was variation in the means according to stressor type and grade, and these will be explored in the ANOVA results below.

Comparison of ways of coping by stressor type and grade

In line with our first two study aims, a (5) x (2) x 2 repeated measures ANOVA was conducted to compare adolescent girls' use of the five ways of coping, taking stressor type (academic or social) and age (Grade 7 or 9) into account. To achieve our first aim, we examined the main effect of coping type (way of coping). The main effect for coping type was significant, $F(2.75, 506.36) = 204.19$, $p < .001$, $\eta_p^2 = .53$.[1] Pairwise comparison of means showed that adolescent girls reported that they would seek similar levels of support from parents and friends, and use these coping types significantly more than any other coping type. Intended use of

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[1] Mauchly's test of sphericity was violated for the main effect of coping type, $\chi^2(9) = 171.66$, $p < .001$, and the interaction effect of coping type and stressor type $\chi^2(9) = 78.13$, $p < .001$. As a result, the degrees of freedom were corrected using the Greenhouse-Geisser estimate of sphericity for coping type ($\varepsilon = .69$), and the Huynh-Feldt estimate of sphericity for the coping type and stressor type interaction ($\varepsilon = .86$).

Table 1

Means (M) and standard deviations (SD) for ways of coping by grade and stressor type

Way of coping	Seeking support from parents			Seeking support from close friends			Seeking support from peers			Online support seeking			Isolation		
	AS	SS	Aggregated	AS	SS	Aggregated	AS	SS	Aggregated	AS	SS	Aggregated	AS	SS	Aggregated
Stressor type	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Grade 7 (*n* = 78)	4.10 (0.76)	3.14 (0.97)	3.62 (0.87)	3.21 (0.87)	3.33 (0.99)	3.27 (0.93)	1.78 (0.63)	1.54 (0.57)	1.66 (0.60)	1.73 (0.76)	1.52 (0.78)	1.62 (0.77)	2.34 (1.09)	2.85 (1.26)	2.59 (1.18)
Grade 9 (*n* = 108)	4.01 (0.87)	2.94 (1.02)	3.48 (0.95)	3.42 (0.87)	3.41 (0.97)	3.41 (0.92)	1.92 (0.70)	1.42 (0.54)	1.67 (0.62)	2.16 (0.90)	1.90 (0.90)	2.03 (0.90)	2.64 (1.07)	3.02 (1.21)	2.83 (1.14)
Grade 7 and 9 (*n* = 186)	4.05 (0.82)	3.03 (1.00)	3.55 (0.91)	3.33 (0.87)	3.38 (0.98)	3.43 (0.93)	1.87 (0.67)	1.47 (0.56)	1.67 (0.62)	1.98 (0.87)	1.74 (0.87)	1.83 (0.87)	2.51 (1.09)	2.95 (1.23)	2.71 (1.16)

Note: AS = academic stressors, SS = social stressors; Aggregated = mean coping score for both stressors

isolation was significantly less than intentions to seek support from parents and friends, but significantly more than intentions to seek support from peers or online (see Table 1 for means).

Stressor type. The second aim of our study was to examine whether girls' use of the ways of coping varied depending on stressor type and age. The main effect for stressor type was also significant, $F(1, 181) = 58.64$, $p < .001$, $\eta_p^2 = .24$, with higher overall use of the five ways of coping for academic than social stressors. However, as the five ways of coping included support seeking and isolation behaviors, it was not possible to tell whether this represented higher scores for support seeking (parents, friends, peers, online) or for isolation. Instead, we examined the interaction effect between coping type and stressor type, as this allowed us to address our second study aim. The interaction between stressor and coping type was significant, $F(3.43, 631.68) = 84.93$, $p < .001$, $\eta_p^2 = .32$. To interpret this interaction, post hoc analyses of simple effects were conducted using a Bonferroni adjustment. As shown in Figure 1, adolescent girls reported they
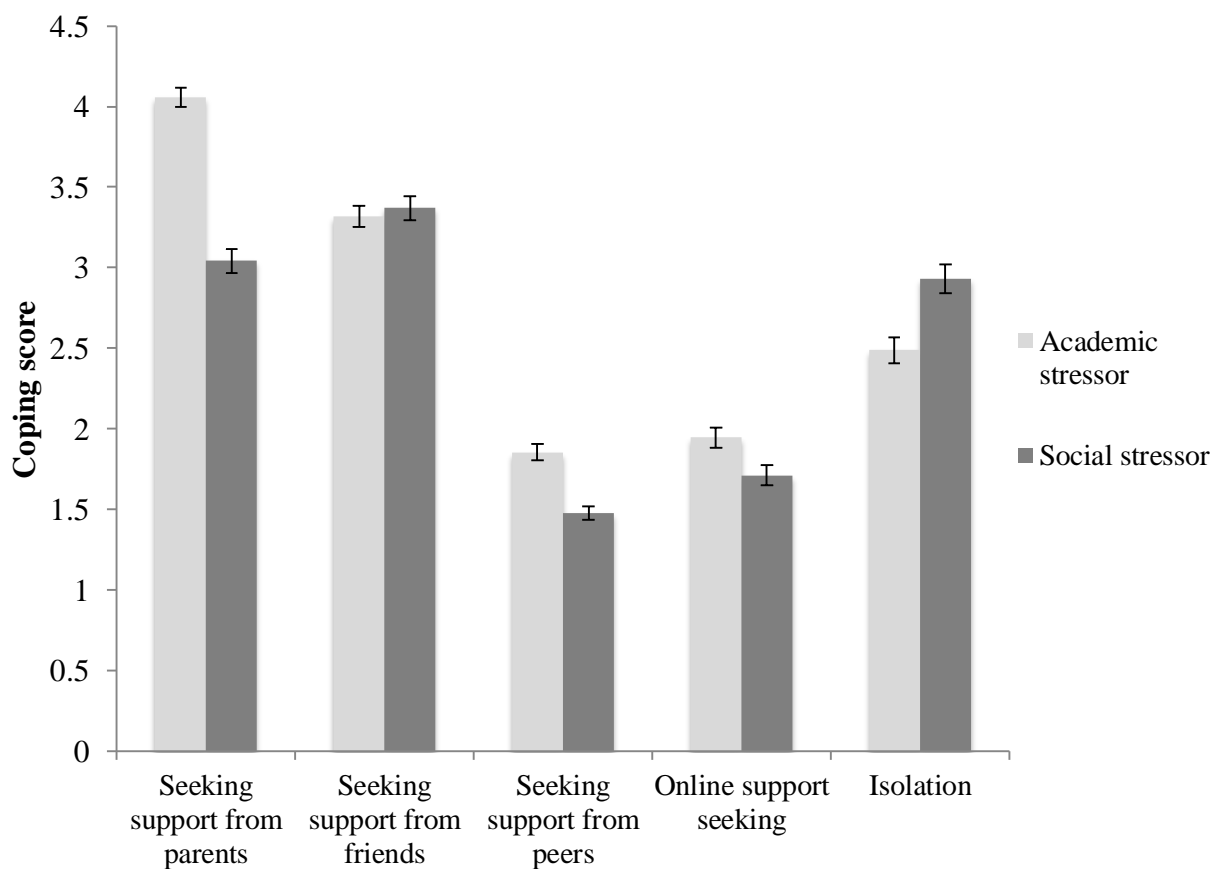
Figure 1
Interaction effect of coping type and stressor type on coping score (N = 186)

would seek different kinds of support for academic and social stressors. For academic stressors, parents were a significantly stronger source of support than friends ($p < .001$). Friends were however, a significantly greater source of support than choosing to isolate themselves in the face of academic stressors ($p < .001$). Peers and online contacts were the least-sought sources of support, and were referred to at a similar level ($p = 1.0$). For social stressors, parents were a weaker source of support. Adolescent girls indicated that they would seek support from friends rather than parents for social stressors ($p < .01$). Seeking support from parents and isolation were used to a similar extent ($p = 1.0$). Online support seeking was used significantly less than seeking support from parents ($p < .001$) and isolation ($p < .001$), but significantly more than seeking support from peers ($p < .05$).

Age. There was a significant main effect of age, $F(1, 184) = 5.49$, $p = .020$, $\eta_p^2 = .03$, qualified by two significant interactions. First, the interaction between age and coping type was significant, $F(4, 736) = 3.12$, $p = .015$, $\eta_p^2 = .02$. Post hoc analyses revealed that girls in Grade 9 were significantly more likely to report they would seek support online than girls in Grade 7 ($p < .001$). There were no significant age differences for intentions to seek support from parents, friends, peers, or isolation, however. Second, there was a significant interaction between age and stressor type, $F(1, 184) = 2.08$, $p = .015$, $\eta_p^2 = .03$. Post-hoc analyses revealed that middle adolescent girls reported higher overall intended use of the ways of coping for the academic stressors than the social stressors. However, as the five ways of coping included support seeking and isolation behaviors we did not interpret this finding further. The 3-way interaction of coping type x stressor type x age was not significant, $F(4, 736) = .48$, $p = .753$, $\eta_p^2 = .003$, which indicates that the coping type x stressor type interactions reported above did not vary for early and middle adolescents.

Predicting online support seeking from traditional support seeking

In line with our third aim, we were particularly interested in determining whether online support seeking would co-occur with other traditional ways of coping. To address this aim, we also conducted a correlational analysis and two hierarchical regression analyses. The

correlational analysis presented in Table 2 shows that relationships between intentions to seek support online and use of the other ways of coping varied for academic and social stressors. For academic stressors, online support seeking was positively related to seeking support from friends and peers, but not related to seeking support from parents and isolation. In contrast, seeking support online was negatively related to seeking support from parents, positively related to seeking support from friends, and unrelated to seeking support from peers and isolation in response to social stressors.

Table 2
Correlations between major study variables (N = 186)

Variable	1	2	3	4	5	6	7	8	9
1. Seeking support from parents for AS	-								
2. Seeking support from parents for SS	.52***	-							
3. Seeking support from friends for AS	.19**	.08	-						
4. Seeking support from friends for SS	.16*	.12	.52***	-					
5. Seeking support from peers for AS	.30***	.13	.46***	.31***	-				
6. Seeking support from peers for SS	.29***	.16*	.26***	.41***	.60***	-			
7. Seeking support online for AS	-.08	-.10	.36***	.18*	.32***	.09	-		
8. Seeking support online for SS	-.19**	-.26***	.17*	.29***	.10	.02	.60***	-	
9. Isolation for AS	-.28***	-.29***	-.14	-.03	-.19**	-.15*	.01	.17*	-
10. Isolation for SS	-.15*	-.34***	-.19**	-.09	-.15*	-.16*	-.10	.12	.73***

Note: $*p < .05$; $**p < .01$; $***p < .001$; AS = academic stressors, SS = social stressors.

In the regression analyses, traditional support seeking behaviours and isolation were entered as predictors, and online support seeking was entered as the dependent variable. As the ANOVA and correlational analyses above indicated that there were differences in how girls reported they intended to use the five ways of coping depending on whether they were faced

with academic and social stressors, we conducted a regression analysis for each stressor type. The first regression focused on anticipated coping with academic stressors, while the second analysis focused on anticipated coping with social stressors.

Academic stressors. The first hierarchical regression analysis for academic stressors was significant, accounting for 24.5% of the variance in online support seeking (Table 3). Age (Grade 7 or 9) was entered on the first step, and accounted for 5.9% of the variance in online support seeking, $R^2 = .06$, $F(1, 184) = 11.64$, $p = .001$. Ways of coping were entered next, and explained an additional 18.5% of variance in intended online support seeking, $R^2 = .25$, $F(4, 181) = 14.66$, $p < .001$. As shown in Table 3, intentions to seek support from parents negatively predicted online support seeking. In contrast, intentions to seek support from close friends and peers each positively predicted intentions to seek support online. Intended use of isolation did not significantly predict intended online support seeking.

Table 3
Regression predicting online support seeking for academic stressors from traditional support seeking behaviours

Predictor	Step 1			Step 2		
	B	*SE*	β	*B*	*SE*	β
Age	.43	.13	.24**	.31	.12	.17**
Parents				-.21	.07	-.20**
Friends				.30	.07	.30***
Peers				.28	.10	.22**
Isolation				.01	.06	.01
R^2		.06**			.25***	

*Note: N = 186; * p < .05; ** p < .01; *** p < .001*

Social stressors. The second hierarchical regression analysis for social stressors was also significant, accounting for 20.7% of the variance in online support seeking (Table 4). Age (Grade 7 or 9) was entered on the first step, and accounted for 4.8% of the variance in online support seeking, $R^2 = .05$, $F(1, 184) = 9.37$, $p = .003$. Ways of coping were entered next, and explained an additional 15.9% of variance in intended online support seeking, $R^2 = .21$, $F(4, 181) = 11.82$, $p < .001$. As shown in Table 4, intentions to seek support from parents negatively predicted online support seeking. In contrast, intentions to seek support from close friends positively predicted online support seeking. Intentions to seek support from peers and isolation did not significantly predict online support seeking.

Table 4

Regression predicting online support seeking for social stressors from traditional support seeking behaviours

Predictor	Step 1			Step 2		
	B	*SE*	β	*B*	*SE*	β
Age	.39	.13	.22**	.31	.12	.18*
Parents				-.24	.06	-.28***
Friends				.30	.07	.34***
Peers				-.08	.12	-.05
Isolation				.03	.05	.04
R^2		.05**			.21***	

*Note: N = 186; * p < .05; ** p < .01; *** p < .001*

Discussion

This study explored the relationship between adolescent girls' intended use of online support seeking and traditional ways of coping (seeking support from parents, friends, and peers, and isolation). It also compared the intended use of these ways of coping and investigated whether intentions to use these ways of coping differed by stressor type and age. Four major findings emerged. First, while adolescent girls reported that they would use online support seeking to some degree to cope with everyday stressors, they were most likely to intend to seek support from parents and close friends, or to isolate themselves. For academic stressors, girls were most likely to seek support from parents. For social stressors, in contrast, girls were most likely to seek support from close friends, but their intended use of isolation and support from parents did not significantly differ. Second, adolescent girls reported that they were more likely to seek support online for academic stressors rather than social stressors. Third, girls in Grade 9 were more likely to select online support seeking than girls in Grade 7. Fourth, distinctive patterns of traditional and online support seeking emerged. Specifically, seeking support from parents predicted lower levels of online support seeking, while seeking support from friends predicted higher levels of online support seeking.

Comparing online support seeking with traditional ways of coping

Adolescent girls rated themselves most likely to seek support from parents and friends compared to seeking support from peers and online contacts, and using isolation when faced with everyday stressors. This finding demonstrates that traditional sources of support remain

commonly used by adolescents (Bullot et al., 2017; Boldero & Fallon, 1995). Online support seeking was used significantly less than seeking support from parents and friends face-to-face, and did not significantly differ from seeking support from peers. Given that online support may be constantly available, adolescents' preference for traditional support seeking suggests that they may consider traditional face-to-face interactions to offer higher quality support (Frison & Eggermont, 2015; Lewandowski et al., 2011). This finding may also indicate that adolescents can distinguish between the affordances or qualities of different sources of support. This suggestion aligns with past research that has found that adult users of online communication perceive it to be less useful than face-to-face communication (Schiffrin, Edelman, Falkenstern, & Stewart, 2010). It also provides support for the notion that increasing metacognitive capacities in adolescence allow adolescents to critique the usefulness of coping responses (Skinner & Zimmer-Gembeck, 2016).

Differences in ways of coping by stressor type

In accordance with previous research (Boldero & Fallon, 1995; Wilson et al., 2005; Wintre & Crowley, 1993), our findings showed that adolescent girls prefer different sources of support for academic and social stressors. Parents were most often the intended source of support for academic stressors, and close friends for social stressors. Interestingly, close examination of the findings reveals that although adolescent girls preferred parental support for academic stressors, they were equally likely to report intentions to seek support from parents or isolate themselves in response to social stressors. This finding is concerning given that adolescent girls' use of isolation is associated with increased internalizing symptoms in young adulthood (Seiffge-Krenke & Persike, 2017). It may indicate adolescents are more likely to employ less adaptive coping strategies when faced with social stressors, and is congruent with past research that has reported maladaptive coping patterns in response to social stressors in this age group (Hampel & Petermann, 2006).

While we did not seek participants' explanations for their choices of support, the finding that girls identified they would seek support online for academic stressors rather than social

stressors may reflect the differences in the type of support required. Although online platforms may not afford the provision of strong emotional support when social cues and physical contact are limited (Frison & Eggermont, 2015; Lewandowski et al., 2011), this is less likely to be problematic for academic support seeking. Therefore, girls may be motivated by the need for more informational support rather than strong emotional support in seeking academic support online. Finally, and related to the emotional qualities of the support seeking experience, it is possible that adolescents feel less vulnerable asking for academic help online rather than social help online.

Differences in ways of coping by age

We were also interested in any differences in online support seeking and traditional ways of coping across early and middle adolescence. Girls in Grade 9 gave higher ratings for online support seeking than did girls in Grade 7, which is likely to reflect middle adolescents' greater use of online communication in comparison to younger adolescents (Lenhart, Purcell, Smith & Zickuhr, 2010). We also found no differences between Grade 7 and 9 girls' support seeking ratings for parents, friends, or peers. This finding contradicts previous research that found increases in seeking support from friends, and decreases in seeking support from family from Grade 8 to Grade 10 (Crystal et al., 2008). Although we note the slight age differences between the study populations, a methodological difference may also explain these inconsistent findings. While our study asked adolescents to rate how likely they would be to seek support from their parents in each scenario, Crystal et al. (2008) measured support seeking from family more broadly (i.e. including siblings, grandparents, etc.). Thus, adolescents seeking support from family members other than parents may have driven the age-based differences reported by Crystal et al. (2008).

Traditional ways of coping and online support seeking

Importantly, this study also identified that adolescents who intended to seek less support from parents also intended to seek more support online. This finding was true for both academic and social stressors. This raises concerns if time spent online displaces time with parents (Lee,

2009), given that parental support throughout adolescence remains a significant source of adolescent wellbeing (Helsen et al., 2000; Newman, 2008). If online support does lead to a reduction in seeking support from parents, for example, this could have negative implications for adolescent wellbeing. Further, although adolescents become increasingly able to differentiate sources of support for different types of problems (Skinner & Zimmer-Gembeck, 2016), the quality of support afforded by online contacts is likely to be limited compared with support from caring and positive parents. Increased reliance on support from friends and peers may be a normative developmental process, but the availability of online support contexts may exaggerate this process of gradual separation from parents, with as yet undocumented qualities of this support provision. As such, a priority of future research should be to explore whether online support seeking displaces seeking support from parents over and above adolescents' increasing need for autonomy.

Intentions to seek support from friends was the strongest positive predictor of online support seeking for both stressor types. For academic stressors, seeking support from peers also predicted higher levels of online support seeking. These findings suggest that the preference or tendency to seek support from friends and peers also leads to the use of online technologies to access academic support. It also seems likely that online communication technologies are particularly suited to seeking informational support (Trepte et al., 2015) and may allow girls to access information about schoolwork and homework from their friends and classmates. While this expanded context of support may seem positive, there is evidence that the face-to-face support offered by peers for academic stressors is limited by its variable quality (Ryan & Shim, 2012), thus seeking support online for academic stressors may similarly be less helpful than seeking support from other sources such as parents. Further studies are needed to confirm the subject or topics of online academic help seeking, and to investigate the quality of academic help that is provided by friends and peers online.

Limitations

This study makes a novel contribution by comparing adolescents' use of online support seeking with other traditional ways of coping. There are two limitations of note. First, the purposive sampling of girls in this study limits the findings to young adolescent girls, and there is considerable evidence showing that there are gender-based differences in the use of support seeking (for example, Bonetti et al., 2010; Frydenberg & Lewis, 2000; Helsen et al., 2000). Generalizability to boys is therefore limited and further research including boys is needed. The purposive sampling from girls' schools also implied a more socioeconomically advantaged population. This may indicate greater access to resources such as online communication and web enabled technologies (Lenhart, 2015), thus future research with more diverse samples would yield more information about the uptake of online support seeking.

Second, we intentionally narrowed our focus to adolescents' informal online support seeking, face-to-face support seeking, and isolation, and not to other forms of coping. This focus allowed us to investigate adolescents' intended use of specific sources of support, which addressed an identified limitation of existing coping research (Zimmer-Gembeck & Skinner, 2011). We nonetheless recognise that online support seeking may be related to, and play a role in the development of, adolescents' use of other ways of coping: both adaptive and problematic. For example, online support seeking may offer opportunities for adolescents to collaboratively solve problems with peers, or may allow adolescents to engage in co-rumination with their friends. Although beyond the scope of the current study, a priority of future research should be to investigate specific reasons for online support seeking attempts in response to both academic and social stressors. Measurement of adolescents' use of a wider range of coping strategies can also be included, such as seeking support from parents online. Further, prospective designs are needed to determine the long-term implications of online support seeking for the development of coping.

Third, in this study we used hypothetical vignettes to create standardized stressors for participants to respond to. While this method allowed us to control for differences in

adolescents' exposure to each stressor (Skinner et al., 2013; Zimmer-Gembeck, 2016), it is important to emphasize that this method measures intended rather than actual coping (Zimmer-Gembeck, 2015). Further, our measure of online support seeking is yet to be validated. It is possible that our online support seeking item, "How much would you go online or text to talk to someone about it?" captures behaviors that could include other coping strategies, such as venting or reassurance-seeking. Future research could include validation of our measure of online support seeking and direct observation of online support seeking attempts to identify specific online support seeking behaviors.

Conclusions

To our knowledge, this study is the first to compare informal online support seeking with other ways of support seeking, and to examine relationships between support seeking and different stressor types. One important implication of these findings is that despite the significant uptake of online communication technologies, traditional relationships remain critical sources of support for adolescent girls. A further implication is that girls may be turning to online sources of support if they do not seek support from parents, and may turn to isolation for the particular stressor type of social problems. This may have significant implications for the development of adaptive support seeking during adolescence. This study confirms the importance of examining adolescents' support seeking for different stressor types. Future research can extend these findings by examining the nature and quality of online support seeking attempts, and by determining long-term implications of online support seeking for the development of adaptive support seeking.

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7. Relationships between ways of coping and mental health

Several novel findings regarding adolescent girls' use of online support seeking emerged in the previous chapter. This chapter extends on these findings by investigating the relationships between online support seeking and traditional ways of coping and mental health. Although support seeking is generally perceived to be helpful, Frison and Eggermont (2015) found that if adolescents feel unsupported online, seeking support online was related to increased depression. No studies to date have investigated how online support seeking is related to other measures of poor mental health, such as anxiety and stress. Further, it is unknown whether the relationship between online support seeking and mental health differs according to the stressor type. Thus, the aim of this chapter was to identify the relationships between online support seeking (and seeking support from parents, friends, and peers, and isolation) and depression, anxiety, and stress. The research questions were:

- Are the sources of support that adolescent girls intend to use to cope with academic and social stressors related to depression, anxiety, and stress/tension?

- Is the intended use of isolation by adolescent girls to cope with academic and social stressors related to depression, anxiety, and stress/tension?

- Does the intended use of isolation moderate the relationship between online support seeking and depression, anxiety, and stress/tension in adolescent girls?

The chapter is presented as an empirical article, which has been prepared for submission to the *Journal of Adolescence*.

Support Seeking, Isolation and Asking for Help Online: Relationships with Adolescent Girls'

Mental Health

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Abstract

This study examined relationships between adolescent girls' support seeking and mental health, with a specific focus on informal online support seeking. Early and middle adolescent girls ($N = 186$) were presented eight vignettes of academic and social stressors. For each scenario, they rated their likelihood of seeking support from parents, peers, friends, or online, or of isolating themselves. They were then administered the youth version of the Depression, Anxiety, and Stress Scale (DASS-Y). Regression analyses indicated that online support seeking was positively related to depression when used for academic stressors, and positively related to anxiety for social stressors. Online support seeking for academic stressors was also related to higher levels of anxiety when coupled with moderate and high use of isolation. These findings suggest informal online support seeking and isolation are coping strategies related to poorer mental health in adolescent girls.

Keywords: Online support seeking, coping, adolescent, support seeking, isolation, mental health

Support Seeking, Isolation and Asking for Help Online: Relationships with Adolescent

Girls' Mental Health

Adolescents are intense users of communication technologies. Recent figures show that 72% of adolescents use social networking sites; moreover, the average adolescent also sends 141 instant messages or texts per week (Office of Communications, 2016). While many adolescents report that they have been supported online in times of difficulty (Lenhart, Smith, Anderson, Duggan, & Perrin, 2015), it is unclear whether this is an effective way of coping.

Recent research has shown that adolescents seek online support when faced with everyday stressors (Frison & Eggermont, 2015), and this can contribute to a feeling that they have access to social support when needed (Liu & Yu, 2013). To date, research focusing on online support seeking has focused predominantly on adults, and these findings suggest that online support seeking may not be as useful as face-to-face support. In a sample of college students, for example, Olson, Liu, and Shultz (2012) found that interactions with friends in traditional face-to-face settings offered higher levels of emotional, instrumental, and informational support than online interactions with friends. The capacity of online platforms to effectively provide emotional and instrumental support has recently been questioned in an adult sample, with only offline (or face-to-face) social support being related to improved life satisfaction (Trepte, Dienlin, & Reinecke, 2015). Trepte et al. (2015) proposed that intimacy is a crucial pre-requisite for emotional support, and it is more difficult to establish intimacy in large online networks when compared to smaller face-to-face networks. However, adolescents mostly engage in online communication with their regular group of friends rather than unfamiliar people (Reich, Subrahmanyam, & Espinoza, 2012). As such, it is unknown whether adolescents experience similar difficulties in establishing intimacy in their online support seeking interactions.

To investigate online support seeking as a way of coping, the distinction must be made between online support seeking and perceived online social support. Perceived social support is the belief that support is available and effective in enhancing functioning or providing protection

from negative outcomes (Malecki & Demaray, 2006). Thus, perceived online support is the belief that support is available from online contacts and that this support is useful. In contrast, support seeking involves using social resources to cope with stress (Skinner, Edge, Altman, & Sherwood, 2003). Thus, adolescents can be defined as seeking online support if they turn to their online contacts for guidance or assistance as a way of coping.

Despite evidence suggesting adolescents seek social support from their online contacts, there has been limited research attention to the relationship between adolescent online support seeking and mental health. There are indications, however, that online support seeking is related to poorer mental health. For example, higher levels of support seeking on Facebook were concurrently related to higher levels of depressed mood in adolescents (Frison & Eggermont, 2015). This relationship was mediated by perceived online social support, such that if support was perceived to be available online, then online support seeking predicted decreased depressed mood. Further, adolescent and young adult males who experienced poorer mental health sought more support online than did those without psychological distress (Burns et al., 2013). Research focused on online activity more broadly has also found that adolescents who spent more time on social networking sites experienced higher levels of psychological distress than those who spent less time on social networking sites (Sampasa-Kanyinga & Lewis, 2015). Together, these cross-sectional studies suggest that there may be a relationship between online support seeking and poorer mental health.

Mental health and coping in adolescence

Adolescents who suffer from an anxiety or depressive disorder are two to three times more likely to experience a mental health disorder in early adulthood (Pine, Cohen, Gurley, Brook, & Ma, 1998). These same adolescents are also likely to experience difficulties with schoolwork and social relationships (Fröjd et al., 2008; Siegel, La Greca, & Harrison, 2009). The significant cost of poor mental health in adolescence warrants further research into possible risk and protective factors for the development of these disorders during the adolescent period.

A particularly important predictor of mental health is the individuals' ability to cope with stress. Everyday stressors increase during early to middle adolescence (Seiffge-Krenke, 2000), and self-reported stress levels also peak (Seiffge-Krenke, Aunola, & Nurmi, 2009). Perhaps not surprisingly, everyday stressors have been found to predict poorer mental health outcomes (Marks, Sobanski, & Hine, 2010; Sim, 2000). The mere presence of a stressor is not sufficient to cause these outcomes alone, however, and effective adolescent coping is related to numerous measures of positive psychological adjustment (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). As such, adolescence is a critical time for developing coping skills.

In this paper, and given our interest in online support seeking, we focus on two specific forms of coping: support seeking and the opposing behaviour of social isolation. Support seeking is one of the most commonly used families of coping, and includes behaviours such as comfort-seeking, contact-seeking, and instrumental aid (Skinner & Zimmer-Gembeck, 2007). Support seeking is considered as an adaptive form of coping because support seeking responses are traditionally shown to reduce stress (Newman, 2008) and increase life satisfaction (Saha, Huebner, Hills, Malone, & Valois, 2014). In contrast, isolation is theorised to be maladaptive because it includes strategies such as social withdrawal, concealment, emotional withdrawal, and avoiding others (Skinner et al., 2003). While isolation can be useful in the short term (e.g. to avoid conflict), it is largely maladaptive in the face of stress because it allows individuals to avoid addressing and resolving stressful situations (Skinner, Pitzer & Steele, 2013; Skinner & Zimmer-Gembeck, 2016). Moreover, isolation may also prevent adolescents from developing more adaptive ways of coping with stress (Frydenberg, 2008; Zimmer-Gembeck, 2016).

Support seeking and mental health in adolescence

Support seeking is one of the most common adaptive coping strategies used by adolescents. While adolescents may formally seek support from professionals in the school environment, such as teachers or mental health professionals, they are more likely to seek support informally (Raviv, Sills, Raviv, & Wilansky, 2000). Sources of informal support include parents, friends, peers, and, increasingly, online contacts. Research shows that adolescents'

online contacts are likely to be mostly friends and acquaintances that they know in person (Reich et al., 2012); however, they may also include friends-of-friends or strangers. Given the differences between face-to-face and online support seeking, it is unclear whether online support seeking is an adaptive way of coping with stress for adolescents. It is also unclear whether all sources of support, face-to-face or online, are useful in all situations.

In their extensive review of the development of coping, Zimmer-Gembeck and Skinner (2011) identify two pressing issues for future research. Firstly, to examine how adolescents cope with stress in different situations, it is important that future research differentiate between the different stressor types that are most commonly faced by adolescents (for example, social or academic stressors). Secondly, the review found that the source of support being studied was often ambiguous, with measures such as "asking someone for help" being used in a number of studies. It is important that future research identify who support is sought from, and whether or not each source promotes positive coping equally well.

The lack of specificity about the stressor type and source of support in some past studies may explain equivocal findings regarding the relationships between support seeking and mental health. In one study, for example, adolescents who sought support from their parents were less likely to be depressed one year later (Murberg & Bru, 2005). In a similar study, seeking support from friends and family was not related to depression one year later (Galaif, Sussman, Chou, & Wills, 2003). These seemingly contradictory findings may be partly due to the fact that neither study specified the type of stressor (social or academic), and differential findings may reflect individual perceptions of parental support in relation to unique individual stressor types.

In the small number of studies that have identified specific stressor types, different relationships have emerged between support seeking and mental health outcomes. For example, in studies that have examined social stressors such as peer victimization and rejection, seeking support from friends predicted increased anxiety (Visconti & Troop-Gordon, 2010). In contrast, seeking support from parents (Visconti & Troop-Gordon, 2010) or from unspecified sources (Zimmer-Gembeck, 2015) had no known associations with mental health. In studies that have

examined academic stressors, however, seeking support from parents, friends, or professionals was related to a more positive attitude towards school (Ganim & Frydenberg, 2006) and increased school engagement (Marchand & Skinner, 2007). Taken together, these findings demonstrate that effective support seeking in adolescents is likely to depend both on the source of the support and the type of stressor identified. This may be particularly important for online support seeking, which differs from face-to-face support seeking by the availability of online friends regardless of physical proximity to one another.

Isolation and mental health in adolescence

In contrast with the research examining support seeking, research examining isolation strategies and mental health outcomes produces a more consistently negative pattern of findings. In a three-year longitudinal study, for example, Seiffge-Krenke (2000) found that withdrawal was both cross-sectionally and longitudinally associated with adolescents' emotional and behavioural problems. When used in response to interpersonal stressors, social withdrawal and avoidance have also been found to be associated with adolescents' social anxiety and depression (Rudolph & Zimmer-Gembeck, 2014; Zimmer-Gembeck, 2015). For adolescent girls, avoidance (measured as behavioural and social avoidance) following peer victimisation was associated with social maladjustment (Visconti & Troop-Gordon, 2010). Further, Seiffge-Krenke and Persike (2017) found that girls who withdrew in response to interpersonal stressors at 13 years of age were at greater risk of experiencing internalising and externalising symptoms in young adulthood.

While there is little research on the use of isolation to cope with academic stressors, the strategy of concealment in response to academic stress has been linked with disengagement from school (Marchand & Skinner, 2007). Further, older adolescents who have a negative attitude towards school are more likely to use isolation coping behaviours (Ganim & Frydenberg, 2006). Collectively, these results provide support for isolation being conceptualised as a maladaptive way of coping, with evidence suggesting that isolation and mental health have a transactional relationship (Zimmer-Gembeck, 2015).

Online support seeking and isolation

Above we present evidence that both online support seeking and isolation are potentially maladaptive ways of coping. As discussed earlier, there appear to be a number of risks associated with seeking support online. Firstly, online contexts may be limited in their capacity to deliver important forms of support such as emotional and instrumental support (Trepte et al., 2015). Secondly, there is also evidence that the benefit of online support seeking is contingent on the perception that emotional support is available from online contacts, and that adolescents do not always feel supported online (Frison & Eggermont, 2015). Finally, the text-based nature of many online communication tools can result in people behaving differently to how they would in face-to-face situations (Suler, 2004). Actual or perceived hostile messages are a significant disadvantage of online support groups (Tanis, 2007). These could also occur in informal online support seeking interactions, where visual cues are absent. Perceived negative support on Facebook is related to increased depression in adults (McCloskey, Iwanicki, Lauterbach, Giammittorio, & Maxwell, 2015), and 88% of adolescents have reported that they had experienced or observed acts of meanness or cruelty online (Lenhart et al., 2011). Together, this evidence suggests that at least some forms of online support seeking may result in the adolescent feeling vulnerable and unsupported.

Recent research suggests that coping can interact to predict mental health outcomes in adolescence. For example, Velez et al., (2016) found that the maladaptive use of rumination as a coping strategy moderated the relationship between support seeking and depression. While no research to date has considered how isolation interacts with other coping strategies, it is possible that the combination of online support seeking and isolation is particularly problematic for mental health. Adolescents who typically respond to stress by isolating themselves may have fewer opportunities to seek support in person. These individuals may seek support online to replace in-person support; however, online support is likely to be poorer in quality than in-person support. Further, as the use of isolation strategies is linked with negative emotions (Skinner et al., 2003), isolated adolescents may be more vulnerable to the potential risks of

online support seeking, such as negative feedback. Thus, the possibility of isolation strengthening the relationship between online support seeking and poorer mental health should be investigated.

Adolescent girls, mental health, and online support seeking

There are several reasons for investigating the relationship between online support seeking and mental health specifically in girls. Indeed, a number of factors suggest that adolescent girls who seek support online may have a particularly high risk of experiencing negative mental health. Girls are more likely than boys to experience depressive disorders or symptoms in adolescence (Zahn-Waxler et al., 2008), and girls more commonly experience anxiety in childhood and adolescence (Roza, Hofstra, van der Ende, & Verhulst, 2003). Recent evidence suggests that adolescents from advantaged backgrounds experience poorer mental health than those from less advantaged backgrounds (Lessof, Ross, Brind, Bell, & Newton, 2016), with additional studies reporting that girls from advantaged and middle-class backgrounds are particularly at risk of clinical depression, body dissatisfaction, and emotional distress (Luthar & D'avanzo, 1999; Lyman & Luthar, 2014; West & Sweeting, 2003). In addition to girls being at greater risk of developing depression and anxiety, studies consistently find that girls use support seeking more often than boys (Eschenbeck, Kohlmann, & Lohaus, 2007; Fallon & Bowles, 1999). Girls are also more likely than boys to report that they have experienced online support in challenging times (Lenhart et al., 2015), and are more likely to report seeking support online (Bullot, Cave, Fildes, Hall, & Plummer, 2017). The reported associations between online support seeking, isolation and maladaptive mental health outcomes, coupled with the phenomena of higher support seeking and online support seeking in adolescent girls suggests these girls are a potentially at-risk group that warrant research attention.

The current study

This study aims to investigate the mental health of adolescent girls who report intentions to use online support seeking to cope with academic and social stressors, rather than face-to-face support seeking from parents, friends, or peers. We worked with girls from an advantaged

socioeconomic background because previous research has found that girls from advantaged backgrounds exhibit poorer mental health outcomes than their less advantaged peers (Luthar & D'avanzo, 1999; West & Sweeting, 2003). Given findings that ways of coping may be differentially related to different mental health outcomes, we measured three negative mental health states: depression, anxiety, and stress. Based on the assumption that isolation indicates an avoidance of in-person support seeking, we proposed that the combination of isolation and online support seeking would be more strongly related to poor mental health than online support seeking alone. We therefore examined the following research questions:

1. Are the sources of support that adolescent girls intend to use to cope with academic and social stressors related to depression, anxiety, and stress/tension?

2. Is the intended use of isolation by adolescent girls to cope with academic and social stressors related to depression, anxiety, and stress/tension?

3. Does the intended use of isolation moderate the relationship between online support seeking and depression, anxiety, and stress/tension in adolescent girls?

It was hypothesised that online support seeking and isolation would each be associated with negative mental health, irrespective of whether the stressor was social or academic. It was further hypothesised that the relationship between mental health outcomes and support seeking from parents, friends, and peers would depend on the stressor type. We predicted higher levels of mental health in adolescents who sought support from these three sources when faced with academic stressors (Ganim & Frydenberg, 2006). As in Visconti & Troop-Gordon (2010) we note the potential, however, for higher levels of anxiety when turning to friends for social stressors. Finally, it was hypothesised that isolation would moderate the relationship between online support seeking and mental health, such that online support seeking would be related to poorer mental health when girls also elected to cope by isolating themselves.

Method

Participants

Participants were 186 girls (*M* age = 13.64 years, *SD* = 1.03) from four independent girls' schools in Sydney, Australia. The early younger adolescent group included 78 girls (*M* age = 12.55 years, *SD* = 0.46) and the middle adolescent group included 108 girls (*M* age = 14.43 years, *SD* = 0.40). The proportion of students in each school with language backgrounds other than English ranged from 31 to 52%. This is indicative of the typical level of cultural diversity in the Sydney urban area, where 38.3% of households have a language background other than English (Australian Bureau of Statistics, 2011). All schools were in the upper quartile on the Index of Community Socio-educational Advantage (ICSEA), suggesting that the students were at relative socioeconomic advantage when compared with other students in Australia (Australian Curriculum, Assessment and Reporting Authority, 2015). The ICSEA is a measure of a school's educational advantage, incorporating student factors (such as parent occupation and education) and school factors (such as location and proportion of indigenous students).

Measures

Coping with academic and social stressors. Participants' coping strategies were assessed with the Adolescent Coping with Academic and Social Stressors Scale, which was developed for this study and adapted from the Multidimensional Measure of Coping (Skinner et al., 2013) and the Motivational Theory of Coping Scale–12 (MTC-12) (Zimmer-Gembeck, Skinner, Morris, & Thomas, 2012). In a unique adaptation for this study, online support seeking was added as a new way of coping to reflect the emerging adolescent behaviour in this area.

To control for individual differences in the adolescent girls' exposure to each stressor type, we presented them with eight standardised vignettes and measured their anticipated coping responses. The use of vignettes to measure coping is well validated in previous research (for example, Skinner et al., 2013; Zimmer-Gembeck & Skinner, 2015); furthermore, research using vignettes has shown that anticipated coping is related to mental health (Zimmer-Gembeck, 2015). Participants were presented four academic stressor and four social stressor vignettes.

Three of the vignettes depicting academic stressors were adapted from the Multidimensional Measure of Coping (Skinner et al., 2013), with minor changes made to wording. The fourth vignette, *"When I run into a problem on an important test"* was not included in this measure, as students are not usually able to seek support from parents, friends, peers, or online while completing an exam. This vignette was replaced with a new vignette, *"You are having trouble keeping up with the amount of study and homework you have to do"*, which was included because the amount of time spent on homework is a significant source of stress for young adolescents (Brown, Nobiling, Teufel, & Birch, 2011).

The four vignettes depicting social stressors were adapted from the MTC-12 (Zimmer-Gembeck et al, 2012). In the original MTC-12, participants were presented with hypothetical stressors using video excerpts of young people experiencing the stressful situation. To ensure consistency with the academic stressor vignettes, participants in this study were presented with brief written vignettes describing the stressor (e.g. *"You were excluded from an activity by your classmates"*).

For each of the eight vignettes, participants answered five questions asking how much they would use five ways of coping, rated on a 5-point scale between 1 (*not at all*) and 5 (*definitely*). The five ways of coping were seeking support from parents, close friends, and peers, online support seeking, and isolation. Figure 1 shows the five ways of coping, along with an example of a vignette and the rating scale used in this study.

You are having trouble with a subject at school.					
	Not at all				Definitely
How much would you go and seek the support or help of a parent?	1	2	3	4	5
How much would you go and seek the support or help of a close friend?	1	2	3	4	5
How much would you go and seek the support of a classmate (not a close friend)?	1	2	3	4	5
How much would you go online or text to talk to someone about it?	1	2	3	4	5
How much would you want to go off to be by yourself (or be alone)?	1	2	3	4	5

Figure 1
Example of a vignette and five ways of coping with an academic stressor

Responses to each set of four items for academic and social stressors were averaged to generate a score for each stressor. This resulted in scores for the two stressor types for each way of coping, reflecting the intended use of each way of coping in response to academic and social stressors (e.g. seeking support online for academic stressors and seeking support online for social stressors). Internal consistencies (Cronbach's alpha) for each way of coping ranged from .65 to .88, with one subscale (seeking support from peers for social stressors, α = .65) demonstrating moderate but acceptable internal reliability.

Mental health. The Depression, Anxiety, and Stress Scale – Youth Version (DASS-Y) (Szabo & Lovibond, 2013) was used as an indicator of adolecent mental health. The DASS-Y is a 24-item version of the Depression, Anxiety, and Stress Scale (DASS) (Lovibond & Lovibond, 1995a) that has been developed for use with children and adolescents in grades 3 to 12 (Szabo & Lovibond, 2013). The DASS-Y has three subscales, measuring the negative emotional states of depression, anxiety, and stress. The stress subscale is a measure of tension (including irritability, tension, and difficulty relaxing) (Lovibond & Lovibond, 1995a) rather than a measure of exposure to everyday hassles or stressful life events. Each subscale consists of 8 items. Participants rated how much they had experienced each symptom in the preceding week on a 4-point Likert scale between 0 (*not true of you*) and 3 (*very true of you*). Items in each subscale were added to give a severity rating for each emotional state (ranging from 0 – 24), with higher scores indicating an increased severity of the emotional state being experienced in the past week. Based on normative sample data, the cut-off score for normal or typical levels of depression and anxiety is 6 and for stress a score of 12. (M. Szabo, personal communication, September 4, 2014). The validity of the DASS-Y has been established in a large adolescent sample (Szabo & Lovibond, 2013). Internal reliabilities for the current study were α=.90 for the depression subscale, α=.87 for the anxiety subscale, and α=.86 for the stress subscale.

Procedure

Following approval from the institutional ethics committee and the principals of participating schools, all students and their parents were invited to participate in the study. Those

students whose parents provided informed consent to participate in the study were also asked to give informed verbal consent to participate on the day of data collection. Response rates were 21.20% for the early adolescent sample and 30.59% for the middle adolescent sample. Students who consented to take part in the study completed paper-based surveys including the Adolescent Coping with Academic and Social Stressors Scale and the DASS-Y (Szabo & Lovibond, 2013). Surveys were completed in class or pastoral care time, and were administered by the lead author. Imputation of the subscale mean was used to estimate missing values for five students: two students missed a single coping item and three students missed a DASS-Y item in their survey. Mean imputation is the recommended method of dealing with missing values in the DASS (Lovibond & Lovibond, 1995b).

Results

Preliminary analyses are presented first, including descriptive information and correlations between the study variables. Next, results from six hierarchical regression analyses are presented.

Preliminary Analysis

Before commencing our regression analyses, differences in the coping behaviours of early and middle adolescents were assessed. As shown in Table 1, middle adolescents had higher online support seeking scores than early adolescents for academic stressors, $F(1, 184) = 11.64$, $p = .001$, $\eta^2 = 0.06$. Similarly for social stressors, middle adolescents had higher online support seeking scores than the younger adolescents, $F(1, 184) = 9.37$, $p = .003$, $\eta^2 = 0.05$ (see Table 1). No other significant differences in ways of coping were found between the early and middle adolescent samples.

Second, it was also relevant to determine how many adolescents scored above the DASS-Y clinical cut-offs. For depression, 79.03% scored in the normal range, 73.12% scored in the normal range for anxiety, and 52.15% scored in the normal range for stress. This suggests that the participating adolescents had relatively high rates of stress/tension in particular (see Table 1 for scale means). There were no significant differences between the early and middle

Table 1

Descriptive statistics of ways of coping with academic and social stressors, and mental health

Variable	Early Adolescents (*n* = 78)		Middle Adolescents (*n* = 108)		Entire Sample (*n* = 186)	
	M	*SD*	*M*	*SD*	*M*	*SD*
Coping variables (Adolescent Coping with Academic and Social Stressors Scale)						
Support seeking from parents						
Academic stressors	4.10	0.76	4.01	0.87	4.05	0.82
Social stressors	3.14	0.97	2.94	1.02	3.03	1.00
Support seeking from close friends						
Academic stressors	3.21	0.87	3.42	0.87	3.33	0.87
Social stressors	3.33	0.99	3.41	0.97	3.38	0.98
Support seeking from peers						
Academic stressors	1.78	0.63	1.92	0.70	1.87	0.67
Social stressors	1.54	0.57	1.42	0.54	1.47	0.56
Support seeking online						
Academic stressors	1.73	0.76	2.16	0.90	1.98	0.87
Social stressors	1.52	0.78	1.90	0.90	1.74	0.87
Isolation						
Academic stressors	2.34	1.09	2.64	1.07	2.51	1.09
Social stressors	2.85	1.26	3.02	1.21	2.95	1.23
Mental health variables (DASS-Y)						
Depression	3.62	4.82	4.11	5.47	3.91	5.20
Anxiety	4.82	5.10	5.03	5.50	4.94	5.32
Stress/Tension	11.15	5.86	12.79	6.01	12.10	5.99

Note: n = number; *M* = mean; *SD* = standard deviation.

adolescents' levels of depression, $F(1, 184) = 0.40$, $p = .526$, $\eta^2 = 0.002$, anxiety, $F(1, 184) = 0.07$, $p = .796$, $\eta^2 = 0.000$, or stress, $F(1, 184) = 3.44$, $p = .065$, $\eta^2 = 0.018$.

Correlations. Once participants' coping styles and mental health states were determined, it was important to consider any associations between different ways of coping and mental health outcomes. These associations were used to determine whether coping behaviours according to stressor type would be included in the same or separate regression models. They are presented first for academic stressors and then for social stressors (see Table 2).

Academic stressors. Depression was negatively associated with seeking support from parents and positively related to isolation. Anxiety was positively related to online support seeking and isolation, while stress/tension was positively related to isolation. Depression, anxiety, and stress were not related to seeking support from friends or peers.

Social stressors. Depression was negatively associated with seeking support from parents and peers, and positively related to online support seeking and isolation. Online support seeking and isolation were positively associated with anxiety, replicating the findings for academic

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Table 2

Correlations between major study variables (N = 186)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Support seeking from parents for AS	-											
2. Support seeking from parents for SS	.52***	-										
3. Support seeking from close friends for AS	.19**	.08	-									
4. Support seeking from close friends for SS	.16*	.12	.52***	-								
5. Support seeking from peers for AS	.30***	.13	.46***	.31***	-							
6. Support seeking from peers for SS	.29***	.16*	.26***	.41***	.60***	-						
7. Support seeking online for AS	-.08	-.10	.36***	.18*	.32***	.09	-					
8. Support seeking online for SS	-.19**	-.26***	.17*	.29***	.10	.02	.60***	-				
9. Isolation for AS	-.28***	-.29***	-.14	-.03	-.19**	-.15*	.01	.17*	-			
10. Isolation for SS	-.15*	-.34***	-.19**	-.09	-.15*	-.16*	-.10	.12	.73***	-		
11. Depression	-.20**	-.24**	-.12	-.13	-.11	-.19**	.12	.16*	.33***	.32***	-	
12. Anxiety	-.12	-.13	-.06	-.04	-.02	-.06	.20*	.21**	.27***	.21*	.68***	-
13. Stress/tension	-.06	-.15*	-.09	.02	-.11	-.12	.01	.10	.30***	.27***	.62***	.60***

Note: *p < .05; **p < .01; ***p < .001; AS = academic stressors, SS = social stressors.

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stressors. Stress/tension was negatively associated with seeking support from parents and positively related to isolation. Depression, anxiety, and stress were not related to seeking support from friends.

Regression of ways of coping on depression, anxiety, and stress

        A series of six hierarchical regression analyses were conducted to test the predictive role of various ways of coping on participants' mental health. As the preliminary analyses indicated that, aside from online support seeking, the early and middle adolescent groups were similar in their ways of coping and mental health, the two groups were combined in the following regression analyses. Given that the various ways of coping with academic stressors were moderately-to-strongly associated with those same ways of coping with social stressors, we decided to conduct separate regression analyses for each stressor type to avoid concerns with collinearity between variables (Dormann et al, 2013). There was also evidence in the correlational analysis to suggest that relationships between coping and mental health would vary by stressor type.

        For each of the three negative emotional states, two regression analyses are presented: one for academic stressors and one for social stressors. In all six analyses, grade was entered in Step 1 (dummy coded; early adolescents as 0 and middle adolescents as 1). The five ways of coping (seeking support from parents, close friends, peers, online, and isolation) were entered in Step 2. Finally, the online support seeking x isolation interaction was added in Step 3. Significant interactions were probed using simple slopes analysis (Aiken & West, 1991; Preacher, Curran, & Bauer, 2006). Results of regression analyses predicting depression, anxiety, and stress are displayed in Tables 3, 4 and 5, respectively. Grade did not emerge as a significant predictor of depression, anxiety, or stress for either stressor type, as evident in the non-significant findings for Step 1 of each regression (see Tables 3, 4, and 5). As such, subsequent analyses focus on the results for Step 2 and 3 in each regression.

Depression. The first and second regression analyses are presented in Table 3, and examine how ways of coping with academic and social stressors were associated with depression. For academic stressors, the overall model was significant and explained 15.2% of the variance in depression, $R^2 = .152$, $F(7, 178) = 4.570$, $p < .001$. Online support seeking and isolation emerged as positive and significant predictors of depression. However, these predictors did not interact to explain any significant additional variance, thus, isolation did not moderate the relationship between online support seeking and depression for academic stressors.

For social stressors, the overall model was significant, explaining 15.7% of the variance in depression, $R^2 = .157$, $F(7, 178) = 4.751$, $p < .001$. The intended use of isolation for social stressors positively predicted depression. Again, the interaction term did not explain any significant additional variance.

Table 3
Regressions predicting depression from ways of coping with academic and social stressors

Predictor	Academic Stressors				Social Stressors			
	B	SE	β	ΔR^2	B	SE	β	ΔR^2
Step 1				.00				.00
Grade	-.14	.77	-.01		-.18	.75	-.02	
Step 2				.15***				.15***
Parents	-.44	.48	-.07		-.49	.40	-.10	
Friends	-.72	.49	-.12		-.49	.43	-.09	
Peers	-.29	.64	-.04		-.92	.73	-.10	
Online	1.05	.48	.17*		.73	.47	.12	
Isolation	1.42	.35	.30***		1.06	.31	.25**	
Step 3				.00				.00
Online x Isolation	.32	.39	.06		.26	.32	.06	
Total R^2				.15***				.16***

*Note: N = 186; * p < .05; ** p < .01; *** p < .001*

Anxiety. Results from the third and fourth regression analyses are shown in Table 4, and explore the relationships between ways of coping and anxiety. Ways of coping with academic stressors (Step 2) explained 12.8% of the variance in anxiety, $R^2 = .13$, $F(6, 179) = 4.37$, $p < .001$. In this model, online support seeking and isolation significantly predicted anxiety. The addition of the interaction term on Step 3 predicted a significant increase in variance, and the overall model predicted 15.3% of the variance in anxiety, $R^2 = .15$, $F(7, 178) = 4.59$, $p < .001$.

Table 4

Regressions predicting anxiety from ways of coping with academic and social stressors

Predictor	Academic Stressors				Social Stressors			
	B	SE	β	ΔR^2	B	SE	β	ΔR^2
Step 1				.00				.00
Grade	-.45	.78	-.04		-.41	.79	-.04	
Step 2				.13***				.08**
Parents	-.10	.49	-.02		-.06	.42	-.01	
Friends	-.80	.50	-.13		-.49	.46	-.09	
Peers	.07	.65	.01		.07	.77	.01	
Online	1.57	.49	.26**		1.21	.50	.20*	
Isolation	1.31	.36	.27***		.76	.33	.17*	
Step 3				.03*				.01
Online x Isolation	.91	.40	.16*		.35	.34	.08	
Total R^2				.15***				.09*

*Note: N = 186; * p < .05; ** p < .01; *** p < .001*

The association between online support seeking and anxiety is shown in Figure 2 for low (one standard deviation below the mean), medium (mean), and high (one standard deviation above the mean) levels of isolation At moderate and high levels of isolation, there were significant associations between online support seeking and anxiety ($b = 1.57, p = .002; b = 2.55, p < .001$, respectively). This indicates that adolescents who sought more support online for academic stressors had higher levels of anxiety, if they also used a moderate to high level of isolation to cope with these stressors. In contrast, simple slopes analysis indicates that the slope
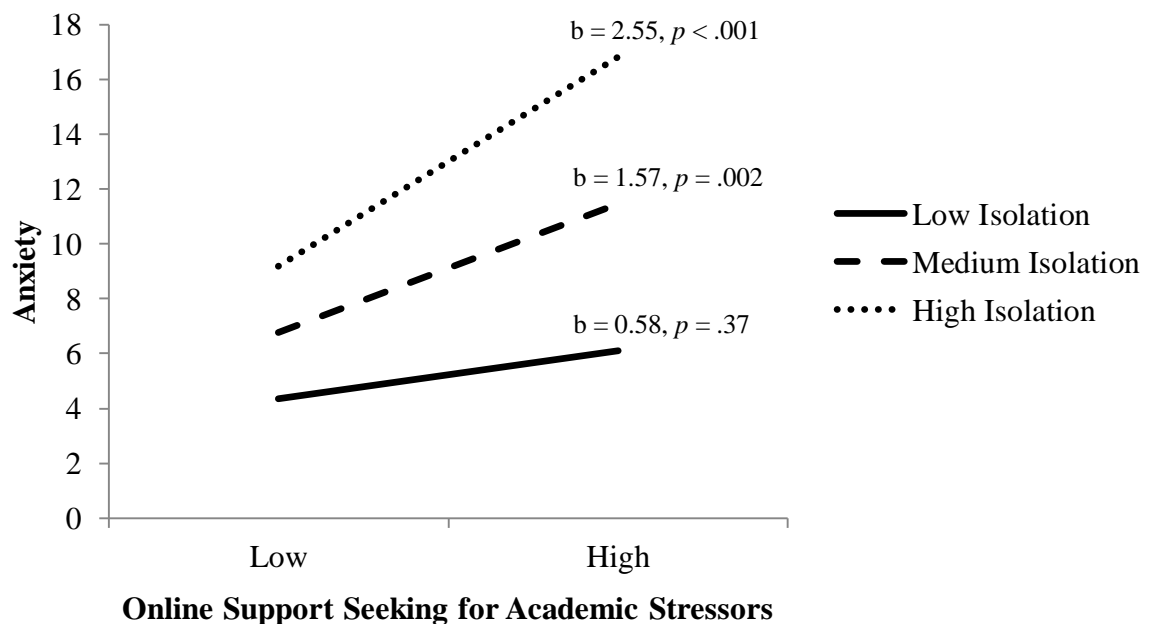
Figure 2

Interaction effect of online support seeking and isolation for academic stressors on anxiety

of the line for low isolation was not significantly different from zero ($b = .58$, $p = .375$), which suggests that there was no relationship between online support seeking for academic stressors and anxiety when the intended use of isolation for these stressors was low.

For social stressors, the overall model was significant, explaining 9.0% of the variance in anxiety, $R^2 = .09$, $F(7, 178) = 2.50$, $p = .018$. Online support seeking and isolation as ways of coping with social stressors significantly predicted anxiety. The addition of the interaction term on Step 3 did not explain any additional variance, indicating that there was no moderating effect of isolation on the relationship between online support seeking for social stressors and anxiety.

Stress/Tension. Results from the final two regressions are shown in Table 5, and examine how ways of coping with academic and social stressors were associated with stress/tension. For academic stressors, the overall model explained 11.2% of the variance in stress, $R^2 = .11$, $F(7, 178) = 3.19$, $p = .003$, and for social stressors the overall model explained 10.1% of the variance in stress, $R^2 = .10$, $F(7, 178) = 2.86$, $p = .008$. In both models, the intended use of isolation significantly predicted stress/tension. The addition of the interaction term did not explain any significant additional variance in stress/tension for either academic or social stressors.

Table 5
Regressions predicting stress/tension from ways of coping with academic and social stressors

Predictor	Academic Stressors				Social Stressors			
	B	SE	β	ΔR^2	B	SE	β	ΔR^2
Step 1				.02				.02
Grade	1.41	.90	.12		1.18	.89	.10	
Step 2				.09**				.08**
Parents	.43	.57	.06		-.29	.47	-.05	
Friends	-.40	.58	-.06		.46	.51	.08	
Peers	-.65	.75	-.07		-.95	.86	-.09	
Online	.22	.56	.03		.09	.56	.01	
Isolation	1.57	.41	.28***		1.17	.37	.24**	
Step 3				.00				.00
Online x Isolation	.41	.46	.06		.15	.39	.03	
Total R^2				.11**				.10**

*Note: N = 186; * p < .05; ** p < .01; *** p < .001*

Discussion

The current study examined the relationship between intended ways of coping (seeking support from parents, friends, and peers, online support seeking, and isolation) and self-reported

mental health (depression, anxiety, and stress/tension). As hypothesised, intended online support seeking was concurrently related to mental health concerns. Specifically, intended use of online support seeking for academic stressors was related to higher levels of depression. Intended online support seeking for academic and social stressors was related to increased levels of anxiety. Isolation was also related to increased levels of depression, anxiety, and stress/tension when used for either stressor type. When used for academic stressors (but not social stressors), isolation moderated the relationship between online support seeking and anxiety such that online support seeking was related to increased anxiety when used in conjunction with moderate and high levels of isolation. Thus, while online support seeking and isolation were each independently associated with concurrent mental health concerns, when used together to cope with academic stressors, the relationship between online support seeking and anxiety was strengthened.

A number of factors specific to the online communication context may explain the direct relationship between intentions to seek support online and poorer mental health. First, the decreased social cues that are available in online exchanges can result in interactional partners behaving differently than they would in person. In some cases, this may manifest as harsh criticisms and other negative responses (Suler, 2004). In turn, negative responses may relate to negative mental health outcomes for the recipient (McCloskey et al., 2015; Valkenburg, Peter, & Schouten, 2006). Secondly, while online support seeking lends itself to seeking informational support, the ability of an online environment that is largely text-based to provide emotional support has recently been questioned (Trepte et al., 2015). Further, support offered online has been found to be less effective in reducing worry and uncertainty than support offered in person (Rains, Brunner, Akers, Pavlich, & Goktas, 2016). Thus, even when online support is framed positively, the recipient may not experience the same benefits as when seeking support face-to-face. As such, future research can investigate whether the relationship between online support seeking and mental health varies according to the type of support sought for different stressor types, and examine the nature of adolescents' experiences when seeking support online. Another

important area of future study will be to extend these findings by determining whether level of educational functioning influences the relationship between online support seeking for academic stressors and mental health.

The second major finding of this study was the link between intended isolation and depression, anxiety, and stress/tension, providing support for the notion that isolation is a maladaptive way of coping with everyday stressors. Several studies have found that isolation or avoidance when used to cope with stress leads to later internalising problems and reduced likelihood of social re-inclusion following peer rejection (Seiffge-Krenke, 2000; Zimmer-Gembeck, 2015). Furthermore, concealment of academic problems has been found to predict decreased school engagement (Marchand & Skinner, 2007), which is an important predictor of wellbeing in adolescents (Carter, McGee, Taylor, & Williams, 2007; Van Ryzin, Gravely, & Roseth, 2009). Thus, if adolescents choose to isolate or withdraw following social or academic stress, this may in turn predict the internalizing problems seen in this study. Isolation and withdrawal may also have a transactional relationship with emotional distress whereby emotional distress leads to increased use of isolation, which in turn leads to higher levels of emotional distress (Seiffge-Krenke, 2000; Zimmer-Gembeck, 2015). As such, isolation may act as both an outcome and an antecedent of emotional distress.

Finally, for academic stressors, the relationship between intended online support seeking and anxiety was moderated by isolation. As hypothesised, the relationship between online support seeking and anxiety was even stronger in the context of moderate and high levels of isolation. The use of isolation in response to academic stressors may be particularly problematic when it is accompanied by online support seeking. It is possible that isolated individuals may already experience higher levels of anxiety, or they may lack close relationships from which they can seek support face-to-face. This could drive them to seek support from less close or less familiar associates online. While it is not possible to disentangle these two possibilities, our correlation analysis nonetheless confirmed that intentions to use isolation to cope with academic stressors was negatively associated with face-to-face support seeking from traditionally adaptive

sources of support (such as parents, friends and peers). Thus, irrespective of the precise mechanisms at play, it is clear that the combination of online support seeking and isolation places adolescent girls at particular risk.

Support seeking is conceptualised as an adaptive way of coping and as such, intentions to seek support from parents, friends, or peers were not significant predictors of depression, anxiety, or stress in this study. Instead, the final models seem to suggest that online support seeking and isolation were more strongly related to adolescent mental health concerns. This suggests that going online to seek support may not be as beneficial or adaptive as other forms of support seeking face-to-face.

Limitations, implications, and conclusions

While we highlight the important role of online support seeking and isolation in mental health, our ability to generalise from our findings is limited in two ways. First, as noted in the Method section, we chose to focus specifically on female participants. As such, our findings cannot be generalised to boys. Given emerging evidence for differences in relationships between online communication and wellbeing for males and females (for example, Brandtzæg, 2012; Frison & Eggermont, 2016), we recommend that future research include male participants to examine the implications of online support seeking for males. Second, our participants came from socioeconomically advantaged school backgrounds. Recent findings suggest that adolescents from higher income families are more likely than those from lower income families to own a smartphone, tablet, or have access to a desktop or laptop computer (Lenhart, 2015), for example, and may therefore have greater opportunity to interact online. Adolescents from socioeconomically advantaged backgrounds are also more likely to report mental health problems (Lessof et al., 2016), and may therefore have additional need to seek support in the first place. While these findings may indicate a greater need or opportunity to seek support online for advantaged youth, it is quite possible that relationships between mental health and online support seeking are consistent regardless of socioeconomic status. Further research to confirm these relationships in a broader sample of participants is warranted.

In this study, online support seeking was concurrently associated with experiencing self-reported higher levels of depression and anxiety; it is possible that adolescent girls who are already suffering poor mental health prefer to seek support online. Scholars have suggested that individuals who experience poor mental health have a preference for communicating online, which in turn leads to more detrimental outcomes (Caplan, 2003). It follows that these individuals may also prefer to seek support online. While longitudinal studies are needed to determine the direction of effects, we suggest that the influences between ways of coping and mental health outcomes may be bidirectional. We also note that our measure of depression, anxiety, and stress/tension was a self-report measure. Future studies can include multi-informant approaches to confirm these findings.

Our measure of coping measured intentions to cope rather than actual coping responses. While this is an established way of measuring coping that allows for standardisation of stressors across participants (Skinner, Pitzer, & Steele, 2013; Pitzer & Skinner, 2017), it is possible that actual coping responses are different from intended responses (Zimmer-Gembeck, 2015). Further, our online support seeking item, "How much would you go online or text to talk to someone about it?" was worded differently to our offline support seeking items, "How much would you go and seek the support or help of…". While it is likely that talking to someone about a stressor captures support seeking behaviours, this measurement approach should be validated in future studies.

Finally, although we assessed the support seeking context of online support we did not assess who adolescents intended to seek support from online. While most adolescents' online interactions are with friends that they know in person (Reich et al., 2012), it is also possible that some adolescents may seek online support from parents or strangers. Given our finding that informal online support seeking is related to increased depression and anxiety, it is important that future research examine the different sources of support available in online contexts and the quality of this support. Our measure of online support seeking also did not distinguish between

private online support seeking and more public broadcasting of requests for help; these two different online contexts may have distinct relationships with mental health.

The current study makes an important contribution to our understanding of how adolescent girls' ways of coping are related to their levels of mental health concerns. This study is the first to investigate online support seeking as a way of coping with academic and social stressors in combination with isolation. These findings suggest that intervention efforts that aim to assist adolescents in developing adaptive ways of coping with stress, and to educate adolescents, parents, and educators in adaptive ways of using online communication platforms would be worthwhile. One important implication of these findings, for example, is that parents and teachers should be particularly wary of encouraging adolescents to discuss academic problems online. This study also confirms that stressor type is an important factor to consider in examining relationships between adolescents' ways of coping and mental health. Future research can extend these findings by examining online support seeking within a broader context of coping responses (such as problem-solving, rumination, and distraction), and by confirming the generalizability of these findings for other populations.

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8. Adolescents' perspectives on the affordances and limitations of online support seeking

The findings detailed in Chapters 6 and 7 provide evidence for online support seeking being a problematic way of coping with academic and social stressors. In Chapter 6, it was reported that girls who sought less support from parents sought more support online. The findings in Chapter 7 indicate that girls who sought more support online also experienced higher levels of anxiety (both stressor types) and depression (academic stressors only). In order to identify specific online support seeking behaviours that may be useful or problematic, phone interviews were conducted with a subsample of adolescent girls. The findings from these interviews are detailed in this chapter.

This chapter aims to explore adolescent girls' perceptions of the affordances and limitations of online support seeking. It also contains a brief section focused on the online support seeking behaviours of the larger project sample, including girls' reports of how frequently they seek informal support online. The research questions address in this chapter are:

- How frequently do girls report seeking support online?
- Why do adolescent girls seek support online?
- What are the affordances and limitations of online support seeking identified by adolescent girls?

The chapter is presented as an empirical paper that has been prepared for submission to *Computers in Human Behavior*. Please note that American English spelling is used to conform to the journal's style requirements.

Adolescent Girls Seeking Support Online: Affordances and Limitations

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Abstract

While online communication is proliferating, we do not yet know the extent to which adolescent girls use online contacts for support. Girls' reasons for seeking support online and their perceptions of online support quality are also unexplored. To determine the prevalence of adolescent girls' informal online support seeking we therefore used a self-report questionnaire (N = 186, M age = 13.64 years). Online support seeking from friends was extremely common, with 73.66% seeking emotional support and 85.48% seeking academic support. Next, to determine girls' perceptions of online support seeking, we conducted semi-structured interviews (n = 31, M age = 13.95 years). Themes of friendship and emotional self-regulation emerged as perceived benefits. Girls perceived online support to be poorer in quality than face-to-face support, and were particularly concerned about limitations to privacy and the disclosure of confidential information. Several maladaptive behaviors such as using online support seeking to conceal or avoid emotion were identified. Implications for supporting adolescents to effectively seek support online and offline are discussed.

Keywords: online support seeking, adolescent girls, support seeking, coping, qualitative

Adolescent Girls Seeking Support Online: Affordances and Limitations

Early research in the field of support seeking demonstrated that adolescent girls are more likely to seek support than boys (Eschenbeck, Kohlmann, & Lohaus, 2007; Fallon & Bowles, 1999). More recent research suggests that girls are also more likely to receive support from online sources, (Lenhart, Smith, Anderson, Duggan, & Perrin, 2015), and are more likely to engage in online support seeking (Bullot, Cave, Fildes, Hall, & Plummer, 2017). Although research has identified online support seeking behaviours of girls, the extent of online support seeking and reasons for seeking support online is less understood. There is also limited research on the affordances and limitations of online support seeking.

While adolescent girls' explanations for seeking support online have not been investigated directly, past research highlights several potential reasons. First, online communication platforms may facilitate greater access to friends. Adolescents show high levels of overall engagement with online platforms, particularly with their friends (Lenhart, 2015; Reich, Subrahmanyam, & Espinoza, 2012). Friends are an important source of support in adolescence, and may be perceived as having particular expertise when discussing friendship problems or schoolwork (Zimmer-Gembeck & Skinner, 2011). Adolescents prefer to seek support for interpersonal stressors from friends than from parents (Wilson, Deane, Ciarrochi, & Rickwood, 2005), and also report seeking academic support from friends (Altermatt, 2007; Ryan & Shim, 2012). Adolescent girls demonstrate a stronger preference than boys for seeking support from friends (Altermatt, 2007; Boldero & Fallon), and may turn to online platforms to do so.

Second, research also shows that adolescents prefer informal to formal sources of support, and use informal support seeking more regularly (Schonert-Reichl, Offer, & Howard, 1995; Wilson et al., 2005). Although formal sources of online support exist, commonly-used online platforms are particularly focused on informal communication and may facilitate informal support seeking.

Third, many adolescents report finding that self-disclosure is easier online than in face-to-face contexts (Schouten, Valkenburg, & Peter, 2007). When asked why, adolescent boys

suggest that online self-disclosure protects them from feeling vulnerable when discussing their feelings and offers them more control over their expressions (Best, Gil-Rodriguez, Manktelow, & Taylor, 2016). This explanation is supported by the hyperpersonal communication model, in which reduced social cues in online exchanges stimulate self-disclosure through an 'online disinhibition effect' (Rains, Brunner, Akers, Pavlich, & Goktas, 2017; Suler, 2004; Walther, Van Der Heide, Ramirez, Burgoon, & Peña, 2015). Thus, a perception of reduced interpersonal costs (Lim, Teo, & Zhao, 2013) or reduced stigma (DeAndrea, 2015) may facilitate online support seeking.

Notwithstanding these possible benefits, research also suggests several limitations may be associated with online support seeking. For example, negative feedback online may lead to decreases in self-esteem and poorer mental health (McCloskey, Iwanicki, Lauterbach, Giammittorio, & Maxwell, 2015; Valkenburg, Peter, & Schouten, 2006). Reflecting the cues-filtered out perspective (Walther et al., 2015), reduced social cues in online contexts may also undermine the provision of support (Lewandowski, Rosenberg, Parks, & Siegel, 2011) and increase worry and uncertainty when seeking support online (Rains et al., 2017). Worryingly, adolescent girls are more likely to report negative experiences on social networking sites than any other age group (Lenhart, Madden, Smith, Purcell, Zickuhr, & Rainie, 2011).

Given the potential affordances and limitations, this study aims to understand the nature of these affordances and limitations, and the extent of girls' online support seeking behaviors. There is little research exploring adolescent girls' reasons for online support seeking, or their perceptions of benefits or limitations of online support seeking. As such, the current study investigated: (i) patterns of online support seeking, (ii) preferences for online or in-person support seeking, (iii) reasons for seeking support online, and (iv) girls' perceptions of the benefits and limitations of online support seeking. While we employed a mixed-method design, the current study is largely focused on the qualitative data to generate a deep understanding (Smith, 2015) of adolescent girls' use of online support seeking.

Methods

Participants

Participants were 186 early and middle adolescent females (*M* age = 13.64, *SD* = 1.03, range = 10.29 – 15.33 years) in Grades 7 and 9 drawn from four Independent Girls' Schools in Sydney, Australia. This population was selected as part of a larger study of support seeking behaviours and mental health in adolescent girls. All four schools were high-fee schools, and girls were at relative socioeconomic advantage in comparison to other students in Australia (ACARA, 2015). They were therefore more likely to be 'connected' online, due to access to multiple devices (Lenhart, 2015), and at heightened risk of wellbeing concerns (West & Sweeting, 2003): making them a particularly important population in which to examine online support seeking behaviours. All participants completed the online support seeking and communication measures. A representative sample of girls (*n* = 31) ranging from high to low online support seeking frequencies participated in an interview.

Materials and Procedure

Questionnaire. To determine the frequency of adolescent girls' online support seeking and communication, participating students (*N* = 186) completed a questionnaire on paper during a dedicated class period at their school. Following approval by the institutional ethics committee and school principals, written consent was sought from parents and students. The questionnaire asked participants how often they: (a) chatted to friends online, (b) sought academic support from friends online, and (c) sought emotional support from friends online. Frequency was reported on a 6-point Likert scale where 1 = *not at all* and 6 = *several times a day*.

Interviews. To determine adolescent girls' attitudes and experiences of online support seeking, a representative subsample of 31 girls were invited to complete a one-on-one semi-structured interview. Girls were selected because they had varying frequencies of online support seeking, from low (once per week or less) to high (once per day or more). Girls who did not use online support seeking at all were excluded. All girls gave verbal consent before the interview began. The interviews were conducted by phone and recorded and transcribed verbatim. At the

beginning of each interview, the interviewer identified that the focus of the interview was on how people use technology to ask for help, advice, and emotional support. As the typical adolescent uses a range of online communication tools (Lenhart, 2015), we made the scope of online communication tools very broad by defining technology as social media, text messaging, apps, and instant messaging. Participants were asked about the types of problems or issues they sought support for from their friends online, the modes of support seeking they most preferred, and why. They were also asked about any problems or difficulties that they had experienced when seeking support online.

Interview Analysis

Interview transcripts were checked for accuracy and data was analysed using thematic analysis (Braun & Clarke, 2006). Peer debriefing was undertaken to ensure the trustworthiness of the analysis (Creswell & Miller, 2000). We used a phenomenological approach because our aim was the explore adolescent girls' experiences and perspectives of online support seeking. Consistent with this aim, we used inductive analysis to allow themes to be driven by the data (Thomas, 2006). The first author generated an initial coding scheme after review of all transcripts. The first two authors independently coded responses to 54.8% ($n = 17$) of the transcripts using the initial coding scheme. Differences in the application of the codes were then discussed and codes were added or modified to develop the final coding scheme. Application of the final coding scheme resulted in a pooled Cohen's kappa value of 1.00.

Results

Online support seeking context and frequency

To determine patterns of online support seeking and communication amongst the adolescent girls we drew on the questionnaire. To help contextualize our subsequent interview analyses, we also provide a comparison of questionnaire responses between the sub-sample interviewed and the larger study sample. In particular, we note that the frequency of online communication and support seeking was naturally higher in the interviewed subsample (which excluded those who

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Table 1
Online behaviours of whole study and interview participants

Online communication use variables	Entire Study Sample (*N* = 186)		Interview Sample (*n* = 31)	
	N	%	*n*	%
Number of online communication tools used				
1 – 3	70	37.63	12	38.71
4 – 6	96	51.61	15	48.39
7 – 9	15	8.06	3	9.68
10 +	3	1.61	1	3.23
Online communication tools used				
Text/iMessage*	177	95.16	29	93.55
Instagram	132	70.97	21	67.74
Snapchat	125	67.20	20	64.52
Facebook	59	31.72	12	38.71
Kik	78	41.94	11	35.48
Frequency of chatting to friends online^				
Not at all	9	4.84	1	3.23
Less than once a week	21	11.29	2	6.45
Once a week	14	7.53	1	3.23
Once every 2-3 days	34	18.28	4	12.90
Once a day or more	108	58.06	23	74.19
Frequency of seeking academic support online^				
Not at all	27	14.52	4	12.90
Less than once a week	55	29.57	6	19.35
Once a week	31	16.67	7	22.58
Once every 2-3 days	47	25.27	7	22.58
Once a day or more	26	13.98	7	22.58
Frequency of seeking emotional support online^				
Not at all	49	26.34	6	19.35
Less than once a week	75	40.32	9	29.03
Once a week	27	14.52	4	12.90
Once every 2-3 days	16	8.60	3	9.68
Once a day or more	19	10.22	9	29.03

Note: * = iMessage uses wifi or cellular data networks to send text and picture messages and is functionally the same as text messaging. ^ = Although a 6-point Likert scale was used for these items, "once a day or more" combines "once a day" and "several times a day" on the scale to simplify reporting.

did not seek support online). Online communication and support seeking were both prevalent. Over half (58.06%) communicated with their friends online daily or multiple times per day, using up to 11 different online communication tools (see Table 1). Text/iMessages were the most commonly used communication tool, followed by Instagram, Snapchat, Kik, and Facebook.

Most girls sought both academic support (85.48%) and emotional support (73.66%) online; however frequencies varied. On average, academic support was sought once per week and emotional support online less than once per week. A small proportion of girls reported daily seeking of academic support (13.98%) and emotional support (10.22%) (Table 1).

Preferred mode of seeking support

Over two-thirds (67.74%) of the girls interviewed ($n = 31$) identified an overall preference for seeking support in-person rather than online (reasons for this preference are presented below). Approximately one-quarter (25.81%) did not display a preference for seeking support online or in-person, with most viewing the support seeking modes as being the same. Two (6.45%) girls identified a preference for seeking support online rather than in-person, with both girls reporting emotional self-regulation as a specific benefit of seeking support online.

Reasons for seeking support online (benefits and limitations)

The interviews identified stressors in both the social and academic domains as reasons for seeking support online. Social stressors included friendship problems (e.g. disagreements, rumours), family issues, or romantic difficulties. Academic stressors included difficulties with homework or assignments, and missing work when absent from school. Few reported (9.68%) that they had sought support from exclusively online contacts. This suggests that most girls sought support online from people that they knew in-person (i.e. friends, peers, or family).

Across the interviews, we coded participants' explanations for why they sought support online (benefits) and about any problems or difficulties they had encountered (limitations). Four specific themes emerged (see Table 2). Most interviewees (80.65%) experienced emotional support after seeking support online, and identified specific benefits of online support seeking including access to friends, academic help seeking, and emotional self-regulation. Similarly,

most interviewees also recognised significant limitations in the quality of support (83.87%). Almost one-third (29.03%) had received negative feedback or did not feel supported following a request for support. Each of the four themes are described below and examples provided in Table 2.

Emotional self-regulation. Emotional self-regulation was the most significant theme to emerge across all interview accounts, with 64.52% girls reporting the use of online support seeking to manage and regulate their emotions and 29% reporting greater emotional wellbeing (e.g. reduced stress and anger) after receiving support online. The key affordance perceived by five (16.13%) girls was a perception that they did not have to regulate their emotional expression online and could be more disinhibited in their expressions:

> "If we're texting, it's kind of more cowardly. You can say whatever you want to
> say."

One explanation that girls gave for this perception was that they felt less embarrassed expressing their emotions online. They were also less threatened by the potential to receive angry reactions from their friends, and were therefore able to avoid feeling bad themselves: "switching off straight away" so that their friend "might have calmed down by the next time you Skype them or talk to them".

In contrast to the five girls who discussed the possibility of disinhibition, seven girls (22.58%) specifically discussed the potential to monitor, mask, or otherwise control their emotional displays online:

> "I might prefer to talk online if I didn't want to be really emotional but I still
> wanted to talk to somebody."

> "…it's probably harder to put it in words [when face-to-face] because it's not
> like typing where you can wait as long as you want to figure out what you're
> going to say."

A further nine girls (29.03%) stated that by discussing their problems with friends online they were better equipped to cope with these problems. Friends gave advice that

Table 2
Summary of themes and subthemes identified in girls' reasons for seeking support online

Theme	Sub-theme	Example quote	
		Perceived benefit	Limitation
Emotional self-regulation	Regulation of emotion	*You feel like you can say pretty much anything you want [online] but in real life you have to be more careful about what you say.*	*Because you keep talking about it you get more angry.*
	Avoidance of emotional displays	*Your friends don't really have to see you getting emotional [online].*	*n/a*
	Coping with emotion	*Like especially if I've had a bad day they say everything will be ok, and that makes me feel better.*	*Not as good as I would feel if I was talking to them face-to-face.*
	Online self-disclosure in friendships	*I find that like in some situations it [online] could be easier if you're not really sure how to express your feelings.*	*[in-person] you can just explain what you need better, and um it's just a lot easier to talk about it.*
Online support seeking and friendship expectations	Trust in online interaction	*Online it's like "oh I can tell this person something and I trust them".*	*I'd rather speak to them face-to-face, because they can screenshot it [online exchanges].*
	Expectation of support	*If you need something, say on a weekend, you can text them and they can help you straight away.*	*n/a*
	Effect of online support seeking on friendship strength	*If anything it kinda brings us closer… it helps us understand each other and what we need help with.*	*They'd get awkward, like "why didn't you just do it to my face?".*
Academic support seeking		*If I didn't understand the question they would help me answer it properly, or just help me in general with my homework*	*n/a*
Quality of online support		*The person has time to think about their reply… they can say what they know will make you happier.*	*It's only being communicated through words rather than through all of the other things that we as humans use to communicate.*

reduced feelings of stress and anger, provided distraction, and were viewed as important partners in working through concerns to achieve emotional relief:

"Just talking to my friends [online] usually makes me feel better than just thinking about things alone."

While three girls (9.68%) identified face-to-face support as more effective in reducing negative emotions than online support, online support seeking was still useful when their friends were unavailable in-person:

"Sometimes just letting it out even if it's online it makes you feel better, but I still think I prefer to do it in person."

Online support seeking and friendship expectations. Expectations of friendship were frequently raised as benefits and limitations in girls' reports of online support seeking. An expectation of trust in online exchanges between friends was raised by over half ($n = 16$, 51.61%) of the girls. Only two reported that they felt that their friends were honest and trustworthy online. The remaining fourteen girls reported an expectation of trust but some level of concern about their ability to trust their friends online, mainly because their personal conversations could be easily shared with others, particularly if a friendship turned sour:

"I trust them but like, you never know when they might turn on you and use things against you."

Trust concerns left some adolescents cautious about the advice their friends provided online, and meant that others avoided talking about personal issues online entirely:

"You don't know their facial expressions… you just know that they're typing something, but it could not be the truth."

"I won't really talk about problems by text, because then they can copy it."

Self-disclosure of problems and emotions to friends was raised by fifteen (48.39%) girls. More girls ($n = 12$, 38.7%) viewed online platforms as a limitation to self-disclosure in their friendships, or being less effective than in-person opportunities: "It's easier to express your emotions when you're actually in [face-to-face] contact with the person.".

Some were concerned about miscommunication in online contexts: "People can take things the wrong way on social media". In contrast, six girls reported that online platforms provided opportunities for enhanced self-disclosure, both because they had additional time to control and construct emotional responses and because they were more comfortable communicating difficult emotions online.

Expectations of immediate support were discussed by nine (29.03%) girls. These girls expected their friends to provide immediate academic or emotional support whenever required:

"It's an immediate response, and you can talk about it straight away rather than wait until the next day."

Some girls ($n = 6$, 19.35%) reported that online support seeking had strengthened their relationships with their friends, because they were able to communicate with their friends more frequently:

"You become more close with your friends, because you can talk to them more often, and they can help solve your problems a lot more."

In contrast, three (9.68%) girls identified that seeking support from friends online made their relationships seem weaker due to their expectation about personal self-disclosure and unease with online communication:

"It makes it seem like you're not as close as you think you are, because if you were really close friends, then you obviously just feel comfortable asking them to their face."

Academic support seeking. Most girls (87.10%) sought academic support and many perceived this as a key benefit of online support. These benefits included increased understanding (e.g. "[If] I don't understand a maths concept and I ask them, then I have a better understanding for the next lesson.") and information about homework requirements (e.g. "I say something like "what page is it for the homework?"). Some specifically identified friends as providing expedited or easy homework assistance: "It's easier to just text them and ask them what's this answer, or can I have help with this question." Others used online support seeking

from friends to catch up on material they may have missed: "If I miss a class at school, I'll ask for help on the topic I missed out on." These girls perceived that online support seeking provided valued academic assistance.

Quality of online support. The final theme emerging from our interviews related to the quality of online support. Multiple responses within the themes of friendship and emotional regulation above hint at differences in the quality of support provided online and face-to-face, and girls also discussed these differences in quality explicitly. For some girls, the benefits of online support seeking included being able to obtain positive support or advice, gain friends' perspectives on their problems (e.g. "It helps me get another viewpoint."), and giving friends time to think about their reply before giving advice.

For many girls ($n = 18$, 58.06%), however, the quality of the support provided online was limited. Reduced social cues and inability to see physical responses reduced the emotional comfort that could be provided by either party online: "You can't see their facial expression, you can't give them hugs and stuff… so I think in-person is better than online.". In-person support seeking was viewed as more effective for complicated problems: "If you need a lot of help they can go through it with you [in-person]", or when they preferred parental input: "My parents' advice is more experienced". Consistent with these perceived limitations, six (19.35%) girls reported specific instances of poor quality advice in response to online support seeking attempts: "I thought these people would be able to understand me, but they didn't so I felt really let down… [If it were in-person] I think they would have thought more about what they were saying and how that would affect me emotionally."

Discussion

This study was designed to assess relatively unexplored aspects of adolescent online support seeking. Building on prior research suggesting that adolescent girls engage in both online and in-person support seeking, the first goal of this study was to identify the frequency with which girls report seeking informal support online and their preferences for online or in-

person modes of support seeking. The second goal of this study was to explore girls' explanations of the benefits and limitations of online support seeking.

First, the results of the study demonstrate that online support seeking is a common feature in the life of most early to middle adolescent girls. For most, however, support seeking was not a daily occurrence. This suggests that many girls may continue to rely on in-person support seeking at the same time as engaging online, or employ other ways of coping with stress. Previous research has similarly found college students were more likely to seek support in-person, rather than by text message or online (Rife, Kerns, & Updegraff, 2016). The self-reported frequency of online support seeking suggests at least 10-14% of girls are turning to online sources of support every day. While no research to date has considered the outcomes for adolescents who do heavily use online support seeking, recent research with college students suggests those with higher levels of perceived online support were more at risk of developing problematic internet use (Burnell & Kuther, 2016).

When adolescent girls in this study did seek support online, interview data suggests that they were most likely to engage with existing friends. Contrary to concerns about adolescents interacting with strangers online (boyd & Hargittai, 2013), relatively few sought support from people they only knew online. This finding aligns with previous work that shows that adolescents mostly communicate with their existing friends online (Reich et al., 2012; Underwood, Ehrenreich, More, Solis, & Brinkley, 2015)

The girls also nominated the ability to obtain emotional and academic support from friends as affordances of online support seeking. These affordances reflect common expectations of friendship in adolescence, such as the provision of companionship, emotional support and practical assistance (Bukowski, Motzoi, & Meyer, 2009). However, it is also a concern that some of the limitations reported by adolescents suggest that online communication may undermine expectations of friendship. Of the girls interviewed, only 6.45% perceived they could trust their friends online and 38.7% thought self-disclosure was limited by online platforms. Thus, these findings suggest that while normative aspects of adolescent friendships transfer to online

contexts (Yau & Reich, 2017), there may be some friendship-based challenges for girls to navigate when seeking support online.

The most common reason for online support seeking from these friends was for academic support. This finding extends previous research that has shown adolescents turn to peers when faced with academic difficulties (Altermatt, 2007; Ryan & Shim, 2012). In the case of homework, this allowed them to access help immediately without needing to wait until the next class. A small group of adolescents reported more problematic help seeking, whereby they simply asked for answers to homework rather than for assistance to solve problems. This expedient help seeking (Kiefer & Shim, 2016) is related to poorer academic achievement over time (Ryan & Shim, 2012), and may be more common in online settings where adolescents indicate a preference for the immediacy of help.

The second goal of this study was to explore the developmental insights that might be gained by asking girls' own explanations of the benefits and limitations of online support seeking. A critical finding of this study was that adolescent girls viewed online support to have either benefits or limitations for emotional regulation. Paradoxically, the perceived emotional benefits of online support seeking voiced by some adolescent girls may raise developmental concerns. For example, 22.58% sought support online to avoid displaying negative emotions in front of their friends. This may be an example of the increasing development of "meta-emotions" in adolescence, whereby some adolescents may feel embarrassed about their emotions (Skinner & Zimmer-Gembeck, 2016). However, as previous research has shown that emotional suppression is associated with depression in adolescents (Betts, Gullone, & Allen, 2009), the tendency to seek support online to avoid emotional displays may be a more concerning behaviour that warrants further research attention. We also found evidence of the online disinhibition effect (Suler, 2004), whereby some adolescents felt that they did not have to regulate their emotional expression in online support seeking. It is possible that these unregulated expressions could manifest as over-sharing or inappropriate disclosures, thus leading

to negative reactions from peers (High, Oeldorf-Hirsch, & Bellur, 2014; Radovic, Gmelin, Stein, & Miller, 2017).

Importantly, most adolescents were cognizant of the limitations of online support seeking. As increased metacognitive capacities develop in adolescence (Skinner & Zimmer-Gembeck, 2016), cognizance of limitations may reflect an increased ability to reflect on and critique online support seeking as a coping strategy. The limited quality of the emotional support provided online was reported by more than 50% of the girls, and most perceived online support lower in quality than face-to-face support. In keeping with the cues-filtered-out perspective (Walther et al., 2015), reduced social cues and lack of physical contact limited the perceived quality of online emotional support. Similarly, previous studies that have found that higher levels of emotional support are perceived in face-to-face contexts rather than online (Trepte, Dienlin, & Reinecke, 2015), and in-person support is more effective at reducing worry and uncertainty than online support (Rains et al., 2017).

Second, the nature of the support or feedback itself was problematic for some adolescents. While recent research suggests that perceptions of high online support confer important mental health benefits (Frison & Eggermont, 2015), some adolescents in this sample did not always feel supported in the informal online contexts investigated in this study. Future research is needed to investigate the individual differences or strategies that reduce the likelihood of receiving poor quality support online, together with possible ways of enhancing these online support-seeking strategies particularly in informal contexts that may be less regulated or monitored. For example, some reported using online support seeking quite selectively; others identified strategies such as carefully editing their online disclosures to minimize their risk. In sum, over three-quarters of the adolescents displayed knowledge of when it might or might not be appropriate to seek support online.

Limitations

While this study is the first to identify patterns of online support seeking amongst adolescent girls, there are several important limitations. First, participants were purposively

drawn from Independent Girls' Schools due to an interest in girls' online support seeking behaviours. In the Australian context, independent schooling suggests a relatively socioeconomically advantaged population. This may have influenced their reasons for seeking support, as research suggests that academic stressors may be amplified in such a population (Spencer, Walsh, Liang, Mousseau, & Lund, 2018; West & Sweeting, 2003). Future studies with more diverse samples could consider the nature of online support seeking in both genders and diverse socioeconomic groups. Second, our study relied on participants' reflections on how frequently they sought support online. With several support seeking behaviours now identified, daily diary studies could extend these findings by gathering adolescents' accounts of online support seeking experiences as they happen. Daily diaries have been used to investigate online support seeking in young adults (Rife et al., 2016), and offer an additional avenue through which a more nuanced understanding of adolescent online support seeking can develop. Such daily diary studies may also be used to examine whether adolescents engage in different online support seeking behaviours depending on the online platform used. Third, it is important to note that our sampling method only included girls who engaged in some level of online support seeking. While this was necessary to ensure our interview questions were relevant to the participants, it is possible that adolescents who elect to avoid online support seeking entirely are more cognizant or identify other limitations of seeking support online. These alternative perspectives may extend the understandings derived from the current study, and could be included in future study samples.

Conclusion

These preliminary insights offer avenues for further research that explore both the significance and the developmental implications of online support in adolescent lives. This study identified that online support seeking is a relatively normative experience in the everyday lives of adolescent girls and most found this support useful. There were few indications of serious concerns reported by girls, including a limited number of reports of seeking support from strangers and limited reports of negative events. It is concerning that girls perceived emotional

avoidance and disinhibition as a benefit of online support seeking. These findings have implications for future study of the nature and type of informal online contexts that offer the greatest affordances or limitations to the provision of social support, and the development of interventions to support adolescents in using informal online support sources. In sum, this study offers important contributions regarding the frequency of adolescent girls' use of online support seeking, their reasons for seeking support online, and the developmental implications that arose from these online communications.

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9. General discussion and conclusion

This chapter presents a discussion of the combined findings of the thesis. The chapter begins with a brief overview of the key findings in each paper, followed by a discussion of project limitations, and practical, theoretical, and methodological implications of the findings. As findings specific to each paper have been previously discussed within Chapters 3, 6, 7, and 8, the aim of this chapter is to synthesise the major findings and discuss their practical, theoretical, and methodological implications. Several avenues for future research are also identified.

9.1 Overview of major findings

Paper I was a systematic review of the benefits and limitations of online social support for youth. This paper identified several benefits, including increased wellbeing for young people who perceived their online networks as supportive, and the ability to use online support to reduce distress. Online platforms also allowed youth to access support from large networks of potential support providers. However, young people who felt unsupported online or engaged in higher levels of online support seeking experienced poorer wellbeing. There was also an increased risk of victimization and potential negative implications for youth who made frequent use of online support. In-person support appeared to be more important for wellbeing than online support.

Paper II (see Chapter 6) investigated adolescent girls' use of online support seeking and how this compared with their use of traditional sources of support and isolation. Further, this paper demonstrated that support seeking and isolation varied according to stressor type and age. The findings indicate that girls were most likely to seek support from traditional sources (i.e. friends) for social stressors and academic stressors (i.e. parents). When used, online support seeking was more likely to be used in response to academic stressors rather than social stressors, and by middle adolescent girls rather than early adolescent girls. There were no other differences between ways of coping used by early and middle adolescent girls. Girls who sought more support online sought less support from parents, and more support from close friends.

Paper III (see Chapter 7) extended these findings by exploring relationships between online support seeking, traditional support seeking, and isolation, and adolescent mental health.

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Paper III (see Chapter 7) extended these findings by exploring relationships between online support seeking, traditional support seeking, and isolation, and adolescent mental health.

The findings indicate that online support seeking was related to higher levels of depression and anxiety, when used for academic and social stressors respectively. Isolation was related to higher levels of depression, anxiety, and stress, regardless of stressor type. Isolation also moderated the relationship between online support seeking and anxiety in response to academic stressors. Online support seeking was related to increased anxiety when combined with moderate or high levels of isolation. Seeking support from parents, friends, and peers were not related to any measure of distress.

Papers III provided evidence that a higher amount of online support seeking seems indicative of adolescents who are suffering with more symptoms of depression and anxiety. Paper IV provided further insight by exploring the developmental affordances and limitations of online support seeking, as identified in interviews with the girls. This paper first identified the frequency of adolescent girls' self-reported online support seeking and investigated why girls chose to seek support online. Findings indicate that on average, adolescent girls reported seeking support online once per week for academic stressors and seeking emotional support online less than once per week. A small group reported seeking support online once per day or more. Thematic analysis of interviews revealed that adolescent girls sought online support to access support from their friends, including academic support for homework and schoolwork. Few reported seeking support from exclusively online contacts. Friendship and emotional self-regulation emerged as perceived benefits. Interviews also identified potential developmental limitations to the use of online support seeking, such as the use of online support seeking to avoid displaying negative emotions in front of friends, and to make unregulated expressions. Adolescents were quite cognizant of the limited quality of online support they had experienced. Some also identified limitations of online support seeking that may undermine friendship quality, including inhibition of self-disclosure and concerns about trust in online exchanges.

Taken together, the findings in this thesis suggest that online support seeking may be a useful coping strategy for girls who recognise and respond to the limitations of online support seeking and use online support seeking selectively. However, online support seeking may be a

problematic way of coping with everyday stressors for some adolescents. For example, the survey findings suggest that adolescent girls who employ high levels of online support seeking may experience more mental health difficulties and be less likely to seek support from parents. Further, the interviews indicate that some girls used online support seeking in potentially maladaptive ways, such as to avoid expressing emotions, to make unregulated support seeking attempts, and to seek expedient academic support (i.e. ask for answers rather than assistance with homework).

9.2   Practical implications

There are three key practical implications to be taken from the findings reported in this thesis. These include the pragmatic or selective use of online support seeking, problematic features of online support seeking, and the use of online support seeking for academic problems.

9.2.1   *Selective use: The normative experience*

The majority of adolescent girls appear to be using online support seeking in a selective or pragmatic way. Girls reported that they were more likely to seek support from friends and parents than seek support online, mirroring recent findings showing that college students are most likely to seek support in-person when faced with stress (Rife et al., 2016). Qualitative data suggests that in-person support seeking may be preferred for a number of reasons, including to manage trust concerns, to self-disclose more effectively, and to gain higher quality support. This may explain why most do not seek support online excessively frequently, and appear to use online support seeking as a backup or pragmatic support seeking strategy (e.g. to catch up on missed schoolwork or to obtain emotional relief when friends were unavailable in-person). Further, the findings identified in Chapter 8 showed that many adolescent girls identified limitations of online support seeking, and some moderated their online behaviour in accordance with these recognised disadvantages. As such, the girls in this project were largely cognizant of the disadvantages of online support seeking.

This project has also shown that normative aspects of adolescents' friendships appear to transfer to online contexts, such as the access to and provision of emotional support and

companionship (Bukowski, Motzoi, & Meyer, 2009). As most adolescents use online platforms to communicate with their friends (Reich et al., 2012; Underwood et al., 2015; Valkenburg & Peter, 2007), and friends are vital sources of support (Bullot et al., 2017; Boldero & Fallon, 1995), it is unrealistic to attempt to prevent adolescents from seeking support online. Rather, a useful avenue for future intervention efforts may be to support adolescents to selectively use online support seeking. For example, scaffolded discussion to highlight limitations of online support seeking may assist adolescents to become more aware of, and potentially moderate their online support seeking behaviours. Intervention efforts could also target adolescents who are suffering symptoms of depression and anxiety, as they may be more likely to heavily rely on online support seeking. In particular, these adolescents may benefit from interventions designed to improve face-to-face support seeking strategies and opportunities.

9.2.2 *Problematic features of online support seeking*

Nevertheless, the results also indicate that online support seeking is problematic for some adolescent girls. In Paper III (Chapter 7), it was reported that greater intentions to use online support seeking were concurrently associated with higher levels of anxiety (for both social and academic stressors) and depression (academic stressors only). Findings reported in Papers II and IV provide further insight about why online support seeking is related to poorer mental health.

In Paper II (Chapter 6), for example, it was reported that girls who sought more support online also sought less support from parents. Given that parental support is a consistent predictor of healthy psychosocial adjustment throughout adolescence (Helsen et al., 2000; Newman, 2008), it may be that reduced intentions to seek support from parents are indicative of reduced parental support for these students. It is possible for example, that a high level of online support seeking displaces time and support seeking opportunities with parents. Alternatively, those who have less supportive relationships with their parents may seek support online to compensate. While this study did not investigate these associations between intended and actual levels of support it is recommended that future research disentangles these possibilities and assesses both support seeking and perceived support from parents. As such, these findings indicate that the

intention to seek support online is related to poorer mental health and the extant literature provides some insight as to why this may be the case.

In Paper IV (Chapter 8), emotion regulation emerged as a perceived benefit of online support seeking for some adolescents. Several examples were cited by the girls including using online tools to purposively engage in unregulated online expressions, avoid the display of negative emotions, and access support immediately. These self-reported behaviours may hold important implications for future coping skills, such as a reduction in emotion regulation capability, a reduction in problem solving ability by expecting emotional support as soon as a minor problem is presented, or encouragement of rumination due to problems being continually discussed online. Constant access to support has been theorised to have implications for future adjustment and the development of autonomy (Spies Shapiro & Margolin, 2014). As emotion regulation is important for healthy psychosocial functioning, such online support seeking behaviours and expectations may partially explain why higher levels of intended online support seeking were related to poorer mental health.

9.2.3   Online academic support seeking: Frequent and potentially problematic

This thesis has also shown that informal academic online support seeking was a relatively common and frequent behaviour in this sample of adolescent girls; these findings require further research attention and verification in other samples. As identified earlier, online academic support seeking was associated with poorer mental health, and evidence from qualitative data indicated that some adolescents engaged in problematic academic support seeking behaviours online (e.g. expedient help seeking). The quality of academic support provided by peers is also likely to be highly variable (Ryan & Shim, 2012), meaning that heavy reliance on online peer support may have negative implications for academic achievement. The finding that online support seeking interacted with isolation to predict higher levels of anxiety for academic stressors also suggests that those who isolate themselves and avoid seeking help from parents and teachers are a particularly at-risk group when seeking academic support online. Further research is needed to investigate the extent of problematic online academic support seeking, and

to identify other variables that may predict or moderate the risk of experiencing negative outcomes when seeking academic support online.

Online academic support seeking also appears to be an important avenue of future intervention efforts. Past research has shown that students are less likely to seek expedient help from peers in-person when they perceive their teachers to be more supportive and endorse mastery goals (Ryan & Shim, 2012). It is possible then that teachers can discourage expedient online support seeking by building supportive classroom environments and enhancing the elements of a mastery environment in class. It is also noted, however, that online academic support seeking is most likely to take place outside school, when adolescents are completing homework or assignments. Thus, parents also play an important role in encouraging adolescents to avoid problematic online behaviours, such as expedient help seeking and referring to peers as soon as they encounter a problem with homework. Overall, parents and teachers should be wary of encouraging girls to discuss homework and other academic problems online, particularly in unmoderated online communication platforms.

It has been suggested that coping interventions are best targeted at developmental periods where there is evidence of changes in coping (Frydenberg & Lewis, 2000). While it is recognised that a longitudinal study would be ideal to identify changes in online support seeking over time, the current project provides cross-sectional evidence for online support seeking increasing from early adolescence (Grade 7) to middle adolescence (Grade 9). Past research has also identified early adolescence as a developmental period in which use of maladaptive coping strategies may increase (Hampel & Petermann, 2006; Zimmer-Gembeck & Skinner, 2016). Taken together, these findings suggest that Grade 7 may be a critical age at which to teach adaptive online support seeking behaviours.

9.3 Theoretical implications

An important theoretical implication of the findings in this thesis is that online support seeking appears to be a form of support seeking that may be maladaptive under some conditions. As noted in the theoretical stance of Skinner and Zimmer-Gembeck (2016), no family of coping

should be considered as adaptive or maladaptive in all situations. Indeed, the findings suggest that selective use of online support seeking may be a practical way of accessing support from friends in response to everyday stressors. However, high levels of online support seeking and seeking support online to avoid expressing emotion appear to be examples of problematic online support seeking behaviours (see sections 9.2.2 and 9.3.3 for full discussion of potentially problematic online support seeking behaviours).

Online support seeking may have additional implications for the development of healthy support seeking behaviours. A defining feature of online support seeking is increased accessibility, as adolescents have unprecedented access to support from their friends (potentially) at all times. While adolescents are expected to increasingly seek support from friends, parents remain an important source of support (Crystal et al., 2008; Helsen et al., 2000). It is plausible, however, that online support seeking exaggerates the normative separation from parents as support providers. Having constant access to support from friends may also interfere with the development of adolescents' ability to discern the most appropriate source of support based on the problem they are facing. It is recommended that longitudinal studies focus on determining whether online support seeking influences these important developmental outcomes.

There is an important caveat to note, however. Online support seeking may also be an outcome of poor mental health. For example, socially anxious adolescents are more likely to prefer disclosing personal information online rather than face-to-face (Valkenberg & Peter, 2007). Thus, adolescents experiencing mental health concerns may be particularly drawn to seeking informal support online. Alternatively, the relationship between online support seeking and mental health may be bidirectional, whereby adolescents with poorer mental health are more likely to seek support online, and online support seeking leads to poorer mental health in such vulnerable adolescents. This aligns with recent findings regarding other problematic ways of coping like isolation and rumination (Zimmer-Gembeck, 2015). In any case, online support seeking is a way of coping that requires additional research focus as an outcome or indicator of poor mental health (or potentially both).

9.4 Methodological implications

There are three overarching methodological implications to be taken from the findings in this thesis. First, this thesis has made an important contribution to the study of support seeking in adolescence by measuring both online and traditional support seeking preferences. As such, this thesis has taken an initial step towards integrating online coping within a measure of offline coping behaviours. Future research can extend on these findings by investigating possible ways in which online communication influences the development of other families of coping. For example, online communication may allow increased opportunities for adolescents to engage in problem solving with peers; however this could have implications for the development of their independent problem-solving capabilities. Online communication may also allow adolescents opportunities to cope by distraction, which could be adaptive if a stressful situation is uncontrollable, or problematic if used as way of avoiding dealing with a stressful situation. Investigation of the implications of online communication for the development of coping represents a significant area of future research.

Second, this thesis has also made a significant contribution in measuring support seeking intentions by stressor type. Indeed, the findings related to stressor type demonstrate the importance of specifying stressor types when investigating adolescent coping. For example, this thesis shows that girls use different patterns of support seeking for different stressor types. This provides evidence for early and middle adolescent girls selecting sources of support based on the stressor they are facing, as is increasingly expected during adolescence (Zimmer-Gembeck & Skinner, 2011). Importantly, it is the first study to investigate the role of stressor type in adolescents' use of online support seeking. There were also differences in the relationships between mental health and online support seeking depending on the stressor type, further highlighting the need for future research to consider coping responses to both academic and social stressors.

Finally, it is highly likely that the quality of support received online affects the usefulness of seeking support online. The qualitative results reported in Paper IV suggest that girls received

support of variable quality for several reasons (see Chapter 8). It is likely that the quality of support received online could influence the relationship between online support seeking and mental health, for example. It is therefore recommended that future studies of online support seeking include measures of the quality of support received online. Such measures could include perceived quality of social support, level of emotional relief obtained, or objective coding of actual support messages received.

9.5 Limitations

While this thesis is the first to investigate adolescent girls' use of informal online support seeking and traditional sources of support for different stressor types, there are several limitations that should be accounted for. Limitations relevant to each of the empirical papers are identified and discussed in Chapters 6 – 8. These include sampling limitations (Chapter 6 – 8), specific focus on online support seeking while excluding additional forms of online coping (Chapter 6), and inability to determine causality due to cross-sectional design (Chapter 7). There are also two broader limitations discussed in this section.

As explained in Chapter 5, this project used hypothetical vignettes of academic and social stressors to create standardised stressors against which all participants rated their likelihood of using each style of coping. This methodology is empirically important for three reasons. First, the use of vignettes allows differences in the adolescents' exposure to each stressor type to be controlled (e.g. Skinner, Pitzer & Steele, 2013; Pitzer & Skinner, 2017; Zimmer-Gembeck, 2016). Second, vignette-based measures minimise biases and errors in adolescents' recall of stressful situations (Zimmer-Gembeck & Skinner, 2015). Although empirical evidence is mixed, emotional valence can influence adolescents' recall of information (Davidson, Luo, & Burden, 2001; Quas, Rush, Yim, Edelstein, Otgaar, & Smeets, 2016). Finally, the use of vignettes enables a direct comparison between online support seeking and in-person support seeking. Notwithstanding these advantages, an obvious limitation of this measurement approach is that *actual* coping may be different to *intended* coping (Zimmer-Gembeck, 2015). As such while this

type of measure is particularly suited to the controlled study of intended coping styles, it may not reflect actual coping behaviours.

It is also noted that there are additional types of social support that can be sought by adolescents that were not measured in this study. For example, they may seek emotional, instrumental, or informational support online (Trepte et al., 2015). An important ethical condition placed on the conduct of this study was to minimise the time required for participation, as the survey was conducted within school time. As a result, this project limited the length of the surveys by focussing on the source of support, rather than type of support. This focus is supported by previous studies that have identified that sources of support may influence the relationship between support seeking and mental health (e.g. Visconti & Troop-Gordon, 2010; Zimmer-Gembeck, 2015). Nonetheless, it is recommended that where time permits, future studies could include more nuanced measures of adolescent support seeking that measure both source and type of support sought for different stressor types.

9.6   Conclusion

This thesis makes a novel contribution to our understanding and measurement of early and middle adolescent girls' use of online support seeking. Overall, the findings show that most of the sample sought support online, but only a relatively small proportion reported doing so daily. Online support seeking was mostly used to access support from known friends, who are key sources of support in this developmental stage. Nonetheless, several findings suggest that online support seeking can be a problematic way of coping with stress. Specifically, it was concurrently related to lower levels of seeking support from parents, and was associated with higher levels of anxiety and depression. Potentially maladaptive online support seeking behaviours were identified, including the use of online support seeking to conceal or avoid emotion and to disclose problems too difficult to discuss in-person. Most girls were cognizant of the risks associated with online support seeking, including trust concerns and poorer quality support. The findings reported in this thesis have also been used to identify several areas of future research, especially in the area of informal academic support seeking. Finally, this thesis

has identified opportunities for the development of future interventions to help adolescents use informal online support seeking in an effective way.

10. References

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Appendix A – Student Survey

Survey: Is talking about it online helpful?

We are interested in finding out about how you use different technologies to talk to your friends. Please complete these questions by either writing your answer in the spaces provided or by ticking the box that applies to you.

1. What is your date of birth? _____

2. Which school do you go to? _____

3. Which grade are you in?
   - ☐ Year 7
   - ☐ Year 9

4. Which of the following do you use to talk to your friends? (You may choose more than one)
   - ☐ Text messaging
   - ☐ Facebook
   - ☐ Twitter
   - ☐ Instagram
   - ☐ Snapchat
   - ☐ Tumblr
   - ☐ Google+
   - ☐ Vine
   - ☐ Wanelo
   - ☐ Kik
   - ☐ Ask.fm
   - ☐ Other: _____
   - ☐ None

5. Which three do you use the most?

6. How often do you go online or text to talk to your friends about things that have happened during the day?

    ☐ Not at all
    ☐ Less than once a week
    ☐ Once a week
    ☐ Once every 2-3 days
    ☐ Once a day
    ☐ Several times a day

7. How often do you go online or text to talk to ask your friends for help with homework or assignments?

    ☐ Not at all
    ☐ Less than once a week
    ☐ Once a week
    ☐ Once every 2-3 days
    ☐ Once a day
    ☐ Several times a day

8. How often do you go online or text to talk to your friends about something that has upset you?

    ☐ Not at all
    ☐ Less than once a week
    ☐ Once a week
    ☐ Once every 2-3 days
    ☐ Once a day
    ☐ Several times a day

9. How often do you go online or text to talk to your friends just to make you feel good?

    ☐ Not at all
    ☐ Less than once a week
    ☐ Once a week
    ☐ Once every 2-3 days
    ☐ Once a day
    ☐ Several times a day

For each of these hypothetical situations, circle the number for each of the following statements that best describes you.

10. You are having trouble with a subject at school.	Not at all				Definitely
How much would you go and seek the support or help of a parent?	1	2	3	4	5
How much would you go and seek the support or help of a close friend?	1	2	3	4	5
How much would you go and seek the support of a classmate (not a close friend)?	1	2	3	4	5
How much would you go online or text to talk to someone about it?	1	2	3	4	5
How much would you want to go off to be by yourself (or be alone)?	1	2	3	4	5

11. Something bad happened to you at school (like not doing well on a test).					
How much would you go and seek the support or help of a parent?	1	2	3	4	5
How much would you go and seek the support or help of a close friend?	1	2	3	4	5
How much would you go and seek the support of a classmate (not a close friend)?	1	2	3	4	5
How much would you go online or text to talk to someone about it?	1	2	3	4	5
How much would you want to go off to be by yourself (or be alone)?	1	2	3	4	5

12. You are having difficulty learning something.					
How much would you go and seek the support or help of a parent?	1	2	3	4	5
How much would you go and seek the support or help of a close friend?	1	2	3	4	5
How much would you go and seek the support of a classmate (not a close friend)?	1	2	3	4	5
How much would you go online or text to talk to someone about it?	1	2	3	4	5
How much would you want to go off to be by yourself (or be alone)?	1	2	3	4	5

For each of these hypothetical situations, circle the number for each of the following statements that best describes you.

13. You are having trouble keeping up with the amount of study and homework you have to do.					
	Not at all				Definitely
How much would you go and seek the support or help of a parent?	1	2	3	4	5
How much would you go and seek the support or help of a close friend?	1	2	3	4	5
How much would you go and seek the support of a classmate (not a close friend)?	1	2	3	4	5
How much would you go online or text to talk to someone about it?	1	2	3	4	5
How much would you want to go off to be by yourself (or be alone)?	1	2	3	4	5
14. You are being bullied at school.					
How much would you go and seek the support or help of a parent?	1	2	3	4	5
How much would you go and seek the support or help of a close friend?	1	2	3	4	5
How much would you go and seek the support of a classmate (not a close friend)?	1	2	3	4	5
How much would you go online or text to talk to someone about it?	1	2	3	4	5
How much would you want to go off to be by yourself (or be alone)?	1	2	3	4	5
15. You have seen your parents having a fight.					
How much would you go and seek the support or help of a parent?	1	2	3	4	5
How much would you go and seek the support or help of a close friend?	1	2	3	4	5
How much would you go and seek the support of a classmate (not a close friend)?	1	2	3	4	5
How much would you go online or text to talk to someone about it?	1	2	3	4	5
How much would you want to go off to be by yourself (or be alone)?	1	2	3	4	5

For each of these hypothetical situations, circle the number for each of the following statements that best describes you.

16. You were excluded from an activity by your classmates.	Not at all				Definitely
How much would you go and seek the support or help of a parent?	1	2	3	4	5
How much would you go and seek the support or help of a close friend?	1	2	3	4	5
How much would you go and seek the support of a classmate (not a close friend)?	1	2	3	4	5
How much would you go online or text to talk to someone about it?	1	2	3	4	5
How much would you want to go off to be by yourself (or be alone)?	1	2	3	4	5
17. You had a fight with your parents.					
How much would you go and seek the support or help of a parent?	1	2	3	4	5
How much would you go and seek the support or help of a close friend?	1	2	3	4	5
How much would you go and seek the support of a classmate (not a close friend)?	1	2	3	4	5
How much would you go online or text to talk to someone about it?	1	2	3	4	5
How much would you want to go off to be by yourself (or be alone)?	1	2	3	4	5

We would like to find out how you have been feeling in THE PAST WEEK. There are some sentences below. Please circle the number which best shows how TRUE each sentence was of you during the past week. There are no right or wrong answers.

If the statement was **NOT TRUE of you** (in the past week), circle **0.**
If the statement was **A LITTLE TRUE of you**, circle **1.**
If the statement was **FAIRLY TRUE of you**, circle **2.**
If the statement was **VERY TRUE of you**, circle **3.**

18.	I found it difficult to relax.	0	1	2	3
19.	I kept thinking about all the things I had to do.	0	1	2	3
20.	I felt like there was a lump in my throat.	0	1	2	3
21.	I was stressing about lots of things.	0	1	2	3
22.	My hands felt shaky.	0	1	2	3
23.	I got upset about little things.	0	1	2	3
24.	I could not stop feeling sad.	0	1	2	3
25.	I could feel my heart beating really fast, even when I was not exercising.	0	1	2	3
26.	There was nothing nice I could look forward to.	0	1	2	3
27.	I was easily irritated.	0	1	2	3
28.	I got annoyed when people interrupted me.	0	1	2	3
29.	I hated myself.	0	1	2	3
30.	I found myself over-reacting to situations.	0	1	2	3
31.	I felt like I was no good.	0	1	2	3
32.	I did not feel like doing anything, not even the things I used to enjoy.	0	1	2	3
33.	I felt like I was about to panic.	0	1	2	3
34.	I did not enjoy anything.	0	1	2	3
35.	I had trouble breathing (e.g. fast breathing), even when I wasn't exercising and I was not sick.	0	1	2	3
36.	I hated my life.	0	1	2	3
37.	I was dizzy, like I was about to faint.	0	1	2	3
38.	I felt that life was terrible.	0	1	2	3
39.	My hands got sweaty.	0	1	2	3
40.	I felt scared for no good reason.	0	1	2	3
41.	I was easily annoyed.	0	1	2	3

We're interested in how people use text messages, social media (like Snapchat, Instagram, Facebook, etc.) and things like that to talk about things with their friends.

59. Can you give us an example of when you have used text messaging or social media to talk to a friend and it has made you feel good or better about something?

_____

_____

_____

_____

_____

_____

60. What are the best things about talking to your friends online?

_____

_____

_____

_____

_____

_____

_____

_____

This is the end of the questionnaire. Thank you! ☺

Before we get started, I want to let you know that I am making a recording of this interview, just to allow me to focus on what you're saying rather than on writing notes. Is that ok?

I'm interested in how people use technology to talk about things, especially asking for help, advice and emotional support. The technologies that I'm talking about are things like social media, text messaging, apps, and instant messaging.

Suggested questions:

1. Do you ever use these to talk about things with other people like your friends?

2. What do you think about this?

3. Is talking online any different or the same as talking face to face with someone?

4. Are there some things that you feel more comfortable talking to your friends about online rather than in person?

5. Can you tell me about the types of problems or issues that you prefer to talk to your friends about online or by text? I don't need any personal details just the general type of things that you prefer to talk about with friends.

6. Why do you think you prefer to go online to talk about these things?

7. What effect does asking for help from your friends online have on your relationship with them?

8. Are there other problems or issues that you prefer to talk to your friends about in person? Why?

9. Do you think that talking to your friends about your problems online has any effect on your relationship with your parents?

10. Have you ever spoken to someone online that you don't know in person? (If no, go to question 13).

11. Can you tell me about the types of things you talked about with this person? I don't need any personal details just the general type of things that you prefer to talk about.

12. Did you find talking to this person helpful?

13. When you have asked for help or advice online, did you find it helpful?

14. When you have gone online to talk to your friends about something that upsets you or makes you feel bad, did it make you feel better?

15. Do you find that you spend a lot of time online talking about your problems?

16. Are there any problems or bad experiences that you have had with asking for support online?

17. Have you ever had negative or unhelpful comments online after you have talked about your feelings or thoughts?

18. How did this make you feel?

19. What are the best things about talking to your friends online?

Appendix C – Ethics Approval

Office of the Deputy Vice-Chancellor (Research)

Research Office
C5C Research HUB East, Level 3, Room 324
MACQUARIE UNIVERSITY NSW 2109 AUSTRALIA

Phone   **+61 (0)2 9850 7850**
Fax   +61 (0)2 9850 4465
Email   ethics.secretariat@mq.edu.au

17 November 2014

Dr Anne McMaugh
School of Education
Faculty of Human Sciences
Macquarie University
NSW 2109

Dear Dr McMaugh

Reference No: 5201400949

Title: The Development of Support Seeking in Early to Middle Adolescence: An Exploratory
Study of Online Support Seeking

Thank you for submitting the above application for ethical and scientific review. Your
application was considered by the Macquarie University Human Research Ethics Committee
(HREC (Human Sciences & Humanities)) at its meeting on 24 October 2014 at which further
information was requested to be reviewed by the Ethics Secretariat.

The requested information was received with correspondence on 11 November 2014.

I am pleased to advise that ethical and scientific approval has been granted for this project to
be conducted at:

- Macquarie University

This research meets the requirements set out in the *National Statement on Ethical Conduct in
Human Research* (2007 – Updated March 2014) (the *National Statement*).

Details of this approval are as follows:

Approval Date: 17 November 2014

The following documentation has been reviewed and approved by the HREC (Human
Sciences & Humanities):

Documents reviewed	Version no.	Date
Macquarie University Ethics Application Form	2.3	July 2013
Correspondence from Dr McMaugh responding to the issues raised by the HREC (Human Sciences and Humanities)		Received 11/11/2014
MQ Participant Information and Consent Form (PICF): Principal	1	9/11/2014
MQ Participant Information and Consent Form (PICF): Parent	1	9/11/2014

1

MQ Participant Information and Consent Form (PICF): Student	1	9/11/2014
Survey	1	9/11/2014
Semi-Structured Phone Interview Questions	1	9/11/2014

This letter constitutes ethical and scientific approval only.

Standard Conditions of Approval:

1. Continuing compliance with the requirements of the *National Statement,* which is available at the following website:

http://www.nhmrc.gov.au/book/national-statement-ethical-conduct-human-research

2. This approval is valid for five (5) years, subject to the submission of annual reports. Please submit your reports on the anniversary of the approval for this protocol.

3. All adverse events, including events which might affect the continued ethical and scientific acceptability of the project, must be reported to the HREC within 72 hours.

4. Proposed changes to the protocol must be submitted to the Committee for approval before implementation.

It is the responsibility of the Chief investigator to retain a copy of all documentation related to this project and to forward a copy of this approval letter to all personnel listed on the project.

Should you have any queries regarding your project, please contact the Ethics Secretariat on 9850 4194 or by email ethics.secretariat@mq.edu.au

The HREC (Human Sciences and Humanities) Terms of Reference and Standard Operating Procedures are available from the Research Office website at:

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics

The HREC (Human Sciences and Humanities) wishes you every success in your research.

Yours sincerely

Dr Karolyn White
Director, Research Ethics & Integrity,
Chair, Human Research Ethics Committee (Human Sciences and Humanities)

This HREC is constituted and operates in accordance with the National Health and Medical Research Council's (NHMRC) *National Statement on Ethical Conduct in Human Research* (2007) and the *CPMP/ICH Note for Guidance on Good Clinical Practice.*

Appendix D – Parent Consent Form

School of Education
Faculty of Human Sciences
MACQUARIE UNIVERSITY   NSW   2109

Phone: +61 (02) 9850 8663
Email: anne.mcmaugh@mq.edu.au

Participant Information and Consent Form

Name of Project: **Social support and coping for adolescent girls: Is talking about it online helpful?**

Teenagers view their friends and peers as important sources of help and advice. Many teenagers start to use technology such as phones and the Internet to ask for help and advice from their friends. We are interested in finding out about who teenagers turn to when they seek help or advice, whether or not they ask teachers, parents or friends, or go online to chat about their concerns and at what age this starts to happen. Your daughter is invited to participate in this study, regardless of whether or not she has a phone or uses the Internet.

The study is being conducted by Erin Mackenzie (School of Education; 0422294803; erin.mackenzie@students.mq.edu.au) and is as being conducted to meet the requirements of Doctor of Philosophy under the supervision of Dr. Anne McMaugh (9850 8663; anne.mcmaugh@mq.edu.au) of the School of Education.

If you decide to allow your child to participate, she will be asked to complete a survey at school, which will take 40-50 minutes and may also be invited to participate in a short telephone interview. The survey will be completed during pastoral time at school so lessons will not be disrupted. The survey will measure three things: 1) how teenagers cope with common problems and who they turn to for help; 2) how often they talk about problems and how this makes them feel and c) a general measure of wellbeing including feelings of stress, anxiety or sadness. The telephone interview will take 15 minutes and asks teenagers for more detail about whether they prefer to talk about problems face-to-face or online, and if seeking help or advice online is actually helpful or not. There is a small risk that a child might feel a little embarrassed or uncomfortable talking about these things, but we are not asking your child for any personal details and we aim to ensure your child's privacy is respected at all times. Upon completion of the survey, all students will receive information about safe ways to ask for help or advice and information about where they can go for help if they have any concerns about cybersafety.

Any information or personal details gathered in the course of the study are confidential, except as required by law. No individual will be identified in any publication of the results. Data may be made available to other researchers for future Human Research Ethics Committee-approved research projects, however no personal information will be made available to the school or any other person. The findings of the study will be written in a report for your school and you may also request a copy.

Participation in this study is entirely voluntary: you are not obliged to allow your child to participate and if you decide to consent to participation, you are free to withdraw this consent at any time without having to give a reason and without consequence. Only those students whose parents explicitly consent to their child's participation will be invited to take part in the study. I have also included information and a consent form for your child.

I,''_____''have'read'*(or, where appropriate, have had read to me)*'
and'understand'the'information'above'and'any'questions'I'have'asked'have'been'answered'to'my'
satisfaction.''I'agree'to'allow'my'child'to'participate'in'this'research,'knowing'that'I'can'withdraw'
from'further'participation'in'the'research'at'any'time'without'consequence.''I'have'been'given'a'
copy'of'this'form'to'keep.'
'
Child's'Name:'   _____'
(Block letters)
'
Parent's'Name:'   _____'
(Block letters)
'
Parent's'   _____'   Date:'_____'
Signature:'   '
'
Investigator's'   Anne'McMaugh'
Name:'
'
Investigator's'   'Anne Mc'Maugh_____ Date:'' 4 / 2 / 2015
Signature:'

The best phone number and time for a 15 minute telephone interview with my child would be:	
Preferred'phone'number:' '	'
Best'day/s'to'contact:' (Circle'any'days)'	Mon''''''''''Tue'''''''''Wed''''''''''Thu'''''''''Fri''''''''''Sat'''''''''Sun'
Best'time'of'day'to' contact:'	' '
'	'

I would like to have a copy of the research report emailed to me at the conclusion of the study (please tick)	
✎ Yes'' ✎ No'	Email'address:'

'
'
The'ethical'aspects'of'this'study'have'been'approved'by'the'Macquarie'University'Human'Research'
Ethics' Committee.'' If' you' have' any' complaints' or' reservations' about' any' ethical' aspect' of' your'
participation'in'this'research,'you'may'contact'the'Committee'through'the'Director,'Research'Ethics'
and'Integrity'(telephone'(02)'9850'7854;'email'ethics@mq.edu.au).''Any'complaint'you'make'will'be'
treated'in'confidence'and'investigated,'and'you'will'be'informed'of'the'outcome.'
'

(INVESTIGATOR'S [OR PARTICIPANT'S] COPY)

Appendix E – Student Consent Form

School'of'Education'
Faculty'of'Human'Sciences'
MACQUARIE'UNIVERSITY'''NSW'''2109'

Phone:'+61'(02)'9850'8663'
Email:' anne.mcmaugh@mq.edu.au''

Participant'Information'and'Consent'Form'

Name'of'Project:'**Social'support'and'coping'for'adolescent'girls:'Is'talking'about'it'online'helpful?'**

When'you'need'help'or'advice,'who'do'you'turn'to?'Do'you'prefer'to'talk'in'person,'text,'or'use'the'Internet'to'chat'to'your'friends'when'you'need'help?'

We'are'interested'in'finding'out'about'who'teenagers'turn'to'when'they'need'help'or'advice'for'different'things'that'might'happen'to'them.'We'would'also'like'to'find'out'about'how'teenagers'like'to'get'in'contact'with'their'friends.'You'are'invited'to'participate'in'this'study,'even'if'you'don't'have'a'phone'or'use'the'Internet.'''

The' study' is' being' conducted' by' Erin' Mackenzie' (School' of' Education;' 0422294803;' erin.mackenzie@students.mq.edu.au)' and' is*)* as' being' conducted' to' meet' the' requirements' of' Doctor' of' Philosophy*)* under' the' supervision' of' Dr.' Anne' McMaugh' (9850' 8663;' anne.mcmaugh@mq.edu.au)*)*of'the'School'of'Education.*]*'

If'you'decide'to'participate,'you'will'be'asked'to'complete'a'survey'at'school,'which'will'take'40`50' minutes.' You' may' also' be' invited' to' participate' in' a' short' phone' interview.' The' survey' will' be' completed'during'pastoral'time'at'school.'The'survey'will'measure'three'things:'1)'how'you'deal'with'common'problems'and'who'you'turn'to'for'help;'2)'how'often'you'talk'about'problems'and'how'this'makes'you'feel'and'3)'a'general'measure'of'feelings'of'stress,'anxiety'or'sadness.'The'phone'interview'will'take'15'minutes'and'asks'you'about'whether'you'prefer'to'talk'about'problems'face`to`face'or'online,'and'if'asking'help'or'advice'online'is'actually'helpful'or'not.'There'is'a'small'risk'that'you'might'feel'a'little'embarrassed'or'uncomfortable'talking'about'these'things,'but'we'will'not'ask'you'for'any'personal'details'and'we'aim'to'ensure'your'privacy'is'respected'at'all'times.''Upon' completion' of' the' survey,' you' will' receive' information' about' safe' ways' to' ask' for' help' or' advice'and'where'you'can'go'for'more'help.'You'can'also'talk'to'your'school'counsellor'if'you'feel'uncomfortable'or'worried'about'anything'after'participating'in'this'study.'

Any'information'or'personal'details'gathered'in'the'course'of'the'study'are'confidential,'except'as'required'by'law.''No'individual'will'be'identified'in'any'publication'of'the'results.'De`identified'data'may'be'made'available'to'other'researchers'for'future'Human'Research'Ethics'Committee`approved' research' projects,' however'no' personal' information' will' be' made' available' to' the' school' or' any' other'person.'The'findings'of'the'study'will'be'written'in'a'report'for'your'school'and'your'parents'may'also'request'a'copy.''

Participation'in'this'study'is'entirely'voluntary:'you'do'not'have'to'participate'and'if'you'decide'to'participate,'you'are'free'to'withdraw'this'consent'at'any'time'without'having'to'give'a'reason'and'without'consequence.'You'must'also'have'your'parent's'consent'to'participate'in'this'study.''

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I,''_____''have'read'(*or, where appropriate, have had read to me*)' and'understand'the'information'above'and'any'questions'I'have'asked'have'been'answered'to'my' satisfaction.' ' I' agree' to' participate' in' this' research,' knowing' that' I' can' withdraw' from' further' participation'in'the'research'at'any'time'without'consequence.''I'have'been'given'a'copy'of'this'form' to'keep.'
'

Name:'   _____'
(Block letters)
'

Signature:'   _____'   Date:'_____'
'   '

Investigator's'   Anne'McMaugh'
Name:'
'

Investigator's'   '*Anne Mc'Maugh*_____ Date:'' 4 / 2 / 2015
Signature:'

The best phone number and time for a 15 minute telephone interview with me would be:	
Preferred'phone'number:' '	'
Best'day/s'to'contact:' (Circle'any'days)'	Mon''''''''''Tue'''''''''Wed'''''''''Thu'''''''''Fri'''''''''Sat'''''''''Sun'
Best'time'of'day'to' contact:'	' '
'	'

I would like to have a copy of the research report emailed to me at the conclusion of the study (please tick)	
✎ Yes''	Email'address:'
✎ No'	
'

'
The'ethical'aspects'of'this'study'have'been'approved'by'the'Macquarie'University'Human'Research' Ethics' Committee.'' If' you' have' any' complaints' or' reservations' about' any' ethical' aspect' of' your' participation'in'this'research,'you'may'contact'the'Committee'through'the'Director,'Research'Ethics' and'Integrity'(telephone'(02)'9850'7854;'email'ethics@mq.edu.au).''Any'complaint'you'make'will'be' treated'in'confidence'and'investigated,'and'you'will'be'informed'of'the'outcome.'
'

(INVESTIGATOR'S [OR PARTICIPANT'S] COPY)