The effectiveness of telephone-delivered psychological therapies for depression and anxiety: a systematic review

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Abstract

Objectives: The telephone is increasingly used to deliver psychological therapies for common mental health problems. This review addressed the following question: Are evidence-based psychological therapies for adults with depression and/or anxiety effective in reducing psychological symptoms when delivered over the telephone?

Method: A systematic search for articles published over a 25-year period (January 1991 to May 2016) was performed using the databases PsycINFO, PubMed and Web of Science. Citation searches, manual searches of bibliographies of relevant papers and hand searches of key journals were also conducted. The quality of the studies included for review was assessed using the Effective Public Health Practice Project Quality Assessment Tool.

Results: Fourteen studies met inclusion criteria for the review. Ten reported findings from telephone treatment for depression and four for anxiety. Nine studies used randomised controlled designs, two used quasi-experimental designs and three used uncontrolled designs. Thirteen studies reported reductions in symptoms of depression or anxiety. Cohen's *d* ranged from .25 to 1.98 (median = .61) for controlled studies and from 1.13 to 1.90 (median = 1.26) for uncontrolled studies. Only four studies reported clinically significant change.

Conclusions: The findings indicate that telephone-delivered interventions show promise in reducing symptoms of depression and anxiety. Further research is required to establish the types of interventions that are most effective and the characteristics of clients who find them beneficial.

KEYWORDS: Telemental health; depression; anxiety; psychological therapies; psychotherapy

Introduction

Psychological therapies such as cognitive behavioural therapy (CBT) are effective in treating depression and anxiety and produce comparable outcomes to pharmacological interventions[1,2]. Such therapies have traditionally been delivered face-to-face, but recent years have seen considerable advances in the provision of therapy by the telephone, over the internet and via guided self-help[3,4]. Telephone-delivered psychological therapy, i.e., a standard face-to-face protocol delivered over the telephone, can reduce costs and has the potential to offer clients immediacy of help, anonymity and ease of access[5,6]. Research has shown that telephone interventions are convenient for patients and therapists, remove barriers to treatment, and can reduce treatment time[7,8,9]. In the United States, as many as two thirds of psychologists have used the telephone to provide at least one session of psychological therapy (e.g., providing psychoeducation and reviewing homework)[10] and in the UK, low-intensity therapy is offered to clients by telephone in Improving Access to Psychological Therapies (IAPT) primary care services[11]. However, it has been argued that telephone-delivered psychological therapy may be less effective as the absence of direct interpersonal contact may disrupt the development of a strong therapeutic alliance[12,13].

Previous reviews of telephone-delivered interventions

Previous research has tended to focus on the effectiveness of telephone-delivered interventions for people with physical health conditions. For example, several reviews have concluded that telephone-delivered interventions can reduce mortality and improve quality of life in patients with chronic heart failure[14],aid smoking cessation[15], and improve health for people with chronic illnesses[16].

More recently, an emerging body of literature has also evaluated the effectiveness of telephone-delivered therapy for psychological conditions.

In 2006, a review of 14 controlled studies of depression, anxiety, eating disorders, substance abuse and schizophrenia highlighted that telephone-delivered psychological interventions have potential to reduce psychological symptoms[5]. The included studies used a range of different psychological approaches, but the results suggested that structured sessions and homework tasks were key elements of effective telephone-delivered psychological therapies. However, the wide range of mental health disorders with differing treatment guidelines and outcomes prevented the authors from drawing firm conclusions.

In 2008, a comprehensive review of 12 randomised controlled trials (RCTs) found that telephone-administered psychotherapy for depression resulted in significant reductions in depressive symptoms compared to controls, and a significantly lower attrition rate than in traditional face-to-face therapy[6]. However, this review was limited by the inclusion of studies which did not evaluate the use of an evidence-based treatment (e.g., an 'uncertainty intervention'), as well as studies where the primary aim of the intervention was to target outcomes specific to physical illness such as coping and adjustment rather than symptoms of psychological disorders.

In 2011, a review of eight RCTs of telephone-delivered CBT for people with chronic physical health conditions concluded that the intervention improved health and also suggested that the intervention might have psychological benefits[16]. Five of the eight studies measured psychological outcomes, such as depression, anxiety or distress, and all reported significant improvements. However, the focus of the review was on physical health outcomes, rather than on psychological symptoms.

In summary, the heterogeneity of disorders included in previous reviews makes it difficult to isolate the effects of telephone-delivered interventions for particular psychological conditions, and the inclusion of psychological therapies without an established evidence base limits the conclusions that can be drawn. It remains unclear whether the telephone is an

effective way of delivering evidence-based psychological therapies for common mental health conditions, such as depression and anxiety.

Aim of current review

The current review addressed the following question: Are evidence-based psychological therapies for adults with depression and/or anxiety effective in reducing psychological symptoms when delivered over the telephone? Both studies of depression and anxiety were considered as these disorders are highly prevalent and often co-occur. Furthermore, depression and anxiety may be particularly amenable to telephone interventions as the recommended therapies (e.g., CBT) can be adapted for a non-face-to-face modality, and treatment guidelines recommend a stepped-care approach[17,18].

Method

Search Strategy

Studies were identified via a combination of computerised database searches, citation searching, manual searches of bibliographies of relevant papers, and hand searching of key journals. A systematic search of the literature for articles published over a 25-year period (January 1991 to May 2016) was performed using the databases PsycINFO, PubMed and Web of Science. Results were limited to English language, peer-reviewed journal articles. Table 1 shows the search terms used for each database).

Eligibility Criteria

Participants. Studies were eligible if the participants were adults (18 years or older, no upper age limit) who had received an intervention to reduce symptoms of depression and/or anxiety. Studies of individuals who had a physical health condition (e.g., multiple sclerosis, Parkinson's disease) were included only if the target problem was depression or anxiety.

Interventions. The intervention delivered was an evidence-based psychological therapy for depression and/or anxiety disorders, delivered by telephone (landline or mobile). Evidence-based was defined as a manualised treatment recommended by the UK National Institute for Health and Care Excellence (NICE)[17,18]. For depression, this included CBT, Interpersonal Psychotherapy (IPT) and behavioural activation; for anxiety disorders, this included CBT, exposure and response prevention (ERP) and applied relaxation. Delivery by telephone was defined as one-to-one audio conversations between therapist and client; studies were included if there was a face-to-face initial assessment or final session, as long as all other sessions were by telephone. Studies were excluded if the intervention involved the use of videoconference software (e.g., Skype), other electronic visual aids or smart phone apps; or the telephone intervention was delivered as an adjunct to another therapeutic intervention, e.g., face-to-face therapy or computer-based therapeutic programmes; or the intervention was based on a single call to a telephone hotline or crisis intervention service.

Design. Controlled studies (randomised and non-randomised) and uncontrolled studies (also known as cohort studies, open trials or one-group pretest-posttest designs) were included if they obtained quantitative outcome data at a minimum of two time points (e.g., pre- and post-intervention) and the outcome data were statistically analysed. Although RCTs are often considered the gold standard of evidence, other methodologies lower in the hierarchy of evidence were included because they can provide useful information about treatment effectiveness, particularly for new types of intervention[19].

Outcomes. Studies were eligible if they used a psychometrically sound measure of symptoms of depression and/or anxiety as a primary outcome measure. This included self-report and clinician-rated measures with established reliability and validity.

Data Extraction

Key data were extracted, including author, date, journal, design, sample size, participant characteristics, details of intervention (including theoretical orientation, number of sessions and duration), details of any control group, primary outcome measures, follow-up, statistical techniques and summary of outcome. Data were extracted by the first author. The second author reviewed data extraction at every stage and a consensus approach was used to resolve areas of uncertainty or disagreement; this comprised discussion between the two authors and consultation with an experienced researcher external to the review.

Assessment of Methodological Quality

The quality of the studies included for review was assessed using the Effective Public Health Practice Project Quality Assessment Tool (EPHPP[20,21]), which covers six domains: selection bias, study design, the presence of confounding variables, blinding, data collection methods, and participant withdrawals and drop-outs. This tool was selected because it was designed for use in public health research and can be used to evaluate a range of study designs, including uncontrolled studies. It has evidence of content and construct validity[20,21] and has been judged suitable for systematic reviews of intervention effectiveness[22].

For each paper, each of the six domains was rated as *strong, moderate* or *weak* based on information contained in the paper and following the tool guidelines. For the domain of study design, in order to clarify the distinction between non-randomised controlled designs and uncontrolled designs, the former were rated as *moderate* and the latter as *weak*. For the domain of withdrawals and drop-outs, studies were rated as *strong* if they carried out an intent-to-treat analysis and attrition was less than 33%. Ratings were made independently by both authors; disparities in ratings were resolved by consensus, i.e., discussion between raters and consultation with an experienced researcher external to the review.

Synthesis

Synthesis focused on study design, participant characteristics, nature of the intervention, and the outcomes reported. Controlled and uncontrolled designs, and studies examining interventions for depression and anxiety were considered separately. Outcomes were considered in terms of statistical significance, effect sizes and clinical significance. Cohen's *d* was used as a measure of effect size[23]. Effect sizes were either extracted from the papers or computed from study data and figures where possible. For controlled studies, effect sizes were calculated by dividing the difference in post-intervention mean scores by the post-intervention pooled standard deviation (m_2-m_1/s_{pooled})[23] As indicated in the Results, no calculations were needed for uncontrolled studies. Where studies used multiple outcome measures, effect sizes were based on the primary outcome measure identified in the paper, or calculated based on the most widely used and validated measure. Clinical significance[24] was extracted from papers where possible.

Results

Figure 1 shows the study selection process. The electronic search resulted in a total of 1,877 unique records (i.e., following removal of duplicates), of which 14 studies met the inclusion criteria for the review. Manual searches of bibliographies and hand searching of key journals did not yield any additional studies.

The characteristics of the 14 studies that met the eligibility criteria are outlined in Table 2. Ten studies examined telephone interventions in depression, only four of which were covered by Mohr et al.'s meta-analysis[6]. Four focused on anxiety disorders, only two of which were covered by Leach and Christensen's review[5].

Quality Assessment of Included Studies

The quality ratings of the included studies (using the EPHPP) are shown in Table 3. The studies were generally strong in three domains: confounders, data collection methods and withdrawals/drop-outs. All studies using a controlled design examined possible confounding

variables between experimental and control groups; all studies used reliable and valid measures of depression and anxiety; and most studies reported low attrition rates and/or the use of intent-to-treat analysis. Study quality was weaker or more variable for the remaining three domains: selection bias, design and blinding. Selection bias (the degree to which participants were likely to be representative of the target population) was problematic because most studies did not use a random sampling procedure and response rates at different stages of recruitment were often not reported. Design showed some variability but was strong for the majority of studies (see details in next section). Blinding was moderate to weak because of the difficulty of blinding participants to a treatment intervention and because blind outcome assessors were used in only some studies.

Study Design and Sample Characteristics

Nine studies used randomised controlled designs, two used quasi-experimental designs (a non-randomised wait-list control group and a benchmarking comparison group) and three used uncontrolled designs.

The sample size of the included studies ranged from six to 127; in general, the sample sizes were smaller in the anxiety studies. Women outnumbered men in 11 studies and the mean age range of participants was 32-66 years.

Five of the 10 depression studies focused on participants with physical health problems e.g., HIV[25,26], multiple sclerosis[27,28] or Parkinson's disease[29]. In contrast, participants in the studies of anxiety disorders did not report any additional physical health concerns; two of the four studies focused on OCD[30,31].

The number of participants completing therapy was not always reported clearly and treatment adherence was defined in a number of ways. For the studies on depression, study drop-out rates ranged from 0-28%; in anxiety studies, the study drop-out rate varied from 6-21%. Ten studies (seven depression and three anxiety) used intent-to-treat analyses.

One aim of telephone-delivered interventions is to improve access to psychological therapy. Of the 10 depression studies, three explicitly stated that they recruited participants who would have been unable to receive psychological therapy elsewhere. Of the four anxiety studies, one targeted participants living in rural areas[32].

The percentage of participants who were concurrently taking anti-depressant medication or who had comorbid diagnoses of anxiety or depression was not always clearly reported.

Nature of Telephone Intervention

The majority of studies (12/14) evaluated a CBT intervention. Of the 10 depression studies, eight delivered CBT and two[25,33] delivered IPT. In general, the treatment protocols in the depression studies were well described. Several studies specifically tailored the treatment programmes to the participants' physical health needs.

All interventions for the four anxiety studies incorporated cognitive and/or behavioural components to treatment. Two studies delivered CBT[31,34] and two delivered exposure and response prevention (ERP)[30,36]. In general, less detail was provided regarding treatment protocols for the anxiety studies than for the depression studies.

The majority of studies (11/14) reported details of the therapists delivering the telephone interventions. In all of these, the therapists were trained in the delivery of the intervention provided.

The number of telephone intervention sessions targeting depression ranged from six to 16 (mean = 9.7) lasting between 27-90 minutes each. In one study 22% of participants chose to receive their first session in-person[35].

The number of sessions for anxiety was similar, ranging from 8 to 12 (mean = 9.5), but each session was shorter lasting between 15-60 minutes each. All studies offered telephone sessions on a weekly basis.

Outcomes: Overview

The majority of studies reported outcome in terms of multiple self-report questionnaire measures. Three of the 10 depression studies and all four anxiety studies also used clinician administered diagnostic interviews as an outcome measure.

Outcome was considered in terms of statistical significance, effect sizes and clinical significance. Thirteen of the 14 studies reported statistically significant reductions in symptoms of depression or anxiety following the telephone-administered intervention, the one exception being an RCT of telephone CBT for depression[36]. Table 2 shows the effect sizes for the primary outcome measure. Effect sizes were reported in only five of the 14 studies. It was not possible to calculate effect sizes for four studies as means and standard deviations were not reported. For the 10 studies where effect size could be examined, Cohen's *d* ranged from .25 to 1.98 (median = .61) for the eight controlled studies and from 1.13 to 1.90 (median = 1.26) for the two uncontrolled studies. Only four studies reported findings in terms of clinically significant change (see sections below).

Depression Studies

RCTs. Five of the six RCTs on depression reported statistically significant reductions in symptoms following telephone-delivered CBT (three studies[27,28,35]) or IPT (two studies[25,33]). The control groups comprised no-treatment controls[33], treatment as usual[25,27,], enhanced usual care[35] and an alternative active treatment control[28]. These studies included people with recurrent depression[33], multiple sclerosis[27], HIV/AIDS[25] and people from rural Latino communities[35]. Only two of these studies included a follow-up period. Dwight-Johnson et al.[35] demonstrated that the reductions in depressive symptoms were maintained over six months follow-up. It is noteworthy, however, that in the RCT by Mohr et al.[28] comparing telephone-delivered CBT with telephone-administered supportive emotion-focused therapy, the differential effectiveness of CBT post-intervention was not seen at 12 months

follow-up. The sixth RCT[36] found that telephone-delivered CBT did not significantly reduce symptoms of depression in veterans, compared with treatment as usual.

Effect sizes could be analysed for five of the six RCTs of depression; Cohen's *d* ranged from .25 to 1.98 (median = .58). Only one of these studies reported clinical significance: Ransom et al.[25] found that 23% of participants showed post-intervention BDI-II scores below the clinical cut-off compared to 9% of participants in the control condition.

Quasi-experimental and uncontrolled studies. One study[37] used a quasi-experimental, benchmarking design (comparison with published data) and found statistically significant reductions in depression following telephone-delivered CBT; similar patterns of change were found between the study participants and the benchmarking comparison group. Effect size could not be analysed for this study, but clinical significance was reported: 42% of the sample were considered recovered (i.e., scores below the clinical cut-off) post-treatment.

The three uncontrolled studies on depression all reported statistically significant reductions in depression following telephone-delivered CBT. These studies included people with Parkinson's disease[29], HIV[26] and veterans with depression[38]. Two had very small sample sizes[26,38]. The reductions in depression for veterans, based on a case series design[38], needs to be treated with particular caution given the later findings from an RCT demonstrating non-significant reductions in symptoms in a similar sample of participants[36].

Effect sizes could be analysed for only two of the three studies; Cohen's *d* ranged from 1.13 to 1.90 (median = 1.25). None reported clinical significance.

Anxiety Studies

RCTs. All three RCTs of anxiety reported statistically significant reductions in anxiety symptoms following the telephone-delivered intervention. In one study, participants randomised to telephone treatment reported comparable reductions in OCD symptoms to a

face-to-face treatment control group and these gains were maintained over a six month follow-up period[30].

Telephone therapy was also shown to be effective in an RCT for people with panic disorder[32]; participants reported reductions in fear pre- to post-treatment compared with a wait-list control and these gains were maintained over a three-month follow-up. In a transdiganostic CBT intervention focusing on anxiety sensitivity34 significant reductions were found in anxiety sensitivity and symptoms of panic, social phobia and post-traumatic stress disorder, compared to wait-list controls.

Effect sizes could be analysed for two of the three RCTs of anxiety; Cohen's *d* ranged from .34 to 1.07 (median = .69). Two studies reported clinical significance. In Lovell et al.'s trial[30], 77% of participants who received exposure and response prevention delivered by telephone showed clinical change (as measured by a reduction of at least two standard deviations in OCD symptom scores[24]) compared to 67% of participants who received the same treatment face-to-face. Olthuis et al.[34] found that 45.8% of participants in the CBT condition had recovered, compared to 17.6% of the wait-list controls.

Quasi-experimental study. One controlled non-randomised controlled study compared the effects of CBT and ERP with a delayed wait-list control group[31]. Statistically significant reductions in OCD symptoms compared to controls (Cohen's *d*: 1.07) were maintained at 12 week follow-up. Clinical significance was not reported[31].

Publication Bias

Visual inspection of a plot of effect size against sample size (for the 10 studies for which effect size information was available) showed little evidence of publication bias. The study by Himelhoch et al.[26] was an outlier in that it had large effect sizes and a very small sample size.

Conflict of Interest

Sources of funding and support were acknowledged in 13/14 studies. The exception was the study by Himelhoch et al. [26]

Discussion

Of the 14 studies included for review, 13 reported statistically significant reductions in symptoms of depression and anxiety following an evidence-based treatment delivered by telephone. These findings replicate and extend the conclusions of previous reviews in this area[5,6,16] and suggest that telephone-administered psychotherapy may be effective in reducing symptoms of depression and anxiety for some client groups. The use of evidence-based treatments for depression or anxiety is particularly important in this early stage of outcome research into telephone-delivered interventions as it has already been established that these treatments are effective when delivered face-to-face.

Overall, there was evidence that telephone interventions (particularly those using CBT) can reduce symptoms of depression within specific client populations (e.g., people with multiple sclerosis or people from rural Latino communities) compared to no-treatment and treatment-as-usual controls. There were fewer studies of anxiety, and two out of four of these focused on symptoms of OCD. The median effect size found for the controlled studies of depression and anxiety was in the medium range[23] and is slightly larger than the mean effect size reported in the review by Mohr et al.[6]. Larger effect sizes were found for the uncontrolled studies, but this is to be expected because uncontrolled studies use a pre-post comparison. As clinical significance was rarely addressed, it was not possible to establish whether the symptom reductions were clinically meaningful. Despite these caveats, this review provides preliminary evidence that evidence-based treatments delivered by telephone can impact on symptoms of depression and anxiety.

Methodological Considerations

Generally, studies of both depression and anxiety were well designed, utilised appropriate outcome measures and considered the presence of potential confounding variables in either the design or analysis. Nine studies used randomised-controlled designs. However, the way recruitment and drop-out rates were reported was variable and a number of studies included in this review had limited follow-up periods or did not follow up participants post-intervention. Treatment guidelines for face-to-face psychological therapy for depression recommend follow-up sessions over a three to six month period[17]; this should be incorporated into future research designs. Additionally, only seven of the 14 studies included a clinician-led interview to establish changes in the severity of psychological symptoms. Clinician interviews such as the Structured Clinical Interview for DSM-IV (SCID[39]) and the Mini International Neuropsychiatric Interview (MINI[40]) are often considered 'gold standard' outcome measures and future research should consider including them as part of the assessment package.

Limitations of the Review

A limitation of this review is the heterogeneous nature of the studies included for analysis, both in terms of study design and client populations, which makes it impossible to draw firm conclusions about the effectiveness of telephone interventions. Furthermore, it was not possible to establish the baseline severity of symptoms due to the variability in outcome measures used in the included studies. This heterogeneity is in part due to the broad inclusion criteria used in this review; however the review aimed to capture as many relevant studies pertaining to telephone interventions for depression and anxiety as possible. The review also examined a delimited range of telephone interventions; in recent years there have been rapid advances in the provision of mental health interventions through smart phone apps and mobile phone technology[41,42], which were not considered in this review.

Clinical Implications

The findings of this review indicate that, for some client groups, telephone-delivered psychological therapy can reduce symptoms of depression and anxiety. More specifically, these preliminary findings suggest that telephone interventions may be effective in decreasing the symptoms of depression for people with certain long-term health conditions (e.g., multiple sclerosis and Parkinson's disease) and in reducing symptoms of OCD. The majority of studies included in this review were conducted in North America and tended to focus on specific groups of people, many of whom had long-term health conditions. This may in part be due to differences in health care delivery in different countries, for example telephone-delivered therapy may be used in the USA to enable access to psychological therapies to populations who have traditionally been hard to reach, e.g., because of health conditions or living in remote locations. By comparison, in the UK, the telephone is more routinely used as a low-intensity intervention. Further research is needed to explore the differences in this area.

Future Research

There was a noticeable lack of controlled studies that directly compared a telephone intervention with a similar intervention delivered face-to-face, and only two of the controlled studies used an active treatment control as a comparison group. A crucial area for future research will be to compare telephone interventions with traditional therapies, examining statistical and clinical significance, acceptability, adherence and cost-effectiveness. Furthermore, it would be worthwhile to compare the effectiveness of telephone interventions with other forms of low-intensity interventions such as online or computerised treatments and guided self-help. This information is necessary to help guide clinicians in their decision-making about how best to deliver effective treatment to different clinical populations. Greater clarity about the content and nature of telephone-delivered therapies is needed in future research in order to delineate the most effective components of the interventions. Qualitative

studies of client experiences of telephone interventions would also add to our understanding of therapy delivered by remote communication technologies.

The majority of the studies included in this review did not state rates of comorbid anxiety or depression. As many as 40-60% of adults with mental health problems report comorbid depression and anxiety[43,44], and it will be important for future research to identify whether a telephone-delivered intervention for depression also impacts on anxiety symptoms (and vice versa). It may also be interesting to examine the effectiveness of transdiganostic delivered telephone therapy.

It still remains to be demonstrated which therapies are more effective when delivered by telephone and whether there are certain populations who are more likely to benefit from telephone interventions. This includes psychiatric diagnosis as well as consideration of symptom severity and duration, and the nature and content of previous treatment. Importantly, it also must be established whether there are any populations for whom such telephone interventions are contraindicated, for example veterans with depression, as suggested by one study in this review.

Conclusions

The findings of this review suggest that evidence-based interventions delivered by telephone show promise in reducing symptoms of depression and anxiety. However, it is important to note that these are preliminary findings and further work is needed before the effectiveness and efficacy of telephone interventions are fully established. In particular, it will be important to identify the types of therapeutic interventions that are best suited to telephone delivery and the populations for which they are most effective.

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Figure 1. *The Process of Study Selection*

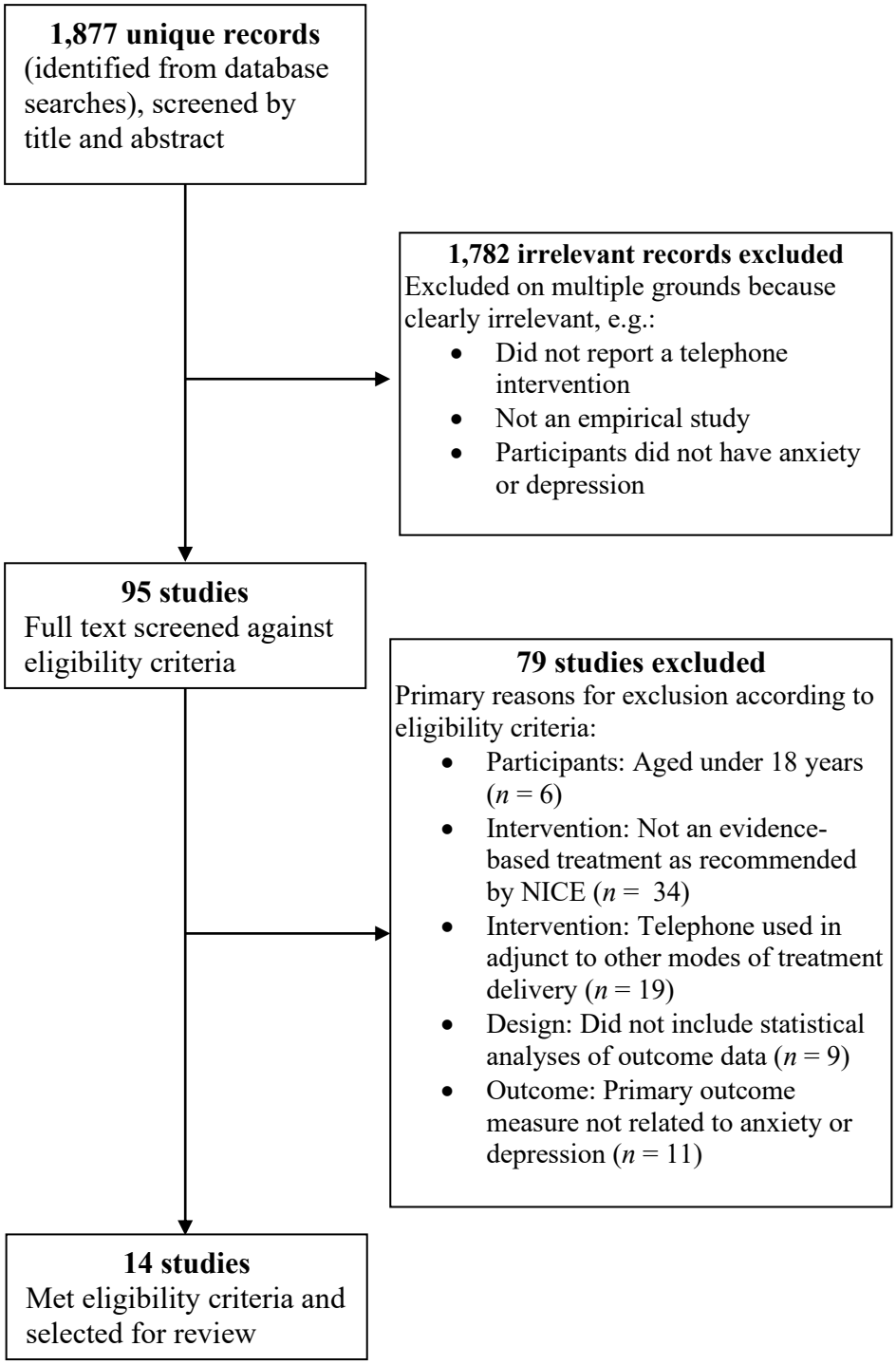

Table 1. *Search Terms Used*

Database	**Search Terms Used**
PsycINFO and Web of Science	Keywords: (anx* OR depr* OR panic OR obsess OR phobia OR fear) AND (telep*) AND (therapy OR treat* OR intervention OR counsel*)
PubMed	MeSH terms: (anxiety OR depression OR panic disorder OR obsessive compulsive disorder OR phobic disorders OR fear) AND (telephone OR telemedicine) AND (cognitive therapy OR counselling)

Note: MeSH = Medical Subject Heading Terms

Table 2. *Characteristics of Reviewed Studies*

Author	Target Problem	Study Design	Sample Characteristics	Telephone Intervention	Control	Outcome Measures	Study Findings	Effect sizes
Depression Studies								
Dobkin et al. (2011)	Depression in Parkinson's disease	Uncontrolled	*N* = 21; 38% male Mean age = 66	10 sessions CBT	None	HAM-D BDI-II	Significant reductions in depression pre-post; gains maintained at follow-up, *p*<.001	HAM-D 1.21 BDI-II 1.13
Dwight-Johnson et al. (2011)	Depression in rural Latino primary care patients	RCT	*N* = 101; 22% male Mean age = 40	8 sessions CBT	Enhanced usual care	PHQ-9 SCL	Significant reductions in depression compared to controls, *p* = .013 (PHQ-9); *p* = .018 (SCL); gains maintained at follow-up	SCL 1.16[c] PHQ-9 .1.98[c]
Himelhoch et al. (2011)	Depression in HIV	Uncontrolled	*N* = 6; 17% male Mean age = 44	11 sessions CBT	None	HAM-D QIDSSR	Significant reductions in depression pre-post, *p*<.006 (HAM-D); *p*<.002 (QIDS)	HAM-D 1.90 QIDS-SR 1.30
Miller & Weissman (2002)[a]	Recurrent Depression	RCT	*N* = 30; 0% male Mean age = 32	12 sessions IPT	No treatment control	HAM-D	Significant reductions in depression compared to controls, *p* < .02	HAM-D .46[c]
Mohr et al. (2000)[a]	Depression in MS	RCT	*N* = 32; 38% male Mean age = 43	8 sessions CBT	Usual care	POMS-DD	Significant reductions in depression compared to controls, *p* = .003	POMS-DD .58[c]
Mohr et al. (2005)[a]	Depression in MS	RCT	*N* = 127; 24% male Mean age = 49	16 sessions CBT	T-SEFT	HAM-D BDI-II	Significant reduction in depression, *p's*< .01. Greater reduction in CBT group compared to control, *p* = .02. Gains maintained at 12m follow-up, but differences between groups ns	Information not available
Mohr et al. (2006)[a]	Depression in veterans	Uncontrolled	*N* = 8; 100% male Mean age = 57	8 sessions CBT	None	BDI-II HAM-D	Significant reductions in depression, pre-post, *p* = .007 (BDI-II), *p* = .02 (HAM-D)	Information not available
Mohr et al. (2011)	Depression in veterans	RCT	*N* = 85; 91% male Mean age = 56	16 sessions CBT	TAU	HAM-D PHQ-9	No significant time x	HAMS-D .37

							treatment effects, *p*'s > .20	PHQ-9 .25
Ransom et al. (2008)	Depression in HIV	RCT	*N* = 79; 84% male Mean age = 44	6 sessions IPT	Usual care	BDI-II	Significant reduction in depression compared with controls, *p*< .05	BDI-II .61[c]
Tutty et al. (2010)	Depression	Quasi-experimental (benchmark comparison)	*N* = 30; 34% male Mean age = 33	10 sessions CBT	Benchmark comparison group	SCL	Significant reduction in depression at 6m, *p*< .001. Similar pattern of change between study participants and benchmarking comparison group.	Information not available
Anxiety Studies								
Lovell et al. (2006)	OCD	RCT	*N* = 72; 44% male Mean age = 33	10 sessions ERP	ERP delivered face-to-face	YBOCS BDI-II	Outcome of telephone ERP equivalent to face-to-face therapy	Information not available
Olthuis et al. (2014)	Anxiety sensitivity	RCT	*N* = 80; 21% male Mean age = 36	8 sessions CBT	Waitlist control	SCID ASI PAQ PSWQ MPSS LSAS	Telephone CBT significantly reduced anxiety sensitivity and symptoms of panic, social phobia and PTSD compared to a wait-list control	LSAS .34 MPSS .39 PAQ .74
Swinson et al. (1995)[b]	Panic disorder with agoraphobia	RCT	*N* = 46; 11% male Mean age = 41	8 sessions BT	Waitlist control	FQ STAI-T BDI-II	Significant reductions in anxiety pre-post compared to controls, *p* < .001. Gains maintained at follow-up	FQ 1.02[c] STAI-T 1.07[c] BDI-II .63[c]
Taylor et al. (2003)[b]	OCD	Delayed treatment control group (non-randomised)	*N* = 33; 24% male Mean age = 38	12 sessions CBT and ERP	Delayed treatment control	YBOCS BDI-II	Significant reductions in OCD compared to controls. Gains maintained at follow-up	Y-BOCS 1.07

Note. N refers to total sample size.

[a] Study included in Mohr et al.[6] review; [b] Study included in Leach & Christensen[5] review; [c] Effect sizes not reported in paper: calculated by present authors.

ADM = Anti-Depressant Medication; ASI = Anxiety Sensitivity Index; BAI = Beck Anxiety Inventory; BDI-II = Beck Depression Inventory-II; BT = Behaviour Therapy; CBT = Cognitive Behavioural Therapy; ERP = Exposure and Response Prevention; FQ = Fear Questionnaire; HAM-D = Hamilton Depression Rating Scale; IPT = Interpersonal Psychotherapy; LSAS = Liebowitz Social Anxiety Scale; MDD = Major Depressive Disorder; MPSS = Modified PTSD Symptom Scale; MS = Multiple Sclerosis; PAQ = Panic Attack Questionnaire; PHQ-9 = Patient Health Questionnaire-9; POMS-DD = Profile of Mood States Depression-Dejection Scale; PSWQ = Penn State Worry Questionnaire; QIDS-SR = Quick Inventory of Depressive Symptomatology; SCID = Structured Clinical Interview for DSM-IV; SCL = Hopkins Symptom Checklist; STAI-T = State-Trait Anxiety Inventory – Trait Version; TAU = Treatment as Usual; T-SEFT = Telephone Administered Supportive Emotion Focused Therapy; Y-BOCS = Yale Brown Obsessive Compulsive Scale – Self Report Version.

Table 3. *Quality Assessment of Reviewed Studies (using EPHPP Tool)*

Study	Selection Bias	Study Design	Confounders	Blinding	Data Collection Methods	Withdrawals and Drop-Outs
Depression studies						
Dobkin et al. (2011)	Weak	Weak	n/a	n/a	Strong	Strong
Dwight-Johnson et al. (2011)	Moderate	Strong	Strong	Weak	Strong	Moderate
Himelhoch et al. (2011)	Moderate	Weak	n/a	n/a	Strong	Strong
Miller & Weissman (2002)	Weak	Strong	Strong	Moderate	Strong	Strong
Mohr et al. (2000)	Strong	Strong	Strong	Weak	Strong	Strong
Mohr et al. (2005)	Moderate	Strong	Strong	Moderate	Strong	Strong
Mohr et al. (2006)	Moderate	Weak	n/a	n/a	Strong	Strong
Mohr et al. (2011)	Moderate	Strong	Strong	Moderate	Strong	Strong
Ransom et al. (2008)	Weak	Strong	Strong	Weak	Strong	Strong
Tutty et al. (2010)	Moderate	Moderate	Strong	n/a	Strong	Strong
Anxiety studies						
Lovell et al. (2006)	Strong	Strong	Strong	Moderate	Strong	Strong
Olthuis et al. (2014)	Moderate	Strong	Strong	Moderate	Strong	Moderate
Swinson et al. (1995)	Weak	Strong	Strong	Weak	Strong	Strong
Taylor et al. (2003)	Weak	Strong	Strong	Weak	Strong	Strong