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Online Counseling and Therapy for Mental Health Problems: A Systematic Review of Individual Synchronous Interventions Using Chat

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Online interventions are increasingly seen as having the potential to meet the growing demand for mental health services. However, with the burgeoning of services provided online by psychologists, counselors, and social workers, it is becoming critical to ensure that the interventions provided are supported by research evidence. This article reviews evidence for the effectiveness of individual synchronous online chat counseling and therapy (referred to as “online chat”). Despite using inclusive review criteria, only six relevant studies were found. They showed that although there is emerging evidence supporting the use of online chat, the overall quality of the studies is poor, including few randomized control trials (RCTs). There is an urgent need for further research to support the widespread implementation of this form of mental health service delivery.

KEYWORDS *effectiveness, mental health, online counseling and therapy, outcome.*

BACKGROUND

Mental distress is a significant burden on individuals and society. Almost half the population will experience a mental disorder within their lifetime (Kessler, Berglund et al., 2005; Merikangas et al., 2010; Slade, Johnston, Oakley-Browne, Andrews, & Whiteford, 2009). Furthermore, between a fifth (Slade

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et al., 2009) and a quarter (Kessler, Chiu, Demler, Merikangas, & Walters, 2005) of the population will meet the criteria for a mental disorder during any 12-month period. Mental health problems are common, although the most cases (78%) are mild or moderate, with serious conditions (causing significant impairment to general functioning) confined to a smaller, but still substantial, proportion of the population (22%; Kessler, Chiu et al., 2005). Mental disorders are most prevalent amongst young adults, and three quarters of all lifetime disorders start by age 24 (Kessler, Berglund et al., 2005; Merikangas et al., 2010; Slade et al., 2009). Consequently, there is a strong argument that interventions designed to prevent or provide early treatment should be aimed at young people (Kessler, Berglund et al., 2005).

The high prevalence of mental distress has considerable impact on national economies, from both direct costs (e.g., counseling, medication, and hospitalization) and indirect costs, such as loss of worker productivity, reduced labor supply, disability support payments, and unpaid care (World Health Organization, 2006). For example, during the 2004–2005 financial year, Australia spent AUD\$4.1 billion (USD\$4.27 billion) on mental health services (e.g., inpatient and outpatient services, prescription medication, community mental health services, and research), or 8% of all total health expenditure (Australian Institute of Health and Welfare, 2010). Psychological distress in employees costs the Australian economy AUD\$5.9 billion (USD\$6.14 billion) in lost productivity every year (Hilton, Scuffham, Vecchio, & Whiteford, 2010). Current service provision does not meet the societal and economic costs of mental health problems.

Despite the widespread prevalence of mental distress and its impact on national economies, the availability and use of mental health services remains disturbingly low. Only 35%–40% of people who meet the criteria for a mental disorder seek professional treatment (Bebbington et al., 2000; Burgess et al., 2009; Wang et al., 2005). Moreover, young people are the age group least likely to seek professional help (Burgess et al., 2009; Tanielian et al., 2009). Commonly cited barriers to help-seeking include: living in a rural area (Emmelkamp, 2005), self- and perceived-stigmatization to seeking help for mental health problems (Barney, Griffiths, Jorm, & Christensen, 2006), and holding negative attitudes towards seeking help or having negative past experiences with mental health professionals (Rickwood, Deane, & Wilson, 2007). While providing a service to every person with a mental health problem is neither feasible nor necessarily appropriate, there is still a significant need to overcome the barriers for people who would like to seek professional help and are currently being underserved (Burgess et al., 2009).

Distance communication technology to deliver non-face-to-face therapy may help to address this problem of service provision. Letters, phone calls and closed-circuit television links, have been in use since the 1950s (Perle, Langsam, & Nierenberg, 2011). However, with the increasingly widespread use of the Internet over the last decade, online psychological services have grown tremendously (Barak, Hen, Boniel-Nissim, & Shapira, 2008). There is now a plethora of psychoeducational websites, online support groups, interactive self-help

programs, and psychologists giving online group and individual counseling via e-mail exchanges, text chat room conversations, webcams, and voice-only exchanges (Abbott, Klein, & Ciechomski, 2008; Ybarra & Eaton, 2005). The presence of these online psychological services is expected to not only increase, but branch out and utilize short message services (SMS), smart phone applications (apps), computer games, and virtual worlds (Barak & Grohol, 2011). Rickwood (2012) has argued that we are entering an era where there is an “e-spectrum” of interventions for youth mental health that can meet needs across the entire spectrum of interventions to support mental well-being.

Mounting evidence suggests that online psychological services are as good as similar services provided face-to-face (Barak et al., 2008; Gainsbury & Blaszczynski, 2011; Griffiths & Christensen, 2006; Kaltenthaler, Parry, & Beverley, 2004; Newman, Szkodny, Llera, & Przeworski, 2011). In their comprehensive meta-analysis of Internet-based interventions, Barak et al. (2008) report the overall effect size to be 0.53, a medium effect size, which is comparable to that of traditional face-to-face interventions.

Types of Online Interventions

There is currently no agreed nomenclature to describe different psychological services provided over the Internet. Common terms include: online counseling (or therapy), Internet counseling (or therapy), cybertherapy, e-therapy (or e-counseling), computer-mediated therapy, and web-based interventions. Some researchers have used broad definitions of psychological interventions provided on the Internet, such as “any type of professional therapeutic interaction that makes use of the Internet to connect qualified mental health professionals and their clients” (Rochlen, Zack, & Speyer, 2004, p. 270), or

any delivery of mental or behavioural health services, including but not limited to therapy, consultation, and psychoeducation, by a licensed practitioner to a client in a non-face-to-face setting through distance communication technologies such as telephone, asynchronous email, synchronous chat, and videoconference. (Mallen & Vogel, 2005, p. 764)

These definitions are ambiguous, however, and do not help differentiate between types of interventions.

Several researchers have attempted to provide a unifying terminology to label, define, and categorize different psychological services provided online (Abbott et al., 2008; Barak, Klein, & Proudfoot, 2009; Rochlen et al., 2004); however, these efforts are yet to be widely accepted within the psychological community. The most comprehensive taxonomy is that of Barak, Klein, and Proudfoot (2009), who divide online interventions into four categories: (a) online counseling and therapy; (b) web-based interventions; (c) Internet-operated therapeutic software; and (d) personal publications, online support groups, and online assessments. Table 1 uses this taxonomy to describe different online service subtypes that are currently available.

TABLE 1 Types of Psychological Services Provided Online

Psychological service provided online	Subtypes	Examples
Online Counseling: The provision of psychological interventions delivered over the Internet, either synchronously or asynchronously, and in either an individual or group setting.	<p>Synchronous communication: Communications are relayed between a therapist and client in real time (e.g., chat, audio, and webcam).</p> <p>Asynchronous communication: There is a time lag between communications relayed between a therapist and client (e.g., e-mail, forum, and SMS).</p>	<p>Kids Helpline: http://www.kidshelp.com.au/teens/get-help/web-counseling/</p> <p>eheadspace: https://www.eheadspace.org.au/</p> <p>Living Well: https://livingwell.org.au/Counselingandsupport/</p> <p>LivingWellservicesonline/Onlinecounseling/Emailcounseling.aspx</p> <p>Better Health Channel: http://www.better-health.vic.gov.au/</p> <p>National Institute of Mental Health: http://www.nimh.nih.gov/index.shtml</p> <p>MoodGYM: http://moodgym.anu.edu.au/moodgym</p> <p>Cool Teens: http://accessmq.com.au/node/136</p>
Web-based interventions: An online intervention program to create positive change and/or improve/enhance knowledge, awareness, and understanding for specific disorders.	<p>Web-based education interventions: Programs providing information regarding the associated features of a mental disorder.</p> <p>Web-based self-help therapeutic interventions: Self-guided online programs to treat or prevent mental disorders.</p> <p>Human-supported web-based therapeutic interventions: An online program with the additions of a mental health professional to provide support, guidance, and feedback.</p>	

<p>Internet operated therapeutic software: Uses advanced computer programming to create positive change and/or improve/enhance knowledge, awareness, and understanding of mental health problems.</p>	<p>Robotic simulation: Computer simulations of therapeutic conversations. Rule-based expert systems: Systems for assessment, treatment selection, and progress monitoring. Virtual environments: Games and virtual worlds to treat or prevent mental disorders.</p>	<p>ELIZA: http://www.cyberpsych.org/eliza MYLO: http://manageyourlifeonline.org Drinker's Check-up: http://www.drinkers-checkup.com/ Reach Out Central: http://roc.reachout.com.au/</p>
<p>Other online activities: Services used together with interventions by a professional. Generally, they are not stand alone services.</p>	<p>Online support groups: To bring people with mental health issues together to offer relief, empathy, and emotional support.</p>	<p>SPARX: http://sparx.org.nz/ Daily Strength: http://www.dailystrength.org/support-groups Blue Board: http://blueboard.anu.edu.au/index.php</p>
<p>Online mental health assessment allows people to fill in questionnaires in order to obtain an indication of their physical or mental health status. Smart phone applications can be used to gather information (e.g., negative and irrational thoughts) and communicate with therapists.</p>	<p>Screening for Mental Health: http://www.mentalhealthscreening.org/ CBTReferee: http://www.cbtreferree.com CBT Applications: http://www.cbtapps.com</p>	<p>Screening for Mental Health: http://www.mentalhealthscreening.org/ CBTReferee: http://www.cbtreferree.com CBT Applications: http://www.cbtapps.com</p>

Note. CBT = Cognitive Behavioral Therapy. Summary from Barak, Klein, and Proudfoot, 2009.

Online counseling and therapy is defined as “a mental health intervention between a patient (or a group of patients) and a therapist, using technology as the modality of communication” (Barak & Grohol, 2011, p. 157). Modalities of communication include e-mail exchanges, forums, chat (instant messaging), audio (voice only exchanges), and webcams (e.g., cameras that transmit video over the internet). Some websites, such as *LivePerson*, provide online counseling and therapy using a variety of communication modalities, including online chat, e-mail, and audio (Finn & Bruce, 2008). Communication exchanges can be asynchronous, meaning they have a lag in time between contacts, or synchronous, meaning they occur in real time—that is, no significant time delays between interactions are perceived by the user (Perle et al., 2011). Methods of communication that do not regularly provide instantaneous responses, such as e-mails and forums, are asynchronous, while programs that allow for real time communication, such as chat, audio, and webcams, are synchronous.

Web-based interventions are

a primarily self-guided intervention program that is executed by means of a prescriptive online program operated through a website and used by consumers seeking health- and mental-health related assistance. The intervention program itself attempts to create positive change and or improve/enhance knowledge, awareness, and understanding via the provision of sound health-related material and use of interactive web-based components. (Barak et al., 2009, p. 5)

Web-based programs can include education interventions (e.g., programs about the associated features of a mental disorder, explanation of symptoms, causes, effects, and treatment options), self-help therapies (e.g., treatment or prevention self-guided online programs to promote positive cognitive, behavioral, and emotional change), and therapist supported interventions (e.g., similar to self-help interventions, but with a mental health professional to provide support, guidance, and feedback).

Internet-operated therapeutic software is differentiated from web-based interventions by the use of advanced computer programming, such as artificial intelligence and language recognition software (Barak et al., 2009). This category includes computer simulations of therapeutic conversations. These analyze the client's input of text for key terms and themes, and then, using algorithms based on scripts of therapeutic conversations, provide a suitable reply. ELIZA comprised an early computer program designed to simulate a nondirective therapy conversation based on Rogerian psychotherapy principles (Weizenbaum, 1966). Manage Your Life Online (MYLO) is another automated computer-based self-help program that simulates a conversation between a client and therapist, but is based upon the principles of Method of Levels therapy (Carey, 2006).

The fourth, and somewhat amorphous, *Other* category includes online support groups, online mental health assessments, and smart phone applications (Barak & Grohol, 2011; Barak et al., 2009). Online support groups allow people with mental health issues to communicate with each other synchronously or asynchronously (e.g., by e-mail, forums, or chat rooms), and can occur with or without moderation by a mental health professional (Castelnuovo, Gaggioli, Mantovani, & Riva, 2003). Websites may offer mental health screening and assessment tools—people fill in questionnaires to obtain an indication of their physical or mental health status (Ybarra & Eaton, 2005). There are also cognitive behavioral smart phone applications that now allow people to track and respond to negative and irrational thoughts at anytime, anywhere they are (Barak & Grohol, 2011).

Effectiveness of Online Interventions

The previously described taxonomy allows comparison of various types of online interventions through systematic reviews and meta-analyses. Several researchers have already done so, particularly with regard to web-based interventions (Andrews, Cuijpers, Craske, McEvoy, & Titov, 2010; Barak et al., 2008; Gainsbury & Blaszczynski, 2011; Griffiths & Christensen, 2006; Hanley & Reynolds, 2009; Kaltenthaler et al., 2004; Manzoni, Pagnini, Corti, Molinari, & Castelnuovo, 2011; Newman et al., 2011; Postel, de Haan, & De Jong, 2008). Griffiths and Christensen (2006) reviewed self-help web-based interventions and found consistent evidence that online programs were efficacious. Newman et al. (2011) went a step further, comparing self-help web-based therapies with therapist-supported web-based therapies to treat anxiety and mood disorders. While self-help web-based therapies treated anxiety and mood disorders effectively, therapist-supported interventions offered the best outcomes, particularly for clinical depression.

Within their comprehensive meta-analysis, Barak et al. (2008) investigated the effectiveness of online counseling modalities. They compared chat, forum, e-mail, audio, and webcam modalities; chat and e-mail were more effective than forum and webcam modalities. However, the authors note this analysis was limited by the small number of studies in each modality. Of particular concern are the articles related to online chat as a format. Of the nine articles reviewed, seven were therapist-led group interventions using chat rooms (Gollings & Paxton, 2006; Harvey-Berino et al., 2002; Harvey-Berino, Pintauro, Buzzell, & Gold, 2004; Hopps, Pépin, & Boisvert, 2003; Lieberman et al., 2005; Woodruff, Edwards, Conway, & Elliott, 2001; Zabinski, Wilfley, Calfas, Winzelberg, & Taylor, 2004). Of the remaining two studies, one was a combination of chat support, rather than counseling, accompanied by a self-help website (Hasson, Anderberg, Theorell, & Arnetz, 2005). Thus, of nine studies, only one investigated the effectiveness of individual synchronous online chat counseling (Cohen & Kerr, 1998). This reveals a

significant gap in the evidence for individual synchronous online chat counseling—a highly available form of online therapy.

Review of Evidence for Individual Synchronous Online Chat Counseling

Online counseling is widely available: A Google search of “online counseling” retrieved about 4,060,000 results, and of the first 10 websites, nine were virtual clinics offering online chat counseling. Furthermore, several textbooks and courses now aim to teach the skills necessary to give online chat counseling (Jones & Stokes, 2009; Kraus, Zack, & Stricker, 2004; Murphy, MacFadden, & Mitchell, 2008). There is also a growing body of literature analyzing the processes of online chat counseling (Mallen, Jenkins, Vogel, & Day, 2011; Williams, Bambling, King, & Abbott, 2009), including the working alliance (Hanley & Reynolds, 2009), session impact (King, Bambling, Reid, & Thomas, 2006), and client attitudes to online chat counseling (Skinner & Latchford, 2006; Young, 2005).

Mallen et al. (2011) and Williams et al. (2009) have both studied processes within an online chat session. Mallen et al. reported that online chat counselors-in-training most frequently gave approval and reassurance, and asked open and confronting questions. However, counselors-in-training were less likely than face-to-face counselors to use interpretation or provide direct guidance. Williams et al. reported that Kids Helpline counselors most often used paraphrasing, asking confronting and information-seeking questions, but were less likely to use empathy, encouragement, and ask feeling-oriented questions. Both studies suggested that online chat counselors used rapport-building and information-gathering techniques to compensate for the lack of nonverbal cues. Furthermore, it has been suggested that the slow pace of the online chat sessions may limit the range of techniques being used (Williams et al., 2009). Nevertheless, both studies concluded that most counseling interventions used during counseling can be successfully transferred to online chat.

A frequently cited criticism of online chat counseling is the perceived difficulty of forming a working alliance (Fenichel et al., 2002). This appears to be a legitimate concern, as it is harder to establish a working alliance online, although the alliances established appear sufficient to facilitate psychological change (Hanley, 2009; King, Bambling, Reid et al., 2006). Specific factors affecting establishing a therapeutic alliance online include the rationale behind each client's decision to seek help from an online chat service, the counselor's own computer-mediated communication skills (e.g., use of emoticons), technical hurdles, and perceived session “control” (e.g., type of intervention and the regularity of meetings; Hanley, 2011). Furthermore, this difficulty in establishing a therapeutic relationship appears to be offset by online clients' greater willingness to self-disclose, also known as the disinhibition effect (Suler, 2004).

Research into the session impact of synchronous online chat has been positive (Barak & Bloch, 2006; Reynolds, Stiles, & Grohol, 2006). This suggests that online chat can induce process characteristics (i.e., depth and smoothness) and client moods (i.e., positivity and arousal) that are related to feelings of session helpfulness (Barak & Bloch, 2006). However, King, Bambling, Reid et al. (2006) reported that clients addressed their problems more effectively by phone than online. The authors proposed that this may have been related to time, as typing is a slower process than talking over the phone.

Online clients also appear to have generally positive attitudes towards online chat counseling. Client ratings of online chat counselors at LivePerson demonstrate a high level of service satisfaction (Finn & Bruce, 2008). Typically, online clients reported the anonymity, convenience, and emotional safety of the online environment as being important motivators for choosing online chat counseling (King, Bambling, Lloyd et al., 2006; Skinner & Latchford, 2006; Young, 2005). However, clients also reported being concerned about confidentiality (e.g., who had access to their information) and technical difficulties (e.g., time lag, or being unable to access a counselor).

Online chat counseling and therapy is a fast-growing field and has been the subject of many studies. Many questions remain, however, regarding the effectiveness of online chat counseling and therapy, particularly for individual counseling or therapy conducted via synchronous online chat. With increasing demand for evidence-based psychological treatments, service providers must be confident that their treatments will improve outcomes for their clients (Carey, Rickwood, & Baker, 2009). The current study undertakes a systematic review of the evidence related to the outcomes of individual synchronous online chat counseling and therapy—a form of online mental health service delivery that closely matches face-to-face therapy and an area where the research has not been reviewed.

METHOD

A literature search for the systematic review initially identified all peer-reviewed references related to online therapy, published between 1995 and 2012. A systematic search was conducted using the following EBSCO databases: Academic Search Complete, CINAHL Plus, Psychology and Behavioral Sciences Collection, PsychArticles, and Psych INFO. The following terms formed the basis of the search strategy: “online therapy” OR “online counseling” OR “Internet therapy” OR “Internet counseling” OR “Internet psychotherapy” OR “cybertherapy” OR “e-therapy” OR “chat support.” The expander “Apply related words” was selected, as was the limiter “Scholarly (peer reviewed) journals.” This search yielded 1,872 results. A further 29 studies were identified through hand searching the references in relevant studies and reviews. A total of 480 duplicates were then removed. After this database

TABLE 2 Inclusion and Exclusion Criteria

Inclusion criteria	Exclusion criteria
Participants engaged with a therapist online in real time via instant messaging or online chat.	The participants engaged with a therapist using audio or video-chat.
No web-based program was used in conjunction with counseling sessions.	Counseling was assisted by a web-based program.
There were more than five participants	There were fewer than five participants
The intervention was one-on-one	The intervention was group based.
The effectiveness of treatment was based on outcome measures of psychological symptoms, interpersonal, and social functioning, and/or quality of life.	Dissertations and published poster abstracts.
RCT, quasi-experimental trials, and naturalistic comparisons included.	Articles not written in English.

Note. RCT = Randomized control trials.

search, abstracts and titles were scanned and irrelevant studies removed. The inclusion and exclusion criteria are in Table 2. Two reviewers (the authors) independently applied the inclusion and exclusion criteria once the irrelevant studies were removed. A consensus method was used to solve any disagreements regarding the inclusion of studies.

RESULTS

Studies Included

A total of six studies met the inclusion criteria and a summary of each is provided in Table 3. The studies included two randomized control trials (RCTs) and four naturalistic comparisons. Two studies compared online chat with face-to-face counseling, three compared online chat with telephone counseling, while one study compared online chat with a waitlist control group. The studies were from America (1), Australia (1), Canada (1), England (1), and the Netherlands (2).

COMPUTER-MEDIATED COUNSELING

Cohen and Kerr's (1998) study recruited 24 American undergraduates who self-identified as wanting help for anxiety. They were randomly assigned to one online chat counseling session or one face-to-face counseling session led by counseling psychology graduate students. The study reported significant reductions in anxiety as rated by the State-Trait Anxiety Inventory (STAI) for both the online and face-to-face conditions. However, no effect size was reported. No significant differences were found between the online and face-to-face conditions.

TABLE 3 Study Characteristics

Study	Sample	Intervention	Design	Attrition	Main findings
Cohen & Kerr (1998)	<ul style="list-style-type: none"> - 24 American undergraduate students - Self identified as wanting help dealing with anxiety 	<ul style="list-style-type: none"> - Single session. - Counselors were counseling psychology graduate students. - Counseling included issue identification, exploration, and problem solving. 	<ul style="list-style-type: none"> - RCT - Treatment group (online chat) - Treatment as usual (face-to-face) 	<ul style="list-style-type: none"> - After 1 month only 223 participants (119 chatters and 94 callers) were available at follow-up. 	<ul style="list-style-type: none"> - Significant reductions in anxiety as rated by STAI for both face-to-face and chat groups. - Differences between groups nonsignificant.
Fukink & Hermanns (2009a)	<ul style="list-style-type: none"> - 902 Dutch children - Ages 8–18 years (Online chat M = 13.8, SD = 2.0; Telephone M = 12, SD = 2.3) - 339 Online chat (39 males, 272 female) - 563 Telephone (120 male, 401 female) 	<ul style="list-style-type: none"> - Single session. - Counseling included establishing contact, issue clarification, goal setting, problem solving, and closure. 	<ul style="list-style-type: none"> - Naturalistic comparison - Treatment group (Online chat) - Treatment as usual (telephone) 	<ul style="list-style-type: none"> - After one month, the changes in well-being and perceived burden remained stable for both online and telephone conditions. - Online chat was slightly more effective in improving well-being, and decreasing perceived burden. 	

(Continued)

TABLE 3 Continued

Study	Sample	Intervention	Design	Attrition	Main findings
Fukink & Hermanns (2009b)	<ul style="list-style-type: none"> - 95 Dutch children - Ages 9–17 years - 53 online chat (84% female) - 42 telephone (77% female) 	<ul style="list-style-type: none"> - Single session. - Counseling. 	<ul style="list-style-type: none"> - Random selection from database - Treatment group (Online chat) - Treatment as usual (telephone) 	<ul style="list-style-type: none"> - 15 of the cases were excluded due to missing data. 	<ul style="list-style-type: none"> - Well-being increased for online chat (ES = .45, medium) and telephone (ES = .40, medium) - Perceived burden decreased for online chat (ES = .36, small) and telephone (ES = .20, small) - No significant difference between online chat and telephone.
Kessler et al. (2009)	<ul style="list-style-type: none"> - 297 English Adults - Age range 18–75 (Intervention M 35.6, SD = 11.9; Control M = 34.3, SD = 11.3) - 149 online chat (46 males, 103 females), BDI M = 32.8, SD = 8.3. - 148 waitlist control (49 males, 99 females). BDI M = 33.5, SD = 9.3 - Diagnosis of depression (Scored > 13 on BDI) - BDI scores: Mild (14–19), Moderate (20–28), Severe (>28) 	<ul style="list-style-type: none"> - CBT with a therapist online in real time. - 5–10 sessions over 16-week period. - 55 min per session. 	<ul style="list-style-type: none"> - RCT - Treatment group (Online chat) - Waitlist control 	<ul style="list-style-type: none"> - At 4 months, 92 (62%) had completed therapy as intended. Data was collected for 113 (76%) of the intervention group - At 8 months, 99 (66%) had had therapy as intended. Data was collected for 109 (73%) of the intervention group 	<ul style="list-style-type: none"> - At 4 months: Intervention BDI M = 14.5, SD = 11.2 (ES = 0.81, large), and 38% (n = 43) reported a BDI of <10; Control BDI M = 22.0, SD = 13.5, and 24% (n = 23) reported a BDI of <10. - At 8 months: Intervention BDI M = 14.7, SD = 11.6 (ES = 0.70, large), and 42% (n = 46) reported a BDI of <10; Control BDI M = 22.2, SD = 15.2, and 26% (n = 26) reported a BDI of <10.

King, Bambling, Reid, & Thomas (2006)	<ul style="list-style-type: none"> - 186 Australian children - Age range unspecified (Online chat M = 15.4, SD = 1.9; Telephone M = 13.1, SD = 2.4) - 86 Online chat (4 males, 82 female) - 100 Telephone (33 male, 67 female) 	<ul style="list-style-type: none"> - Single session. - Counseling included information gathering and problem solving. - Online chat 50–80 min. - Telephone 45–60 min. 	<ul style="list-style-type: none"> - Naturalistic comparison - Treatment group (Online chat) - Treatment as usual (telephone) 	<ul style="list-style-type: none"> - Distress as rated by the GHQ-12 was significantly reduced in both conditions (partial eta squared = .50, large main effect). - Telephone had a greater session impact, as rated by the SIS, than online chat (partial eta squared = .15).
Murphy et al. (2009)	<ul style="list-style-type: none"> - 127 Canadians adults - Age range unspecified (Online chat M = 42, face-to-face M = 44) - 26 online chat (73% female) - 101 face-to-face clients (76% female) 	<ul style="list-style-type: none"> - Therapy Online counselors gave online counseling. - Interlock counselors gave face-to-face counseling. - Specific intervention unspecified. Counselors a mixture of Masters degree counselors and accredited social workers. 	<ul style="list-style-type: none"> - Naturalistic comparison - Treatment group (Online chat) - Treatment as usual (face-to-face) 	<ul style="list-style-type: none"> - 44 online clients completed that satisfaction survey, but only 26 were given a GAF score before and after treatment - GAF increased significantly in both conditions. No effect size was provided. - There was no significant interaction between time and treatment method.

Note. RCT = Randomized control trials; STAI = State-Trait Anxiety Inventory; BDI = Beck Depression Inventory; CBT = Cognitive Behavioral Therapy; GHQ = General Health Questionnaire; SIS = Session Impact Scale; GAF = Global Assessment of Functioning.

CHILDREN'S EXPERIENCES WITH CHAT SUPPORT AND TELEPHONE SUPPORT

Fukkink and Hermanns' (2009a) study was a naturalistic comparison of online and telephone counseling services at Dutch Kindertelefoon. Initially, 902 Dutch children were recruited, with a mean age of 14. About three quarters were female. There were 339 participants online and 563 participants on the telephone. The presenting problems were varied, including relationships, home situations, violence/coercion, and emotional problems (e.g., loneliness, self-harm, depression). The interventions were single sessions of counseling led by trained volunteer counselors. Immediately after the counseling session, client well-being increased for both online chat (ES = 0.62, medium) and telephone (ES = 0.34, small) supported participants. The perceived burden of the presenting problem fell for both online (ES = 0.44, medium) and telephone (ES = 0.12, small). Twenty five percent ($n = 223$) of the participants were available for the follow-up. After one month the changes in well-being and perceived burden were maintained and remained stable for both online and telephone conditions.

COUNSELING CHILDREN AT A HELPLINE-TELEPHONE
SUPPORT AND CHAT SUPPORT

Fukkink and Hermanns' (2009b) study randomly selected 110 records from the Dutch Kindertelefoon database of online and telephone records. However, 15 of the cases had to be excluded due to missing data. Included in the study were the records of 53 online clients (84% female) and 42 telephone clients (77% female). The participants' ages ranged from 9 to 17 years; no mean age was noted. Participants had one counseling session. Immediately afterwards, clients reported an increase in well-being for online (ES = 0.45, medium) and telephone (ES = 0.40, medium) conditions. Furthermore, perceived burden fell for online (ES = 0.36, small) and telephone (ES = 0.26, small) clients. No significant differences between the groups were reported.

THERAPIST-DELIVERED INTERNET PSYCHOTHERAPY VIA
CHAT FOR DEPRESSION IN PRIMARY CARE

Kessler et al.'s (2009) study recruited 297 English adults with depression who scored over 13 on the Beck Depression Inventory (BDI), which indicates mild, moderate, or severe depression; more than two-thirds were severe. Mean age of the participants was 36 years and 68% were female. They were randomly assigned to either online chat treatment or the waitlist control. The treatment was 5–10 Cognitive Behavioral Therapy (CBT) sessions conducted via online chat over 16 weeks. Each session took about 55 min. At 4 months, 62% of the online chat group had completed treatment as intended and data were collected from 76% of the group. By 4 months, the online chat group's mean BDI score had decreased from 32.8 (SD = 8.3) to 14.5 (SD = 11.2),

which was a large effect ($ES = 0.81$). The control group's mean fell from 33.5 ($SD = 9.3$) to 22 ($SD = 13.5$), but no effect size was reported. At 8 months the online chat group's mean BDI score was steady at 14.7 ($SD = 11.6$), which was a large effect ($ES = 0.70$). The control group's mean also remained steady at 22.2 ($SD = 15.2$).

TELEPHONE AND ONLINE CHAT COUNSELING FOR YOUNG PEOPLE

King, Bambling, Reid et al.'s (2006) study was a naturalistic comparison of online and telephone counseling services at Kids Helpline in Australia. There were 86 online chat participants (95% female, $M = 15.4$ years) and 100 telephone participants (67% female, $M = 13.1$ years). The presenting problems were not reported. Participants had a single session of counseling from either an online or telephone counselor. Immediately after the intervention, participant distress, as measured by the General Health Questionnaire (GHQ-12), was significantly reduced for both online and telephone treatment groups (partial eta squared = 0.50). A significant interaction effect was reported, indicating that telephone counseling had a more substantial effect than online chat counseling (partial eta squared = 0.15).

CLIENT SATISFACTION AND OUTCOME COMPARISONS OF ONLINE CHAT AND FACE-TO-FACE COUNSELING

Murphy et al.'s (2009) study was a naturalistic comparison of online chat and face-to-face counseling at Therapy Online and Interlock in Canada. Of the 44 online participants, 26 had a Global Assessment of Functioning (GAF) score. For comparison, 101 face-to-face GAF scores were retrieved from the Interlock database. Participants' mean age was 42 years, and about three quarters were female. Presenting problems included work stress, separation and divorce, anxiety and depression, and parenting. The specific counseling intervention and number of sessions were not specified. Counseling was given by a mixture of trained counselors and social workers. The online intervention group's mean GAF score significantly increased from 70.3 ($SE = 1.5$) to 77.8 ($SE = 1.6$). However, no effect size was given. The face-to-face comparison group's GAF scores also rose from 67.6 ($SE = 0.8$) to 73.7 ($SE = 0.8$). No significant interaction between time and treatment method was reported.

DISCUSSION

Despite the proliferation of online chat counseling, there is a dearth of studies related to the effectiveness of individual therapy and counseling conducted online via synchronous chat. This systematic review of the literature identified six studies that assessed the outcome of individual online

synchronous chat interventions. Although the number of studies is small, their results are promising. All six studies revealed a significant positive effect of online chat counseling, of which two found that individual online synchronous chat was equivalent to face-to-face help (Cohen and Kerr, 1998; Murphy et al., 2009); one found that it was better than a telephone-delivered care (Fukkink & Hermanns, 2009a); one that it was equivalent to a phone delivered service (Fukkink & Hermanns, 2009b); one that it was better than a wait-list control (Kessler et al., 2009); and one that it was effective but less so than a phone delivered service (King, Bambling, Reid et al., 2006).

Online chat appears to be effective despite the relatively slow pace of the sessions and the absence of face-to-face cues (e.g., verbal tone, facial expressions, and body language). This may be due to the anonymity and invisibility that can be gained through textual conversation (Suler, 2010). During online chat it is entirely possible for clients to remain anonymous and thus unidentifiable; this may help people feel less vulnerable about sharing, as what they say cannot be linked back to the rest of their lives. Online chat clients may also benefit from being invisible, that is to say, the client cannot see, or be seen by, the counselor. This may reduce the stigma or embarrassment of physically being seen to seek help and allow clients to be more comfortable and expressive during counseling sessions.

Although these results are encouraging, there were several limitations. The sample sizes were generally small, attrition rates were high where there was follow-up, and little to no control was taken to prevent participants seeking outside treatment including medication. Furthermore, the studies were not congruent regarding age, presenting problem, type of intervention, or number of sessions. Currently, services providing online chat counseling and therapy rely, by and large, on evidence from related fields, such as telephone and face-to-face care rather than demonstrated efficacy for this particular modality. This is especially significant at this time in Australia as the Australian Government is implementing its first e-mental health strategy, providing \$48 million in funding over the next 5 years for online support services to aid in mental health prevention and early intervention (Department of Health and Ageing, 2011). A great deal of further research is needed to support the implementation of services, such as Kids Helpline's Web Counseling or e-headspace, and strong evaluation designs need to be built into these initiatives to contribute to the evidence base.

FUTURE RESEARCH

Future research should focus on the effectiveness of online chat in relation to different modalities such as e-mail, audio, and video. Other research should investigate different methods of online chat interventions (e.g.,

nondirective supportive counseling) and more structured therapies (e.g., CBT). Furthermore, these interventions should be considered in terms of their effectiveness in treating different presenting problems, such as anxiety and mood disorders. The studies outlined in this systematic review pose significant questions regarding the number of sessions required for treatment. Four of the studies reported the use of single sessions, which yielded positive outcomes for participants. However, there is not enough evidence to draw conclusions regarding what type of problems single sessions treat effectively, or whether single sessions of supportive counseling or structured therapy are more effective. Furthermore, future studies would benefit from having 3- and 6-month follow-ups, in order to identify any decline in effectiveness. Finally, research needs to focus on children and younger adolescents, as many of the services being implemented are aimed at supporting these age groups. Appropriate and effective treatment as early as possible for mental health problems is essential to improving the well-being of young people as they grow into adulthood, and this requires a solid evidence base to support the choice of interventions.

CONCLUSION

This review provides tentative support for the efficacy of individual synchronous online chat counseling and therapy. The current evidence is, however, based on a few effectiveness studies in naturalistic settings, and is not sufficient to draw definitive conclusions. More research is needed and RCTs would be a welcome addition. There is an urgent need for rigorous investigation of the effectiveness of different types of therapeutic interventions delivered through online modalities due to the rapid implementation of these approaches.

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