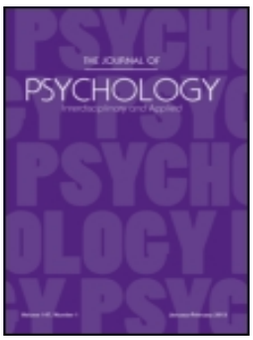

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Reduced Contact Cognitive-Behavioral Interventions for Adult Depression: A Review

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ABSTRACT

Depression is a highly prevalent and debilitating mental health condition. Evidence suggests that there is a widening gap between the demand for and availability of effective treatments. As such, there is a vast need for the development and dissemination of accessible and affordable treatments for depression. In the past decade, there has been a proliferation of reduced client-therapist contact protocols for depression. In this article, the authors review and compare the efficacy of reduced contact cognitive-behavioral interventions for adult depression across two degrees of therapist-client contact (i.e., no therapist-client contact versus minimal therapist-client contact interventions). The authors also discuss the methodological and theoretical limitations of this research base. The present review suggests that a) reduced contact interventions for depression can be effective in remediating the symptoms of depression; b) the effect sizes of some reduced contact protocols may approximate those reported in traditional protocols involving significantly greater client-therapist contact; and c) protocols which employ some form of client-therapist contact, on average, generate higher effect sizes than those that are purely self-help in nature. A discussion of the theoretical and applied implications of such findings, as well as areas in need of further research, is provided.

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cognitive-behavioral therapy; depression; guided self-help; internet-based cognitive therapy; self-help

Depression is a pervasive mental health condition, affecting approximately 8% of adults in a given year, and 17% in a lifetime (Kessler, Chiu, Demler, & Walters 2005). The costs of depression are substantial, affecting individuals' overall mental and physical health, interpersonal functioning, educational attainment, occupational performance, and quality of life (e.g., Kessler, 2012). In addition, there is a significant and growing economic cost of depression, which is felt by individuals, families, health care systems, and employers (Birnbaum et al., 2010; Slomp et al., 2012; Tomonaga et al., 2013). A number of psychological treatments have been shown to be efficacious and effective for depression, yet those who seek treatment are seldom provided with such evidence-based interventions (Dobson & Beshai, 2013; Gonzalez et al., 2010). As many have argued (e.g., Bower & Gilbody, 2005; Haaga, 2000; Saxena, Thornicroft, Knapp, & Whiteford, 2007), there is a widening gap between the

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demand for and availability of effective psychological services. Researchers and healthcare professionals worldwide are increasingly calling for the use of stepped care models—wherein resources are allocated as a function of severity and urgency of psychological problems—in order to increase accessibility to psychological services (National Institute for Health and Clinical Excellence, 2009; O'Donohue & Draper, 2011; van Straten, Seekles, van't Veer-Tazelaar, Beekman, & Cuijpers, 2010). This stepped care model of service provision has been widely adopted in the United Kingdom (Increasing Access to Psychological Therapies), and initial evaluations of its effectiveness are highly supportive (Clark, Layard, Smithies, Richards, & Suckling, 2009; van Straten, Hill, & Richards, 2015). Efforts to increase access to affordable and effective mental health treatments, including treatments for depression, have been identified as research and healthcare priorities in a number of countries worldwide (e.g., Richards & Bower, 2011). Computerized, internet or text/app-based treatments are cost-effective and can be widely disseminated, as they reduce therapist involvement in their administration. The development and dissemination of this form of treatment (i.e., predominantly or wholly self-administered) can be seen as a necessary next step in alleviating major barriers to accessing mental health treatment. A better understanding of the efficacy of various forms of reduced contact therapy for depression is needed. In this article, we review the efficacy of therapies for depression with reduced therapist contact. Specifically, this review focuses on reduced contact interventions that are cognitive-behavioral (herein referred to as CBT) in orientation, as the majority of reduced contact therapy trials have used a CBT framework. CBT–based protocols are structured and manualized (Blagys & Hilsenroth, 2002), thus readily transferable into reduced contact modes of delivery (Schmidt & Keough, 2010). We included in this review trials that examined CBT in its traditional form, as well as components of CBT (e.g., behavioral activation), and other trails that used more contemporary, "third-wave" reformulations of CBT (e.g., Acceptance and Commitment Therapy).

The cognitive-behavioral model predicts that information processing systems of individuals who suffer from depression are systematically different from those of non-depressed individuals (Beck & Dozois, 2011). These differences in processing, which are believed to be negatively oriented in depression, are predicted in automatic thoughts (Beshai, Dobson, & Adel, 2012), memories (Clark, Beck, & Alford, 1999), attention (Beshai, Prentice, Dobson, & Nicpon, 2014), and most other aspects of the cognitive system (Beshai, Prentice, Swan, & Dobson, 2015; Gotlib & Joormann, 2010). As such, using cognitive restructuring and behavioral techniques, CBT interventions for depression work sequentially to help the client "correct" this negative orientation (Beck, Rush, Shaw, & Emry, 1979; Beshai, Clark, & Dobson, 2013). "Third-wave" CBT models deemphasize the need to challenge and correct distorted thinking, and highlight the need for the active acceptance of negative thinking patterns and mood as a naturally occurring part of the depressive journey (Hofmann & Asmundson, 2008). Although the focus of this review is on CBT, there are a number of other models and coinciding treatments that have shown efficacy for the remidiation of depression. For example, Interpersonal Therapy or IPT is another evidence-based and commonly used treatment for depression (Chambless & Ollendick, 2000). IPT is a short-term and manualized treatment which predicts that interpersonal difficulties and relationship strife are largely responsible in the development and maintenance of depression (Klerman, Weissman, Rounsaville, & Chevron, 1984). Accordingly, treatment is focused on how patients interact with important others in their social arena and how to correct these interactions to alleviate depression. Behavioral Activation (BA) is another efficacious, standalone (should be contrasted to BA

component of CBT) treatment for depression that has been gaining attention as an alternative to CBT (Dobson et al., 2008). The BA model of depression predicts that the disorder is maintained due to the diminution of social rewards and reinforcements due to depressive withdrawal (Martell, Addis, & Jacobson, 2001). Accordingly, BA is believed to relieve depressive symptoms by helping patients re-engage with their environment, and in turn increase social rewards, by interjecting pleasure and mastery activities into the patient's daily routine (Hopko, Lejuez, Ruggiero, & Eifert, 2003). Last, Short-Term Psychodynamic Psychotherapy (STPP) is an evidence-based psychotherapy for depression that applies psychoanalytic principles in its approach to treating the disorder. Much like psychoanalysis, STPP considers unconscious drives and latent personality structures to play a major part in the onset and maintenance of depression (Driessen et al., 2010). The aim of the treatment is to identify these unconscious drives and how they are affecting current relationships and functioning (Leichsenring & Rabung, 2008). A number of integrative approaches which incorporate aspects of many evidence-based treatments have also been developed for depression. For example, Hayes and Harris (2000) developed a treatment in accordance with dynamic systems theory that also incorporates elements of CBT. Similarly, Castonguay et al. (2004) developed an integrative form of CBT for depression that guides the therapist to focus on processes variables (e.g., repairing ruptures in the therapeutic relationship).

There have been previous published reviews of reduced contact therapy (e.g., internet-based and computerized) for depression, in both meta-analytic (e.g., Andersson & Cuijpers, 2009; Richards & Richardson, 2012; van Straten et al., 2015) and systematic forms (e.g., Kaltenthaler, Parry, Beverley, &, Ferriter, 2008; Newman, Szkodny, Llera, & Przeworski, 2011). Such reviews are of immense importance in the synthesis and interpretation of data regarding the efficacy of such therapies. However, with the rapid proliferation of computerized, internet-based, and telephone-based therapy protocols for depression, the results gathered from these reviews are quickly outdated and the extent to which these results can be generalized to more recently developed therapies is uncertain. Secondly, most of the previously published reviews focused exclusively on computerized or internet-based therapy for depression, at the exclusion of other forms of reduced contact therapy (e.g., biobliotherapy). The current review builds upon former reviews by including more recently published trials and a broader range of therapy delivery methods. Specifically, trials that were published from 1995–2014 and included reduced contact protocols that involved treatment delivery via bibliotherapy (e.g., self-help books), telephone, internet, and other computerized methods were all included in this review.

Although low-intensity and reduced contact CBT for depression is the object of this review, we acknowledge that there are other promising reduced contact treatments that are not solely based upon CBT principles. For example, van Straten, Cuijpers, and Smits (2008) found that reduced contact Problem-Solving Therapy showed moderate effectiveness in reducing depressive symptoms. Further, Kay-Lambkin, Baker, Lewin, and Carr (2009) found that integrating Motivational Interviewing with CBT techniques using a computerized treatment was as effective as face-to-face therapy. Last, Johansson et al. (2012) found that a predominantly psychodynamic form of reduced contact treatment that combines elements of CBT was effective in reducing depression symptoms.

The goal of this review is to examine the extent to which treatments for depression with reduced therapist contact (as compared to traditional, face-to-face therapy) can promote positive therapeutic change. Specifically, this article provides a review of trials that examined

treatments with no therapist-client contact (herein referred to as NTC) and trials that examined treatments with minimal therapist-client contact (herein referred to as MTC) for adults with major depression. NTC protocols are defined as no therapist contact with the client beyond assessment, whereas MTC protocols are defined as either periodic therapist check-ins beyond the assessment or some active therapist involvement in the treatment, but to a significantly lesser extent than traditional treatment (defined here as no more than what is equivalent to six face-to-face sessions with a therapist). According to the fifth edition of the Diagnostic and Statistical Manual (DSM 5; American Psychological Association, 2013), depression is defined as a syndrome that lasts two weeks or longer and is characterized by the experience of sadness and/or anhedonia (i.e., loss of interest in usually enjoyable activities), and three to four additional symptoms (e.g., feelings of worthlessness, appetite or sleep disruptions, poor concentration, psychomotor agitation or retardation, and suicidal ideation). We included in this review studies that use both "gold-standard" structured interviews in the identification of case-ness of depression, and studies that employed cut-off scores on self-rated or clinician-rated questionnaires of depression. The rationale for the inclusion of studies with the latter definition is that a number of sources now argue that even minor depression (i.e., presence of symptoms that may not surpass the threshold of diagnosis) is associated with significant functional impairment (Bjelland et al., 2009; Uher et al., 2012). Thus, we believe that trials which have addressed depression as a dimensional construct are worthy of inclusion given the necessity of treatment at even subthreshold levels of the disorder. In some trials included in this review, depressive symptomatology is measured as the primary outcome along with other related psychopathology (e.g., anxious symptomatology).

Search Strategies

A comprehensive literature review was performed to identify all published studies which have examined reduced contact CBT interventions for depression. The databases PsychINFO, PubMed, and Google Scholar were searched using keywords such as "depression," "major depression," "email," "bibliotherapy," "self-help," "telephone therapy," "guided self-help," "minimal therapist contact," "technology assisted," "internet based treatment," and "online therapy." We excluded studies based on the following criteria: therapist-client contact not significantly less than traditional face-to-face therapies; exclusive recruitment of child or adolescent samples; depression was not a primary outcome examined; or treatment protocol was not CBT–based. Based on this selection process, 41 published articles (11 with no contact design; 26 with minimal contact design; 4 with a mixed design) fit our inclusionary criteria and were discussed in this review. Results from all studies included in this review are summarized in Table 1, and overall findings are discussed below. For the sake of interpretability, we have also calculated effect sizes for all treatment conditions within each study. These effect sizes are also provided in Table 1. Effect sizes were calculated for post-intervention (unless otherwise stated in the table) primary outcomes when the study had at least one control (active or inactive) condition to which treatment outcomes were compared.

No Therapist-Client Contact Designs

Of the 41 studies that met inclusion criteria, 11 studies were identified as using NTC therapy. Overall, sample sizes were large, ranging from 72 participants (Haeffel, 2010) to 2794

Table 1. Efficacy and design characteristics of current studies examining limited therapist contact cognitive therapies for depression.

Author (year of publication)	Type of design	Sample size and conditions	Amount of therapist-patient contact	CBT Program/ protocol used	Primary Outcome measure(s)	Follow-up	Results	Effect Size (active interventions vs. control/ other active treatments)
Christen-sen et al. (2006)	NTC	$N = 2794$; Version 1 ($n = 464$); Version 2 ($n = 468$); Version 3 ($n = 463$); Version 4 ($n = 463$) Version 5 ($n = 466$); Version 6 ($n = 468$)	None	MoodGYM	GDS	19 weeks	Post-Intervention (depression) V1 (M = 5.8); V2 (M =5.1); V3 (M = 5.00); V4 (M = 4.1); V5 (M = 4.46)	V2 $d = 0.20$; V3 $d = 0.22$; V4 $d = 0.40$; V5 $d = 0.34$ (each in comparison to V1)
Clarke et al. (2009)	NTC	$N = 160$; Intervention Condition ($n = 83$); Treatment-as-usual ($n = 77$)	None (Participants in intervention group received post cards as a reminder to continue using the interactive website)	Coping with Depression (CWD)	PHQ-8	8 months	Control PHQ-8 = 9.1 (0.8); Intervention PHQ-8 = 8.6 (0.8)	$d = 0.63$
Den Boer et al. (2007)	NTC	$N = 151$; Cognitive self-therapy (CST) condition ($n = 75$); treatment as usual ($n = 76$)	None	Cognitive self-therapy (CST);	SCL-90	18 months	Post-Intervention total (6 months) TAU (SCL- 90) = 2.34; CST (SCL-90) = 2.05; Post-treatment depression subscore (6 months) TAU (SCL- 90) = 2.72; CST (SCL-90) = 2.33	*ds* for total score and depression subscore = 0.39 and 0.57
Haeffel (2010)	NTC	$N = 72$; Traditional CBT (T; $n = 22$; Mind over Mood); Non-traditional CBT (NT; $n = 26$; generation of adaptive alternative thoughts); Academic Skills (AC; $n = 24$)	None	Mind Over Mood workbook (with and without negative automatic thought dispute activity in the T and NT, respectively)	BDI-II	4 months	Post-Intervention: Non-traditional = 8.75; Academic = 6.05; Traditional= 10.20	$d = 0.45$ (AC vs. NT); $d = 0.19$ (NT vs. T); $d = -0.60$ (T vs. AC)

Lintvedt et al. (2013)	NTC	$N = 163$; internet intervention ($n = 81$); waitlist control ($n = 82$)	None	MoodGYM and BluePages	CES-D	No follow up	Post intervention CES-D = 19.9; control = 24.0	$d = 0.32$
Meyer et al. (2009)	NTC	$N = 396$; online intervention ($n = 320$); Treatment as usual ($n = 76$)	None	Deprexis	BDI	6 months	Post-treatment: Intervention BDI ($M = 19.87$); Control BDI ($M = 27.15$)	$d = 0.64$
Morgan et al. (2012)	NTC	$N = 1326$; Active Self-Help ($n = 665$); General Group ($n = 661$)	None	Various self-help strategies including goal-setting and relaxation; general information about depression	PHQ-9		Post-treatment: Intervention PHQ-9 ($M = 7.5$); Control PHQ-9 ($M = 8.3$)	$d = 0.17$
Morgan et al. (2013)	NTC	$N = 1,736$; active group ($n = 862$); control group ($n = 874$)	None	MoodMemos	PHQ-9	No follow- up	Post-Intervention: active treatment PHQ-9 = 10.8; control PHQ-9 = 11.5;	$d = 0.10$
Moritz et al. (2012)	NTC	$N = 210$; Wait-List Control Group ($n = 105$); Deprexis ($n = 105$)	None	Deprexis	BDI	6 months	Post-treatment: Intervention = 20.51 (12.22); Control BDI = 25.67 (11.65)	$d = 0.36$

(*continued*)

Table 1. (*Continued*)

Author (year of publication)	Type of design	Sample size and conditions	Amount of therapist-patient contact	CBT Program/ protocol used	Primary Outcome measure(s)	Follow-up	Results	Effect Size (active interventions vs. control/ other active treatments)
Proudfoot et al. (2013)	NTC	$N = 720$; online self-guided intervention ($n = 242$); attention control ($n = 248$); waitlist control ($n = 230$)	None	myCompass	DASS-21	3 months	Post-intervention: myCompass DASS-depression = 12.63; attention control DASS-depression = 14.42; Waitlist DASS-depression = 15.03. Follow up: myCompass DASS-depression = 11.68; attention control DASS-depression = 12.59; waitlist DASS-depression = N/A	$d = 0.41$ (myCompass vs. AC); $d = 0.55$ (myCompass vs. Waitlist)
Titov et al. (2013)	NTC	$N = 274$; treatment plus automated email group (TEG; $n = 100$); Treatment group (TG; $n = 106$); control ($n = 51$)	None	Wellbeing Course	PHQ-9	3 months	Post-intervention: TEG PHQ-9 = 6.73; TG PHQ-9 = 7.41; control PHQ-9 = 10.50. Follow-up: TEG PHQ-9 = 6.24; TG PHQ-9 = 6.38; control PHQ-9 = N/A.	$d = 0.14$ (TEG vs. TG).
Andersson et al. (2005)	MTC	$N = 117$; online-delivered self help for depression (n =57); control condition ($n = 60$)	One email per completion of module quiz (for a total of 5 emails)	Various Self-Help CBT strategies	BDI	6 months	Post-treatment: Intervention BDI=12.2 Control BDI = 19.5	$d = 0.98$
Andersson et al. (2013)	MTC	$N = 69$; online assisted self-help ($n = 33$); group CBT as control ($n = 36$)	Online assisted self-help: weekly online homework assignments that received personalized feedback	iCBT adaptation from of Andersson et al. (2005); Joansson et al. (2012); Vernmark et al. (2010)	MADRS-S	1 year and 3 years	Post intervention: iCBT MADRS-S = 13.6, Control MADRS-S = 17.1	$d = 1.78$

Bilich et al. (2008).	MTC	$N = 84$; self-help with minimal contact (MC; $n = 23$), assisted self-help (AS; $n = 21$); control ($n = 40$)	Weekly calls to intervention conditions: MC 5-min calls for adherence check; AS 30-min calls to guide	Good Mood Guide	BDI-II; DASS-21	1 month	Post-treatment: MC DASS-21 13.65 BDI-II = 12.76; AS DASS-21 = 13.00 BDI-II = 12.35	MC *d*s for DASS – 21 and BDI = 0.82 and 0.78 AS *d*s for DASS – 21 and BDI = 0.82 and 0.73 (each in comparison to control)
Bowman et al. (1995)	MTC	$N = 32$; Cognitive bibliotherapy (CB; $n = 10$); Self-examination therapy (ST; $n = 10$), Waitlist control ($n = 12$)	Weekly 5 minute calls for all participants to increase compliance	Bibliotherapy condition received Burns' (1980) book, *Feeling Good*; self-examination therapy condition received Self-Examination Booklet	HRSD; BDI	2 months	Post-Intervention:CB HRSD and BDI = 11.6 and 12.4; ST HRSD and BDI = 11.1 and 10.3; Control HRSD and BDI = 18.7 and 23.0	CB *d*s for HRSD and BDI = 1.00 and 0.98 ST *d*s for HRSD and BDI = 1.15 and 1.5 (all in comparison to waitlist control)
Day, McGrath, and Wojtowicz (2013)	MTC	$N = 66$; immediate access group ($n = 33$); delayed access group ($n = 33$)	Weekly contact made by a program coach through either phone or email, for an average of 15 minutes on the phone or or an average of 1–2 page email. Provided support and encouragement, but not therapeutic advice	Online-based program modified from Currie et al. (2010)	DASS-21	6 months	Post treatment: Immediate access group DASS – 21 = 10.43; Delayed access group DASS – 21 = 14.60	$d = 0.56$

(*continued*)

Table 1. (*Continued*)

Author (year of publication)	Type of design	Sample size and conditions	Amount of therapist-patient contact	CBT Program/ protocol used	Primary Outcome measure(s)	Follow-up	Results	Effect Size (active interventions vs. control/ other active treatments)
Dear et al. (2011)	MTC	$N = 32$; major depressive disorder as primary diagnosis ($n = 18$); generalised anxiety disorder; panic disorder with or without agoraphobia or social phobia as primary diagnosis ($n = 14$)	Weekly 10 minute phone calls/ text messaging designed to reinforce participant progress and normalize treatment difficulties	Modified Wellbeing Program	DASS-21; PHQ-9	3 months	3 month follow-up: DASS d = 1.65; PHQ-9 d = 1.22.	At 3 Months: *ds* for DASS – 21 and PHQ – 9 = 1.65 and 1.22
Ellis et al. (2011)	MTC	$N = 39$; Online CHT group ($n = 13$); Online support group ($n = 13$); Control group ($n = 13$)	Online CHT group	MoodGYM; MoodGarden	DASS (DSS-21 Depression)	21	Post treatment DASS scores; Online CHT group = 9.69; Online support group = 8.77; Control =12.77	*ds* for online CHT and online support groups = 0.45 and 0.62 (both in comparison to control)
Fledderus et al. (2012)	MTC	$N = 376$; self-help with extensive email support ($n = 125$); self-help with minimal email support ($n = 125$); waitlist control ($n = 126$)	Participants in the extensive email support group allowed to ask additional questions and were asked to reflect on their gains (beyond the standardized email received in the minimal support group)	"Living to the Full" (Bohlemiger & Hulsbergen, 2008)	CES-D	3 months	Post-Intervention:Extensive Email Support 13.84; Minimal Email Support = 12.82; Control = 19.76	*ds* for extensive support and minial support = 0.74 and 0.89. (both in comparison to waitlist control)

Hunkeler et al. (2012)	MTC	$N = 103$; eCare ($n = 51$); control ($n = 52$)	eCare manager answered any questions, but did not provide any additional therapy	eCare Manager	SCID to obtain a Psychiatric Severity Rating (PSR; from 1 or no symptoms, to 6 or meets criteria for severe depression)	6 months, 12 months, 18 months, and 24 months	6 months PSR: eCare $M = 3.20$, Control $M = 3.22$; 12 months PSR: eCare $M = 3.00$, Control $M = 3.10$; 18 months PSR: eCare $M = 2.91$, Control $M = 3.33$; 24 months PSR: eCare $M = 2.95$, Control $M = 3.11$	*d*s for 6, 12, 18, and 24 month PSR scores = 0.016, 0.08, 0.35, and 0.15 (each in comparison to control)
Jacmon et al. (2009)	MTC	$N = 9$	14-module CBT-based online course on depression				Post-Treatment: BDI ($M = 5.0$); HRSD ($M = 4.00$)	N/A (one group design)
Jamison and Scogin (1995)	MTC	$N = 80$; Bibliotherapy CBT ($n = 40$); Waitlist Control	Weekly 10 minute non-therapeutic calls	Feeling Good by David Burns (1980)	HRSD; BDI	3 months	Post-treatment: Intervention HRSD $M = 9.6$, BDI $M = 9.2$; Control HRSD $M = 19.0$, BDI $M = 19.5$	*d*s for the HRSD and BDI = 1.87 and 1.26
Liu et al. (2009)	MTC	$N = 52$; treatment group ($n = 27$); Wait list Control group ($n = 25$)	Weekly check-in emails for treatment group (one participant received weekly phone calls)	Mind over Mood (Chinese version)	BDI-II (Chinese version)	3 months	Post-Treatment: Intervention BDI-II = 18.2; Control BDI-II = 20.9	$d = 0.76$
Lucock et al. (2011)	MTC	$N = 112$; Treatment ($n = 63$); Control ($n = 59$)	Three face-to-face sessions	Self-help books ("Depression;" Depression and Low Mood;" "Stress and Anxiety;" etc.)	CORE-OM	3 months	Post-treatment: Intervention CORE-OM ($M = 12.3$); Control CORE-OM ($M = 15.3$)	$d = 0.38$
Mitchell and Dunn (2007)	MTC	$N = 12$	Administrative staff provided face-to-face contact at weekly appointments, but no therapist contact beyond initial assessment	Beating the Blues	BDI-II	8 weeks	Mdn = 27.5 before, and Mdn = 13.5 after, $p < .005$	N/A (one group design)

(*continued*)

Table 1. (*Continued*)

Author (year of publication)	Type of design	Sample size and conditions	Amount of therapist-patient contact	CBT Program/ protocol used	Primary Outcome measure(s)	Follow-up	Results	Effect Size (active interventions vs. control/ other active treatments)
Mohr et al. (2010)	MTC	$N = 21$	Once a week email/phone call from Coaches (PhD-Level)	moodManager	HRSD; PHQ	7 weeks	HRSD $M = 12.0$; PHQ $M = 5.6$	N/A (one group design)
Ormrod et al. (2010)	MTC	$N = 16$ Computerized cognitive behavioral therapy (CCBT) treatment outcomes	Mental Health Worker introduced the programme using a video, greeted participants and monitored summary sheets. (Amount of interaction not indicated)	Beating the Blues	BAI; BDI	8 Sessions	Pre & Post (BDI Scores): = 33.9 (8.8); 26.1 (11.3)	N/A (one group design)
Perini et al (2009)	MTC	$N = 45$; CaCCBT ($n = 29$); Waitlist Control ($n = 19$)	Weekly email contact from a clinical psychologist	Sadness Program	PHQ-9; BDI-II	8 weeks	Post-treatment: Intervention PHQ-9 ($M = 9.59$) & BDI-II ($M = 17.30$); Control PHQ-9 ($M = 14.11$) and BDI-II scores ($M = 23.33$)	*ds* for PHQ – 9 and BDI = 0.89 and 0.63
Proudfoot et al. (2003)	MTC	$N = 167$; Computerized CBT ($n = 89$); Treatment as Usual ($n = 78$)	Nurse provided up to 5 minutes of in-person administrative support at each of 9 sessions of computer therapy intervention	Beating the Blues	BDI	6 months	Post-treatment: Intervention BDI ($M = 12.04$); Control BDI ($M = 18.36$)	$d = 0.54$
Ruwaard et al. (2009)	MTC	$N = 54$; Web-based CBT ($n = 36$); Waitlist Control ($n = 18$)	Therapists post computerized feedback and further instructions at regular intervals	Web-based CBT	BDI; SCL-90-R	18 months	Post-treatment: Intervention BDI (M =9.8) SCL-90-R (M=26.7); Control BDI (M =15.6) SCL-90-R ($M = 34.4$)	*ds* for BDI and SCL – 90 – R = 0.70 and 1.10
Seekles et al. (2011)	MTC	$N = 120$; Stepped care ($n = 60$); Care as usual ($n = 60$)	Non-therapeutic Supportive email Feedback	Various guided-self help CBT strategies	IDS	N/A	Post-test: Intervention HADS ($M = 24.4$); Control HADS ($M = 26.9$)	$d = 0.18$

Simon et al. (2011)	MTC	$N = 208$; Care as usual control group ($n = 102$); Care management group ($n = 106$)	Three online care management contacts with a trained psychiatric nurse. All communication occurred through secure, asynchronous messages within an electronic medical record	Various guided self-help CBT strategies	SCL	5 months	Post-treatment: Intervention SCL (M =.95); Control SCL (M =.85)	$d = 0.29$
Perini, Titov, and Andrews (2008)	MTC	$N = 141$; Clinician-assisted iCBT($n = 47$); technician-assisted iCBT ($n = 49$) and waitlist control ($n = 40$)	Weekly emails & calls intended	Sadness program (Perini and Titov, 2008)	BDI	4 months	Post-treatment BDI-II & PHQ-9: TA ($M = 15.29$ & 7.59); TA ($M = 14.59$ & 7.30); Control ($M =$ 26.15 & 12.98)	*d*s for clinician and technician assisted groups = 1.27 and 1.20 (both in comparison to waitlist control)
Titov et al. (2011)	MTC	$N = 77$ (38 depression); Intervention ($n =$ 18); Control ($n =$ 19)	Therapist-participant contact was no longer than 10-minutes each week, and was aimed at reinforcing progress, providing protocol-related clarifications, and encouraging the participants to maintain their progress	Wellbeing program	DASS-21; PHQ-9	3 months	Post-treatment DAS-21 & PHQ-9: TA ($M = 28.33$ & 7.67); Control ($M = 45.8$ & 12.15)	*d*s for DASS – 21 and PHQ – 9 = 0.80 and 1.05
Vernmark et al. (2010)	MTC	$N = 88$; self-help internet-based CBT ($n = 29$), personalized email-therapy ($n = 30$), and waitlist control ($n = 29$)	Participants in the email intervention received 1 therapeutic email per week	Various guided self-help CBT strategies	BDI	6 Months	Post-treatment: Intervention Self- Help BDI= 12.3 Intervention Email BDI=10.3 Control BDI = 16.6	*d*s for self-help and email groups = 1.46 and 2.27 (both in comparison to waitlist control)

(*continued*)

Table 1. (*Continued*)

Author (year of publication)	Type of design	Sample size and conditions	Amount of therapist-patient contact	CBT Program/ protocol used	Primary Outcome measure(s)	Follow-up	Results	Effect Size (active interventions vs. control/ other active treatments)
Warme-rdam, van Straten, Twisk, Riper and Cuijpers (2008)	MTC	*N* = 234; internet-based cognitive-behavioral therapy (*n* = 88), problem-solving therapy (*n* = 88), and waitlist control condition (*n* = 87)	iCBT & PST groups received a standardized non-therapeutic weekly e-mail. Approximately 20 minutes per week of e-mail contact between therapist and participant	Coping with Depression (CWD)	CES-D	1 year	Post-treatment CES: iCBT= 17.9, PST = 18.4, and waitlist group = 25.8	5 weeks: *d* = 0.26; iCBT vs. WL *d* = 0.47; PST vs. WL 12 weeks: *d* = 0.70; iCBT vs. WL *d* = 0.66
Watts et al. (2013)	MTC	*N* = 52; Mobile phone group (*n* = 22); computer group (*n* = 30)	Participants received reminder emails and/or phone calls from clinicians until they completed Lesson 2	Get Happy Program	PHQ-9, K-10, and BDI-II	3 months	Post-intervention: Mobile PHQ-9 = 6.55; Computer PHQ-9 = 7.21. Mobile BDI-II = 12.53; computer BDI-II = 13.68. Mobile K-10 = 20.03; computer K-10 = 19.95	*ds* for PHQ – 9, BDI – II, and K – 10 = 0.47, 0.38 and 0.04 (in favor of mobile phone in comparaison to computer group)
Berger et al. (2011)	NTC + MTC	*N* = 76; guided internet-delivered self-help (*n* = 25); unguided internet-delivered self-help (*n* = 25); waitlist control group (n = 26)	Guided self-help condition: weekly emails & encouragement to contact therapist if questions or concerns arose	Deprexis	BDI-II	6 months	Post-treatment: intervention guided BDI-II =17.3 unguided BDI – II =20.8; control BDI – II =28.5	*ds* for guided therapy and unguided therapy groups = 1.14 and 0.66 (both in comparison to waitlist control)
Farrer et al. (2011)	NTC + MTC	*N* = 155; Web CBT with telephone tracking (*n* = 45); Web CBT Only (*n* = 38); Telephone tracking only (n = 37); control (n = 35)	Short and personalized phone calls in telephone tracking groups. No therapist contact in web CBT only group	BluePages; MoodGym	CES – D	6 months	post-treatment CES-D scores Web Only = 24.4; Web with Tracking = 21.0; Tracking Only = 35.1; Control = 35.1	*ds* for web only, web and tracking, and tracking only groups = 0.78, 1.07, and 0.41 (each in comparison to waitlist control)

Richards, Timulak, and Hevey (2013)	NTC + MTC	$N = 101$; self-administered online CBT ($n = 51$); therapist-assisted email CBT ($n = 50$)	Self- administered online CBT (cCBT): no therapist contact. Therapist-assisted email CBT (eCBT): tailored responses from a clinician about participants' concerns	Beating the Blues	BDI-II	16 weeks and 32 weeks	Post-treatment: eCBT BDI – II = 11.52; cCBT BDI – II = 12.81	*d*s at post-treatment, 16-week, and 32-week follow-ups = 0.22, 0.02, and 0.02. (in favor of eCBT in comparison to cCBT)
Sethi (2013)	NTC + MTC	$N = 89$; control group ($n = 23$); face-to-face intervention ($n = 21$); MoodGYM intervention ($n - 23$); in-conjunction intervention ($n = 22$)	MoodGYM condition: no therapist contact. In-conjunction condition: regular face-to-face therapist visits in addition to access to the online program	MoodGYM	K10 and DASS-21	None	Post-intervention: control depression = 20.52; MoodGYM depression = 12.17; Face-to-face depression = 7.80; in-conjunction depression = 8.54	Control vs. MoodGYM $d = 0.70$, face-to-face vs. In-conjunction $d = 0.11$, face-to-face vs. Control $d = 0.83$, in-conjunction vs. Control $d = 0.81$, face-to-face vs. moodGYM $d = 0.57$, inconjunction vs. MoodGYM $d = 0.50$

participants (Christensen et al., 2006). The effect sizes (of active intervention condition vs. control condition at post-treatment) for NTC protocols ranged from $d = 0.10$ (Morgan, Jorm, & Mackinnon, 2013) to 0.64 (Meyer et al., 2009). Some studies compared the effects of different "doses" of CBT intervention on outcome. For instance, Christensen, Griffiths, Machinnon, and Brittliffe (2006) used a dismantling design wherein participants were randomized to receive one of six CBT websites based on the MoodGYM program. Each website delivered increasingly higher "doses" of CBT, including one or more 20–40 minute modules. Post-treatment assessment indicated that the number of modules used in the protocol did not relate linearly to outcome, as the condition with the highest dose (V5), and namely one that used the greatest number of modules, did not show greater improvements than those with three modules. However, it appears that conditions which delivered extended CBT protocols (i.e., two or more modules) were effective in reducing depressive symptoms. Other NTC treatment trials included an internet-based program called Coping with Depression (CWD; Clarke et al., 2009), an internet-based program called Deprexis (Meyer et al., 2009), and an email-based program called Mood Memos (Morgan, Jorm, & Mackinnon, 2012). Most of these trials compared NTC therapy to treatment-as-usual. Overall, results suggested that NTC therapy was equivalent or superior (e.g., Clarke et al., 2009; Meyer et al., 2009) to treatment-as-usual, although the effect size of significant between-group differences tended to be small (e.g., Clarke et al., 2009). Notably, participants were often recruited based on endorsement of "elevated" or "subthreshold" depressive symptoms (e.g., Morgan et al., 2012), rather than a strict Major Depressive Disorder diagnosis, and high rates of attrition were frequently reported (e.g., Christensen et al., 2006; Morgan et al., 2012).

Minimal Therapist-Client Contact Designs

Overall, 26 studies that used MTC protocols were identified. Sample sizes were variable: a few studies recruited less than 20 participants (e.g., Jacmon, Malouff, & Taylor, 2009; Mitchell & Dunn, 2007; Ormrod, Kennedy, Scott, & Cavanagh, 2010), whereas several other studies recruited over 150 participants (e.g., Fledderus, Bohlmeijer, Pieterse, & Schreurs, 2012). Effect sizes reported also varied greatly, with a range of $d = 0.18$ (Seekles, van Straten, Beekman, van Marwijk, & Cuijpers, 2011) to 1.78 (Andersson et al., 2013). The type of MTC therapy administered across trials was diverse, including a guided self-help protocol of various components provided via stepped-care (Seekles et al., 2011); multiple bibliotherapy interventions (e.g., Bowman, Scogin, & Lyrene, 1995; Liu et al., 2009); and various computerized (e.g., Mitchell & Dunn, 2007; Ormrod et al., 2010; Perini, Titov, & Andrews, 2009; Proudfoot et al., 2003) and internet-based (e.g., Andersson et al., 2005; Dear et al., 2011; Ellis, Campbell, Sethi, & O'Dea, 2011; Ruwaard et al., 2009; Titov et al., 2011; Vernmark et al., 2010) CBT interventions. Interventions were supported with various forms of clinician assistance and/or feedback, including brief telephone calls to monitor adherence and increase compliance to the program (Bowman et al., 1995); standardized or individualized email support (Andersson et al., 2005; Fledderus et al., 2012); and brief in-person contact (Lucock, Kirby, and Wainwright, 2011; Proudfoot et al., 2003; Titov et al., 2011). The nature of trials of form of treatment evaluation also varied, including comparison of the outcome of MTC therapy to a wait-list condition (e.g., Jamison & Scogin, 1995; Lucock et al., 2011; Vernmark et al., 2010) and active control condition (e.g., discussion group; Andersson et al., 2005; Ellis et al., 2011), as well as uncontrolled, within-group pre-post comparison (Mohr et al., 2010).

Overall, results consistently suggested that MTC therapy provided superior outcomes to wait-list conditions (e.g., Jamison & Scogin, 1995; Lucock et al., 2011; Titov et al., 2011; Vernmark et al., 2010). Comparisons to treatment-as-usual also indicated superior outcomes with MTC therapy (e.g., Proudfoot et al., 2003)

In addition, some MTC trials included comparisons of various forms of MTC therapy within one trial, including provision of MTC therapy with variable amounts and type of therapist contact. For example, Fledderus et al. (2012) examined the efficacy of a self-help Acceptance and Commitment Therapy manual, and included two experimental groups: one with standardized email support (i.e., questions about progress, and subsequent positive and encouraging feedback) and one with individualized email support (i.e., questions about progress as well as discoveries/experiences, and feedback regarding responses as well as advice and instruction regarding the text and exercises). Post-treatment and three-month follow-up assessment indicated that, in comparison to a wait-list control group, both experimental groups showed significant reductions in depressive symptomatology. However, there was no difference in outcome between the two experimental groups, suggesting that minimal contact with a therapist is adequate for a self-help therapy to be effective in improving depressive symptomatology. In addition, Titov et al. (2010) suggested that the level of training of the therapist supporting self-help therapy does not affect outcome. Specifically, Titov et al. indicated that participants who received an internet-based CBT program demonstrated similar improvements in depressive symptomatology regardless of whether their program was supported by weekly emails and phone calls from a psychiatrist or from a technician who had no formal health-care or counseling training.

Mixed No Contact And Minimal Contact Designs

Four studies that employed a mixed design of no therapist-client contact and minimal therapist-client contact were identified. Given small overall sample sizes (as low as 76; Berger, Hammerli, Gubser, Andersson, & Caspar, 2011), and with use of multiple conditions (e.g., Sethi, 2013, which had four cells), these studies had relatively small cell sizes. Thus, results obtained from such studies were interpreted with caution. Internet interventions with some therapist contact were superior to those with no therapist contact when directly compared in two of the mixed design studies identified (Berger et al., 2011—$d = 1.14$ vs. 0.66; Farrer, Christensen, Griffiths, & Mackinnon, 2011—$d = 1.07$ vs. 0.78). The other two identified studies had inconsistent results. For example, although guided interventions produced slightly superior results to unguided interventions at post-treatment in the trial by Richards et al. (2013), this difference vanished in the 16 and 32-week follow-up periods. In Sethi's (2013) trial, participants allocated to the computerized MoodGym CBT experienced similar, but slightly less, therapeutic gains to individuals allocated to the face-to-face therapy condition ($d = 0.70$ vs. 0.83) when both were compared to waitlist controls.

Reduced Contact Interventions

Table 2 provides a summary of the reduced contact interventions used within the reviewed trials. The 41 reviewed trials used a variety of interventions, but the majority of these were web or online based. However, some of the interventions were bibliotherapeutic in nature (e.g., *Living to the Full* used in Fledderus et al., 2012) or mobile based (myCompass used in

Table 2. Description of reduced contact CBT interventions used in the reviewed trials.

Name of Program/Book	Study	Focus and Nature of Content	Number of Modules/Pages/ Duration	Mode of Delivery
MoodGym	Christensen et al. (2006); Lintvedt et al. (2013); Ellis et al. (2011); Farrer et al. (2011); Sethi (2013)	Modules focusing on feelings, thoughts, "unwrapping" (cognitive restructuring), stress management, and relationships	5 modules	Web/Online
Coping With Depression (CWD)	Clarke et al. (2009); Warmerdam et al. (2008)	Program is psychoeducational in nature with focus on constructive thinking, self-reinforcement, communication, and problem-solving	12 modules (plus 2 booster sessions)	Web/Online; Bibliotherapy
Cognitive Self-Therapy	Den Boer et al. (2007)	Steps are conducted among a group of peers. Steps include exploration of recent life events, association of past childhood events and present issues, gaining insight on patterns of emotion, cognition, behavior and needs in relation to self and others, cognitive restructuring and behavioral activation	4 weeks	Completed in-person among a group of peers.
Mind Over Mood	Haeffel (2010); Liu et al. (2009)	Based on Greenberger and Padesky's workbook (2006). Psychoeducation regarding connection between thoughts, emotions, and behaviors. Thought records and restructuring	80 pages	Workbook/ Bibliotherapy
BluePages	Lintvedt et al. (2013); Farrer et al. (2011)	Used to supplement MoodGym Program. Provides screening tests; psychoeducation, and resources for individual sufferers (bluepages. anu.edu.au)	N/A	Web/Online
eCare Manager	Hunkeler et al. (2012)	Includes personalized self-monitoring and secure massaging to a psychiatric nurse care manager (eCare manager). Offers ability to participate in monitored discussion forum. Focuses on psychoeducation grounded in CBT principles, behavioral activation, social support, and problem solving	No set number of modules. Site was available for 12 months and access was available at any point in this year period.	Web/Online
Deprexis	Meyer et al. (2009); Moritz et al. (2012); Berger et al. (2011)	Modules focus on behavioral activation, cognitive modification, mindfulness, interpersonal skills, relations/exercise, problem solving, childhood experiences, positive psychology, dreamwork and emotion focused interventions, and psychoeducation	12 modules (10 Content, one introductory and one summary module)	Web/Online
myCompass	Proudfoot et al. (2013)	Real-time self-monitoring app/web application. Modules are based upon CBT, interpersonal psychotherapy, problem solving psychotherapy and positive psychology. Focusing on managing fears, tacking unhelpful thinking, managing loss and major life change, and solving problems	12 modules	Web/Online; Mobile

Wellbeing Course	Titov et al. (2013); Dear et al. (2011); Titov et al. (2011)	Modules focus on psychoeducation, behavioral activation, cognitive restructuring, exposure, and relapse prevention. Designed for depression and anxiety symptoms	5 modules over 5 weeks	Web/Online; Workbook
Good Mood Guide	Bilich et al. (2008).	Modules focus on psychoeducation, behavioral activation, relationship between thoughts, mood, and emotion, thought monitoring, advanced behavior modification, cognitive restructuring, review of progress, and relapse prevention	8 modules (50 Minutes each)completed over 8 weeks	Bibliotherapy/ Workbook
Feeling Good	Bowman et al. (1995); Jamison and Scogin (1995)	Chapters on CBT theory and research, psychoeducation about depression, behavior modification, defeating hopelessness, thought monitoring and challenging, coping with stress, the chemistry of mood, etc	700–800 pages	Bibliotherapy with accompanying workbook.
MoodGarden	Ellis et al. (2011)	Supplemental peer support network to the MoodGym. Incorporates forums with blogs and charts	N/A	Web/Online
Living to the Full	Fledderus et al. (2012)	Based on Acceptance and Commitment Therapy principles. Focus is on acceptance ("active and aware embracement of aversive internal experiences"), cognitive diffusion ("creating context in which undesirable functions of thought disappear"), contact with the present moment, choosing different values, and commitment to choices	9 modules (in three parts)	Bibliotherapy; workbook
Beating the Blues	Mitchell and Dunn (2007); Ormrod et al. (2010); Proudfoot et al. (2003); Richards et al. (2012)	Modules focus on psychoeducation, understanding connections between thoughts, mood, and behavior, behavioral activation, thought monitoring and restructuring, and relapse prevention. Designed to tackle depression and anxiety symptoms	8 modules (50 minutes each)	Computerized/Web/ Online
MoodManager	Mohr et al. (2010)	Modules focus basics of CBT ("getting started), description of connections between thoughts, mood, and behavior, and monitoring activities, scheduling positive activities/behavioral activation, identifying/monitoring thoughts, cognitive restructuring/ challenging thoughts, and relapse prevention/ maintaining gains	6 modules (15–20 minutes each).	Web/Online
Sadness Program	Perini et al. (2009); Titov et al. (2010)	Modules focus on behavioral activation, cognitive restructuring, problem solving, and assertiveness training. The program also consists of homework assessments, participation in an online forum, and email contact with mental health clinician	6 modules (8-week period)	Web/Online

(*continued*)

Table 2. (*Continued*)

Name of Program/Book	Study	Focus and Nature of Content	Number of Modules/Pages/ Duration	Mode of Delivery
Get Happy Program	Watts et al. (2013)	Based on Sadness Program (Perini et al., 2009). Additional information on sleep hygiene, and stories from previous participant experiences. The modules are presented in the form of a comic (participants follow the story of Jess, a character with depression)	6 modules (8-week period)	Web/Online
Eclectic/non-standardized programs	Morgan et al. (2012); Andersson et al. (2005); Andersson et al. (2013); Day et al. (2013); Jacmon et al. (2009); Lucock et al. (2011); Ruwaard et al. (2009); Seekles et al. (2011); Simon et al. (2011); Vernmark et al. (2010)	All based on CBT principles and constitute of psychoeducation regarding depression and CBT and connection between thoughts, mood, and behavior, behavioral activation, thought monitoring and restructuring, and relapse prevention	Varied	Web/Online; Mobile; Bibliotherapy

Proudfoot et al., 2013). As is consistent with CBT, the majority of these interventions were comprised of psychoeducation, behavioral activation, and cognitive monitoring and restructuring modules. A number of trials did not use a specific intervention program, instead using CBT elements in an eclectic manner (e.g., Lucock et al., 2011; Ruwaard et al., 2009; Seekles et al., 2011). Most of the interventions were short in duration, ranging from four (e.g., Cognitive Self-Therapy in Den Boer et al., 2007) to 12 modules (Deprexis in Meyer et al., 2009), with most having a designed pace of one module per week.

Theoretical and Methodological Considerations

This review provides a summary of the efficacy of CBT with reduced client-therapist contact for adult depression. Overall, this review indicates that reduced contact therapy for depression—including those with no or minimal therapist-client contact—can be effective in improving depressive symptomatology. In regards to no therapist contact treatments, review of available, albeit limited, studies suggests that such therapy can provide superior outcomes to either a wait-list control group (Meyer et al., 2009) or placebo treatment that does not involve human contact (Clarke et al., 2009; Morgan et al., 2012). In addition, the use of self-administered, no therapist contact interventions has promoted equivalent treatment outcomes as treatment-as-usual by a general practitioner. In regards to minimal therapist contact treatments, results consistently indicated that such treatments are likewise superior to a wait-list control conditions (e.g., Liu et al., 2009; Titov et al., 2011; Ruwaard et al., 2009). Moreover, two studies of guided and unguided versions of internet-based therapy suggested that guided (i.e., minimal contact) therapy was superior to unguided (i.e., no contact) therapy (Berger et al., 2011; Farrer et al., 2011). However, these results were not consistent across all studies (e.g., Richards et al., 2013; Sethi, 2013). When minimal contact therapies were compared to therapies that incorporated human contact (i.e., treatment-as-usual), the outcome of such therapies was equivalent (Seekles et al., 2011).

These findings suggest that positive therapeutic outcome can be facilitated in the context of reduced therapist contact. Furthermore, some of the previously reviewed studies (e.g., Berger et al., 2011; Titov et al., 2010) demonstrated effect sizes comparable to previous studies of traditional, face-to-face CBT. These findings suggest that positive therapeutic outcome may not only be possible via reduced contact therapy, but may at times achieve equivalent outcomes to those achieved via traditional, face-to-face therapy with full therapist involvement.

There are several methodological limitations of the above reviewed studies and the overall review that limit the strength of conclusions drawn from this literature base. Firstly, many of the reviewed studies relied on small sample sizes that limited the power to detect differences between groups and to generalize results to other samples. Second, outcome was typically assessed via self-report measures (e.g., Beck Depression Inventory-II, Centre for Epidemiological Studies Depression Scale, Hamilton Rating Scale for Depression, etc.), and few studies provided long-term follow-up assessment beyond six months. Long-term follow-up assessment is essential to understanding the impact of reduced therapist contact on symptom change across time, and to provide comparisons to the long-term effects of traditional face-to-face therapy. Third, the impact of attrition was not consistently accounted for in analyses, which is particularly important considering the oft-reported elevated drop-out rates in reduced contact therapies (e.g., Kaltenthaler et al., 2008). Moreover, participants' ratings of

the acceptability of reduced contact therapy were rarely provided, an important factor to consider in order to achieve optimal dissemination and uptake of treatments within the community. Compliance with self-help tools was not always examined, and therapist adherence to treatment protocol during brief therapist contact was often ignored. In addition, although this review focused on CBT, a heterogeneous set of CBT tools (e.g., Deprexis, Mind over Mood workbook, MoodGym, etc.) were used across studies which challenges conclusions about specific factors that were associated with positive treatment outcome.

In addition, few studies examined individual predictors of treatment response, which is critical to identifying subgroups of participants who are more or less likely to respond to treatment. That is, participant related factors, such as participants' prior history of mental health treatment, were often overlooked in the reviewed studies. Further, many samples were restricted in range of symptom severity, often endorsing only mild to moderate depressive symptoms. As reduced contact therapies have been suggested for use at lower levels of stepped care treatments (National Institute for Health and Clinical Excellence, 2009), reliance on samples with less severe depressive symptomatology may be appropriate. However, recent research has indicated different patterns of associations between processes and outcomes in individual, face-to-face cognitive therapy for depression dependent on the nature of the sample (Webb et al., 2012). Specifically, across two samples of adults with major depression, therapeutic alliance was more predictive of subsequent symptom change in the sample with less severe depressive symptomatology. These findings suggest that examining the impact of reduced therapist contact on treatment outcome in individuals with a range of depressive symptomatology may generate important information regarding differential process and outcome associations in treatment.

In addition, there are a number of variables that may be related to treatment outcome that were not examined in our review. For example, reduced therapist contact may decrease individuals' sense of accountability for complying with treatment protocol. Relatedly, reduced therapist contact may limit opportunities for therapists to detect client noncompliance and to motivate and problem-solve with clients to increase adherence to the treatment protocol. With reduced therapist contact, clients may inappropriately interpret and implement strategies recommended in self-help resources, and not receive appropriate feedback and guidance to correct their misunderstandings. In a survey of CBT therapists, non-compliance with treatment and lack of detection of worsening clinical state were perceived as the most significant problems with using self-help resources by over 70% of respondents (MacLeod, Martinez, & Williams, 2009). Last, this review exclusively examined reduced contact CBT for adult depression. Thus, results may not generalize to reduced contact therapy with a different age group or a different psychological disorder. In particular, results may not generalize to treatment involving a different theoretical orientation. In CBT, greater emphasis is placed on the importance of specific rather than nonspecific factors of therapy in promoting positive change. At the same time, specific elements are embedded within CBT that have been associated with aspects of therapeutic alliance, such as discussion of therapeutic tasks and goals. Thus, it is possible that CBT may achieve better results when modified from traditional, face-to-face protocols to reduced contact therapy than other treatment orientations, such as emotion-focused therapy or interpersonal therapy. Furthermore, and as motioned above, CBT is inherently structured, easily lending itself to the standardization and manualization of therapy that is necessary for a reduced contact delivery. Thus, it is questionable

whether treatments from other therapeutic orientations would demonstrate similar efficacy when provided via this modality.

Summary and Conclusions

The following tentative conclusions are drawn from the above review. Firstly, CBT with reduced therapist involvement is more efficacious, overall, than no treatment or treatment-as-usual in remediating mild to moderate depressive symptoms. However, the extent to which this efficacy is demonstrable with no therapist-client contact therapies remains questionable, as there is a scarcity of studies that examine this level of reduced therapist involvement and, of those that do, several demonstrate atypically high dropout rates. Second, more research is needed to ascertain the effectiveness of reduced contact protocols in depression, given the number of limitations that plague this field of research. Third, treatments with some form of therapist contact, albeit limited, appear to produce larger effects than those with no therapist contact. With this said, trials which examine minimal therapist contact protocols outnumber those with no therapist contact, and so the superiority of the former over the latter remains to be firmly established. The efficacy of many forms of reduced contact therapy, highlighted throughout the above review, emphasizes the importance of increasing efforts to disseminate this modality of treatment from controlled treatment trials into community use. Dissemination and uptake of reduced contact therapy may increase access to and cost of effective psychotherapy for individuals suffering from depression. Over the past few decades, healthcare systems worldwide have placed increasing emphasis on evidence-based practice and cost-effective delivery of care (Newnham & Page, 2009). However, the reality remains that individuals in need of treatment are often not able to access services and receive the effective treatments that have been developed. This has resulted in many individuals suffering through unacceptably long waiting periods to receive psychotherapy, or completely lacking any access to treatment at all (Proudfoot, 2004). Continuing with the current norms in treatment delivery—i.e., relying upon traditional, face-to-face therapy—will likely continue to create challenges for increasing access to effective care and providing care in a cost-effective manner. However, findings from the above review suggest that reliance on face-to-face therapy may not be necessary under all circumstances; the assumption that human contact is necessary to create positive therapeutic change may be unwarranted. Instead, increased provision of reduced contact therapy may provide equivalent treatment outcomes for some individuals, with less use of financial and human resources, and lead to quality, cost-effective care being more easily and readily accessible to a wider population.

However, reduced contact therapy is likely not appropriate for all individuals and presenting problems, and should not lead to the elimination of traditional, face-to-face therapy. For many case presentations, face-to-face therapy that involves therapist delivery and development is likely essential. Future research priorities should include empirical evaluation of the type of individuals and presenting problems (e.g., client characteristics, treatment history, primary diagnosis, comorbid psychopathology, etc.) that reduced contact therapy is most appropriate for, and consideration of how such therapy may most effectively be provided within stepped care treatment models. Indeed, elimination of all human contact is likely neither feasible nor ethical. Human contact may be necessary to monitor client progress, including detection of harmful intervention techniques that worsen clinical states, iatrogenic effects of treatment, elevated safety risk, and any need for a change in treatment plan.

However, the extent to which human contact may be necessary to create therapeutic change, may be questioned by the positive treatment outcomes demonstrated in reduced contact therapy. Such findings are imperative to consider as the field of mental health takes steps forward in trying to address the fundamental issue of improving access to effective treatment and helping more individuals find relief from mental health problems.

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