ANNALS OF CLINICAL PSYCHIATRY 2011;23(1):11-16

RESEARCH ARTICLE

Telephone-administered cognitive-behavioral therapy for clients with depressive symptoms in an employee assistance program: A pilot study

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BACKGROUND: To assess the clinical and work productivity effects of a brief intervention using telephone-administered cognitive-behavioral therapy (CBT) for clients with depressive symptoms attending an employee assistance program (EAP).

METHODS: Self-referred clients attending the PPC Canada EAP with clinically relevant depressive symptoms at initial assessment were offered an 8-session telephone-administered CBT program. Outcomes before and after intervention were assessed with the 9-item Personal Health Questionnaire (PHQ-9), Global Assessment of Functioning (GAF), and clinician ratings of work absence and performance impairment.

RESULTS: Fifty clients were referred to the pilot program; 39 participated and 31 completed the telephone CBT program. Among program participants, there was significant improvement in PHQ-9 and GAF scores. There was also a significant reduction in performance impairment but not work absence. Anecdotal reports indicated high satisfaction ratings among participants.

CONCLUSIONS: The results of this pilot study, although limited by the absence of a comparison or control group, suggest that a brief telephone-administered CBT program can improve depressive symptomatology, work productivity, and general function in depressed clients attending an EAP. Further controlled studies are needed to confirm these preliminary findings.

KEYWORDS: depression, psychotherapy, occupation, employee, telephone, productivity

INTRODUCTION

At any given time, 4% of the general population is struggling with a major depressive disorder (MDD). Another 6% is experiencing impaired functioning due to depressive symptoms that are severe enough to impair healthy functioning but which are not classified as MDD.[1] The World Health Organization's (WHO) "Global Burden of Disease" study found that depression is the fourth leading cause of disease burden among all medical conditions.[2] Depression also is the single most burdensome illness in the middle years of life, a time of maximal occupational potential.[2] In fact, no other condition or disease accounted for even half of the burden caused by depression.[3]

Due to the nature of depressive symptoms (eg, reduced interest and motivation, impaired concentration, fatigue, anxiety, etc.), depression leads to significant occupational impairment, particularly for white collar workers whose jobs pose greater cognitive and psychosocial demands. Depression often is described as an invisible disorder because awareness of an employee's depressed state depends on self-report or inference from behavior rather than physical findings. The hidden nature of depression contributes to misunderstanding and stigma, thus preventing or delaying appropriate identification and management.

Often it is not until workers lose their ability to perform altogether that their difficulties come to the attention of their employers. A Canadian study found that depressed employees averaged 32 sick days each year,[4] while in the United States, employees with MDD had almost 6 times the number of hours of lost productive time as peers without depression.[5] Another study of several major corporations in Ontario found that 19% of all short-term disability claims were attributed to depression, while 3% of all employees had at least 1 depression-related short-term disability claim.[6] Long-term disability costs related to depression increased 8% in Canada and short-term absence costs more than doubled from 1987 to 2000, accounting for 73% and 79% of disability claims, respectively.[7] The total economic cost of depression-related disability in 1998 was estimated to be more than CAN $6 billion.[8]

Given the effect of depression on the workplace, the increasing emphasis on early intervention and prevention is unsurprising. Employee and Family Assistance Programs (EAPs) provide confidential, short-term counselling services for employees with personal problems that affect their work performance. These services are usually purchased or funded by employers and provided either by an external organization or by a department within a company. The purpose of an EAP is to offer help resolving problems that affect work, whether or not these problems originated in the workplace. Although most EAPs offer a wide range of services for job stress, harassment, and balancing work and family, they also offer assistance for issues involving marital and family discord, substance abuse, family violence, and others.

By facilitating initial contact with health professionals, EAPs often are the "first line of defense" for people experiencing MDD. A chart review study found that 27% of clients presenting to an EAP were identified by EAP staff as having a problem with depression.[8] Of those identified as depressed, 20% were off work at intake. An examination of outcomes revealed that depressed workers improved substantially on measures of work absence and work productivity after an EAP intervention. However, clients identified as depressed at intake continued to have poorer levels of functioning than those who were not depressed, even after the intervention. This suggests that depressed clients attending EAPs may need more intensive treatment than that which is usually provided.

Cognitive-behavioral therapy (CBT) and interpersonal therapy (IPT) are among the manualized psychological treatments that are empirically supported as effective for MDD.[10] Unfortunately, geographical distance from counsellors, travel time, the need to take time off work, and the stigma of visiting mental health providers are some of the factors that limit the accessibility of these evidence-based treatments. Counselling or psychotherapy administered over the telephone is a newer approach that may overcome some of these barriers.[11] Telephone-administered CBT has reduced depression scores with a high degree of client satisfaction in both short-term studies[12] and in long-term follow-up.[13]

Traditionally, most EAPs provide eclectic or nonspecific, problem-focused individual, in-person counselling. This pilot project sought to evaluate the introduction of a telephone-administered CBT program as a novel treatment for depressed clients seeking help from an EAP.

METHODS

Setting

PPC Canada is an external EAP currently serving more

TABLE 1
Summary of telephone-administered cognitive-behavioral therapy sessions (Each telephone session is approximately 30 minutes long)

Session 1	The client is welcomed and presented with an overview of the program, which is framed as another tool for managing stress and depression. A thorough intake assessment is completed.
Session 2	The week since the first session and the behavioral experiment are reviewed and challenges are identified. A medication evaluation (if used) is conducted and psychoeducation is facilitated.
Session 3	The past week is reviewed and challenges are identified. The client is assisted in identification of specific roadblocks and their associations. Medication evaluation (if used) is conducted.
Session 4	Behavioral experiments are reviewed with an emphasis on identifying behaviors that led to healthy lifestyle changes and improved mood. The client completes a 4-week activity calendar. Medication evaluation (if used) is conducted.
Session 5	The past week and activity calendar are reviewed. Psychoeducation focuses on cognitive processes: how cognition changes when a person is under stress or in a depressed state, and ways to manage negative thoughts. The domains that trigger dysfunctional thinking are reviewed. Medication evaluation (if used) is conducted.
Session 6	The past week and thought balancing experiment are reviewed. Psychoeducation focuses on assumptions and negative thoughts. The question of how assumptions support thoughts is discussed. Key negative assumptions and major triggers are reviewed. Medication evaluation (if used) is conducted.
Session 7	Thought balancing and the homework experiment are reviewed. Both client and program strategies for managing negative thoughts are discussed.
Session 8	Behavioral and cognitive experiments are reviewed. Accomplishments are summarized and effective strategies are selected. A self-care plan is developed and barriers to prevention are reviewed.

than 350 organizations in Canada. Services are provided by a multidisciplinary counselling team of registered psychologists, registered social workers, registered clinical counsellors (RCC), and addictions specialists. For this study, the purchaser was the Interior Health Authority (IHA), one of 5 geographically based health agencies in the province of British Columbia responsible for the health care needs of 717 urban and rural communities in the Southern Interior of British Columbia. The IHA employs >18,000 staff in 45 communities covering a large geographic area of 216,000 km^2. The workforce is predominantly female and 40% of employees are age >50.

Participants

Participants in this study were employees of the IHA from the Kelowna region who were self-referred to the PPC Canada EAP. Eligible clients had clinically relevant depressive symptoms as defined by a score of ≥5 on the Personal Health Questionnaire 9-Item Depression Module (PHQ-9) completed at initial assessment. The PHQ-9 is a well-validated and brief self-report depression rating scale designed for use in primary care settings.[14] The PHQ-9 score ranges from 0 to 27, with depression severity categorized as minimal (0 to 4 points), mild (5 to 9), moderate (10 to 14), moderately severe (15 to 19), and severe (20 to 27). Clients were excluded from participating if they had any of: 1) suicide risk assessed as moderate or higher; 2) acute, significant addiction problems; 3) indication of psychotic symptoms, paranoid thinking, or other symptoms indicating a need for urgent psychiatric assessment; or 4) brain injury resulting in memory or comprehension problems.

Procedure

Clients were initially assessed by a RCC in a face-to-face meeting. After the initial standardized assessment, which included the PHQ-9, eligible clients were offered 8 sessions of a telephone-administered CBT program that has been used in previous studies.[12] A summary of each session is provided in **TABLE 1**. Telephone sessions were scheduled at the client's convenience and each session lasted approximately 30 minutes. A Master's level counsellor with extensive CBT experience conducted all the telephone sessions. Training in the manualized program was provided by one of the program's developers, Dr. Evette Ludman. The counsellor also completed the Global Assessment of Functioning (GAF)[15] and an assessment of work impact with 2 items: performance impairment and work absence. Performance impairment was scored as 0 to 3 according to ratings of none, mild (not noted by the work environment), moderate (noted by the work environment), and severe (remedial steps

TABLE 2
Outcome measures at baseline and after intervention

	Baseline			Post-intervention			Paired *t* test		
Measure	**N**	**Mean**	**SD**	**N**	**Mean**	**SD**	***t***	***df***	***P***
PHQ-9	31	13.11	4.87	28	4.57	3.54	12.35	27	.0001
GAF	31	64.84	2.00	31	70.49	3.61	–14.83	30	.0001
Work absence	31	0.71	1.10	30	0.47	1.07	1.86	29	.073
Performance impairment	31	1.23	1.12	30	0.50	1.04	4.49	29	.0002

GAF: Global Assessment of Functioning; PHQ-9: Personal Health Questionnaire 9-item depression module; SD: standard deviation.

required). Work absence was also scored as 0 to 3 according to ratings of none, mild (few hours), moderate (1 to 5 days), and severe (disability leave).

Outcomes included the PHQ-9 score, GAF, and the 2 work impact items. Data from the baseline and post-intervention assessments were anonymized and statistically analyzed using paired *t* tests for parametric data and the McNemar test with continuity correction for non-parametric data, conducted with SPSS statistical software, version 11.0.[15] All data are presented as mean scores ± 1 standard deviation (SD). The use of anonymized clinical information from this project was approved by the Behavioural Research Ethics Board at the University of British Columbia.

RESULTS

Of the 50 participants initially assessed, 1 was referred out because of a neurologic problem, 1 moved before starting the program, 5 were too busy to participate, and 4 had initial PHQ-9 scores <5, leaving 39 participants in the telephone-administered CBT program. The 39 participants included 31 women and 8 men with average age 45.1 ± 8.9 years. The mean PHQ-9 score was 13.26 ± 4.80 and the mean GAF score was 64.72 ± 2.01. Fifteen of the 39 (38%) clients were rated as having performance impairment of moderate or severe, while 9 of 39 (23%) were on disability leave at the time of assessment.

Of these 39 participants, 8 (7 women, 1 man) withdrew early before completing the telephone-administered CBT program for a number of reasons, including: mood improved and they were too busy to continue (n = 3), referred out to a psychiatrist (n = 2), and moved or lost to follow-up (n = 3). The average number of telephone sessions for the 8 clients who withdrew early was 2.3 ± 0.9, with a median of 2. The average number of telephone sessions for the 31 completers was 7.1 ± 1.9, with a median of 7.

The statistical analysis for each outcome measure was based on the number of participants that had both baseline and post-intervention data for that measure (**TABLE 2**). There was significant improvement on the PHQ-9 from a mean score of 13.11 ± 4.87 at baseline to 4.57 ± 3.54 after the intervention ($t = 12.35$; $df = 27$; $P < .0001$) in the subset of 28 participants with follow-up PHQ-9 data. Significant improvement was also found with the GAF score and the performance impairment measure, but not with work absence (**TABLE 2**).

TABLE 3 shows the distribution of severity based on PHQ-9 scores at baseline and after intervention. At baseline, 21 of 28 (75%) participants were rated as moderately to severely depressed; after intervention, only 3 of 28 (11%) had depression rated as moderate or moderately severe (McNemar $\chi^2 = 16.1$; $P < .0001$). Twenty-seven of 28 (96%) participants improved in PHQ-9 severity category after the telephone-administered CBT program and 15 of 28 (54%) had scores within the minimal severity category.

Systematic evaluation of client satisfaction was not conducted, but anecdotal reports from participants included comments such as "[t]his program has been a miracle for me," "[it was] empowering", "[I am] ready to grab life again." Many participants commented on the advantage of not having to travel long distances at inconvenient times to attend therapy sessions.

DISCUSSION

The results of this pilot study indicate that participants completing the telephone-administered CBT program

TABLE 3
Distribution of depression severity, based on PHQ-9 scores, at baseline and post-intervention (N = 28)

		Post-intervention severity (based on PHQ-9)				
		Minimal (0 to 4)	Mild (5 to 9)	Moderate (10 to 14)	Moderately severe (15 to 19)	Total
Baseline severity (based on PHQ-9)	**Mild (5 to 9)**	6	1	0	0	7
	Moderate (10 to 14)	7	6	0	0	13
	Moderately severe (15 to 19)	1	2	1	0	4
	Severe (20 to 27)	1	1	1	1	4
	Total	15	10	2	1	28

PHQ-9: Personal Health Questionnaire 9-item depression module.

experienced significant improvement in depressive symptoms and global function. While formal diagnosis was not part of the initial assessment, 75% of the participants had baseline PHQ-9 scores ≥10, indicating depression of at least moderate severity. Using the PHQ-9 score ≥10 as a criterion has been shown to have a sensitivity of 88% and specificity of 88% for a DSM-IV diagnosis of MDD.[14] It is also important to note that the clinical effectiveness of the intervention appeared to be independent of the severity of depression. Participants rated as moderately severe and severe at baseline also improved and 54% of participants had PHQ-9 scores within the minimal (normal) range after intervention. In addition to clinical improvement, there was also significant improvement in work performance impairment after telephone-administered CBT, but not in work absence. This finding may be due to the fact that, at baseline, 25 (83%) of the 30 clients with completion data reported minimal or no work absence, so there was little room for improvement. Anecdotal reports from participants indicated a high degree of satisfaction with the telephone-administered CBT.

Our results are consistent with those from randomized controlled trials using this telephone-administered CBT program in primary care physician settings. Simon and colleagues[12] found that compared with usual care, telephone-administered CBT led to lower mean scores on the Hopkins Symptom Checklist and higher rates of reporting "much improved" and "very satisfied" with depression treatment. These differences were maintained at the 18-month follow-up.[13]

This pilot study has many limitations that temper the conclusions and generalizability of our results. There was no control or comparison group, so we cannot exclude the possibility of placebo response, natural remission, or effects of other treatments the clients may have used. We examined outcomes only for participants who had post-intervention data, and the assessments of work performance impairment and absence were each based on a single question. One experienced counsellor conducted all the telephone sessions and there were no checks on fidelity of the manualized CBT program. There were also several participants (8 of 39, or 21%) who did not complete the program, although 2 clients were referred to a psychiatrist and 3 others moved away.

Despite the limitations, these preliminary data suggest that telephone-administered CBT may be an effective intervention for EAP clients presenting with depressive symptoms. The use of such programs by EAP providers may be particularly important to expand the capacity for CBT within the mental health system. Given the many advantages of telephone-administered CBT, especially for those clients who have distance and logistic barriers to access in-person CBT, further controlled studies in EAP and other settings are warranted. ■

ACKNOWLEDGEMENT: Mr. Lutz was partially funded by an Accelerate BC Graduate Research Internship grant from the Mathematics of Information Technology and Complex Systems.

DISCLOSURES: Ms. Cayley and Ms. Bowen Walker are former employees of PPC Canada. Dr. Lam is on speaker/advisory boards for or has received research funds from AstraZeneca, Biovail Corporation, BrainCells Inc., Bristol-Myers Squibb, Canadian Institutes of Health Research, Canadian Network for Mood and Anxiety Treatments, Canadian Psychiatric Research Foundation, Common Drug Review, Eli Lilly and Company, H. Lundbeck, Janssen, L.P., Litebook Company Ltd., A/S,

Lundbeck Institute, Mathematics of Informatics Technology and Complex Systems, Merck, Michael Smith Foundation for Health Research, Pfizer Inc, Servier, St. Jude Medical, Inc., Takeda, UBC Institute of Mental Health/Coast Capital Savings. Mr. Lutz and Dr. Preece report no financial relationship with any company whose products are mentioned in this article or with manufacturers of competing products.

REFERENCES

1. Waraich P, Goldner EM, Somers JM, et al. Prevalence and incidence studies of mood disorders: a systematic review of the literature. Can J Psychiatry. 2004;49:124-138.
2. Ustün TB, Ayuso-Mateos JL, Chatterji S, et al. Global burden of depressive disorders in the year 2000. Br J Psychiatry. 2004;184:386-392.
3. Simon GE. Social and economic burden of mood disorders. Biol Psychiatry. 2003;54:208-215.
4. Gilmour H, Patten SB. Depression and work impairment. Health Rep. 2007;18:9-22.
5. Stewart WF, Ricci JA, Chee E, et al. Cost of lost productive work time among US workers with depression. JAMA. 2003;289:3135-3144.
6. Dewa CS, Goering P, Lin E, et al. Depression-related short-term disability in an employed population. J Occup Environ Med. 2002;44:628-633.
7. Watson Wyatt. Staying@Work Survey: effective presence at work 2007 survey report: Canada. Toronto, Canada: Watson Wyatt Worldwide; 2000.
8. Stephens T, Joubert N. The economic burden of mental health problems in Canada. Chronic Dis Can. 2001;22:18-23.
9. Preece M, Cayley PM, Scheuchl U, et al. The relevance of an Employee Assistance Program to the treatment of workplace depression. J Workplace Behavioural Health. 2006;21:67-77.
10. Bortolotti B, Menchetti M, Bellini F, et al. Psychological interventions for major depression in primary care: a meta-analytic review of randomized controlled trials. Gen Hosp Psychiatry. 2008;30:293-302.
11. Bee PE, Bower P, Lovell K, et al. Psychotherapy mediated by remote communication technologies: a meta-analytic review. BMC Psychiatry. 2008;8:60.
12. Simon GE, Ludman EJ, Tutty S, et al. Telephone psychotherapy and telephone care management for primary care patients starting antidepressant treatment: a randomized controlled trial. JAMA. 2004;292:935-942.
13. Ludman EJ, Simon GE, Tutty S, et al. A randomized trial of telephone psychotherapy and pharmacotherapy for depression: continuation and durability of effects. J Consult Clin Psychol. 2007;75:257-266.
14. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. J Gen Intern Med. 2001;16:606-613.
15. Jones SH, Thornicroft G, Coffey M, et al. A brief mental health outcome scale-reliability and validity of the Global Assessment of Functioning (GAF). Br J Psychiatry. 1995;166:654-659. 15. SPSS Inc. SPSS for Windows, v.11.0. Chicago, SPSS Inc., 2004.