Self-Directed Cognitive Behavioural Therapy for Adults with Diagnosis of Depression: Systematic Review of Clinical Effectiveness, Cost-Effectiveness, and Guidelines

[Adapted from Boudreau R, Moulton K, Cunningham J. Self-directed cognitive behavioural therapy for adults with diagnosis of depression: systematic review of clinical effectiveness, cost-effectiveness, and guidelines. (Health Technology Inquiry Service). Ottawa: Canadian Agency for Drugs and Technologies in Health; 2010.]

Introduction

An individual with clinically diagnosed major depression or major depressive disorder has symptoms such as feelings of hopelessness, discouragement, and being “down in the dumps.” The individual may be irritable, experience aches and pains, and have feelings of sadness.[1] Major depression can be diagnosed when an individual who experiences one or more major depressive episodes does not have a history of manic episodes or a mood disorder as a result of another medical condition.[1] An individual can experience one episode or recurrent episodes, and each episode can be mild, moderate, severe without psychotic features, or severe with psychotic features.[1]

Approximately 5.0% of Canadians report having had a major depressive episode within the past 12 months,[2] and approximately 8.0% of Canadians will experience major depression in their lifetime.[3] Up to 15.0% of individuals with clinically diagnosed severe major depression will commit suicide, and people with diagnosed major depressive disorder have more physical illnesses and decreased physical and social functioning.[1] Major depression has a large impact on the economy through health care costs and loss of work productivity.[3]

The treatment options for depression include antidepressants and psychotherapy. One form of psychotherapy is self-directed cognitive behavioural therapy (CBT), which has the same treatment goals as traditional CBT. Self-directed CBT requires less involvement of and assistance from health care professionals. It can occur through the reading of self-help books (bibliotherapy) or through the use of computerized CBT (CCBT). It can be argued that patients have easier and more convenient access to self-directed CBT compared with traditional CBT.

Because of the potential for fewer resource demands as well as increased accessibility compared with other types of psychotherapy, there is an interest in evaluating the clinical and cost-effectiveness of self-directed CBT for individuals with a diagnosis of depression.

Objective

The objective of the report is to answer the following research questions:

- What is the clinical effectiveness of using self-directed cognitive behavioural therapy in the treatment of adults with a diagnosis of depression?
- What is the cost-effectiveness of using self-directed cognitive behavioural therapy in the treatment of adults with a diagnosis of depression?
- What are the evidence-based guidelines for using self-directed cognitive behavioural therapy in the treatment of adults with a diagnosis of depression?

Methods

MEDLINE, MEDLINE In-Process & Other Non-Indexed Citations, Embase, and PsychINFO were searched through the Ovid interface. Parallel searches were run in PubMed and The Cochrane Library (Issue 4, 2009). No filters were applied to limit the retrieval by study type. The search was restricted to English language clinical articles published between 2004 and November 2009. Regular alerts were current to January 5, 2010. Grey literature was also searched. Two authors selected articles for inclusion. Any disagreements were resolved through discussion until consensus was achieved.

Results

Two randomized controlled trials (RCTs), one economic study, and three guidelines were summarized.

Clinical

One RCT[4] examined the clinical effectiveness of a self-guided CCBT program and randomly selected people from the general public for inclusion in the study. Adults in which Axis I depression was confirmed were randomized to be in one of three groups: a group treated with the CCBT program, a treatment-as-usual control group, or a group receiving treatment as usual plus the CCBT program. Treatment as usual consisted of four to five visits with a general practitioner every second week and a prescription for antidepressant medication, if necessary. At six months, participant adherence rates were 49% in the CCBT group, 34% in the treatment-as-usual group, and 13% in the CCBT plus treatment-as-usual group. The primary outcome was severity of depression, which was measured using the Beck Depression Inventory-II (BDI-II), with higher scores indicating more severe depression. In each of the three groups, there were statistically significant improvements in BDI-II scores over time. There were no statistically significant differences between the three groups for BDI-II scores, quality of life, dysfunctional beliefs, and general psychological distress. The only statistically significant difference in clinical rating scales occurred at three months in the Work and Social Adjustment Scale. Those using CCBT plus treatment as usual experienced greater improvement than those using CCBT alone or treatment as usual alone. The authors cautioned that interpretation of this test result was limited because

multiple statistical tests were performed, thereby increasing the chance of erroneous statistically significant findings. Possible explanations provided by the authors for the lack of between-group differences included the thoughts that the actual CCBT program was less effective than other methods of self-guided CCBT, that the lack of clinical support affected the adherence rates (which the authors considered to be low) and effectiveness for individuals receiving CCBT, and that the severity of depression may have been uncharacteristically high for CCBT treatment. The authors noted that no group performed better than the 30% to 40% of participants who were expected to experience clinical improvement from receiving orally administered placebo, as documented in previous research. In terms of secondary measures, individuals in the CCBT group were statistically significantly less likely to access general practitioner services than individuals in the other two groups, and individuals in the treatment-as-usual group accessed more mental health care specialist services than individuals in the other groups. The authors stated that treatment adherence was low in all three groups, and there were no differences in the use of antidepressants between the three groups.

Another RCT[5] looked at the effectiveness of self-directed CBT bibliotherapy, which is standardized treatment that is presented in books, in adults with mild-to-moderate depression. The goal is to help patients identify issues about their thoughts and learn how to reframe their thinking by reading and doing exercises from the book with little to no therapist supervision. During the eight-week CBT program, follow-up occurred at baseline, end of treatment, and four weeks after treatment ended. Patients were randomized to receive no therapy, bibliotherapy plus five minutes per week of telephone contact with a therapist (minimal contact group), or bibliotherapy plus 30 minutes per week of telephone contact with a therapist (assisted contact group). During the weekly follow-up, the groups with contact were assessed using the Depression Anxiety Stress Scales – Depression Subscale. Patients in the minimal contact and assisted contact groups obtained statistically significant improvements at the end of the treatment compared with the control group according to the BDI-II, Kessler Psychological Distress Scale-10, and Depression Anxiety Stress Scales. The minimal contact and assisted contact groups performed better in their groups over time on the Depression Anxiety Stress Scales and BDI-II. The benefits were maintained four weeks after the end of treatment. There were no differences between the minimal contact and assisted self-help groups at the end of the study or at follow-up. Of the participants who completed the study, clinically significant improvements were seen in 44% of the minimal contact group, 56% of the assisted contact group, and 18% of the control group. A clinically significant improvement was based on a BDI-II score of less than 9 (representing a score within one standard deviation of a non-distressed sample) and a reliable change index (using 0.48 as a reliability coefficient).

Economic

The economic study[6] looked at the cost-effectiveness of guided CBT, self-guided CBT using books (bibliotherapy), and drug interventions. The cost-effectiveness of therapy for depression was modelled from an Australian health care perspective as the cost per disability-adjusted life-year. The authors stated that the indication was major depression. The cost-effectiveness of bibliotherapy was based on health gains during acute episodes of depression and included the costs of buying the book, one long visit (20 minutes to 40 minutes), and two short visits (less than 20 minutes) with a general physician. Bibliotherapy was found to be cost-effective at A$10,000 per disability-adjusted life-year. Group CBT and individual CBT that were provided by a psychologist on public salary were considered to be cost-effective. CBT cost-effectiveness was calculated for maintenance treatment periods and for treatment during an acute episode. The calculated adherence rate was between 50% and 81% for CBT. It is unclear whether this included bibliotherapy. The pooled effect size that was used for bibliotherapy was 0.98 (95% CI 0.62 to 1.35), which may be considered to be a large effect.[7] For guided CBT, the pooled effect size was 0.77 (95% CI 0.44 to 1.10), which may be considered to be a medium effect.[7] The effect sizes were based on meta-analyses that were conducted by the authors to compare bibliotherapy with non–evidence-based treatment. The cost of a long general physician visit was estimated to be A$39.51 for government and A$1.87 for the patient. A shorter visit was estimated to cost the government A$21.88 and cost the patient A$2.21. The authors concluded that there are cost-effective options for treating depression, the cheapest option being bibliotherapy. Another cost-effective option was CBT delivered by psychologists on a public salary. Generalizability was limited to similar Australian populations and to similar government funding for depression therapies. The authors stated that they likely underestimated the effectiveness of bibliotherapy by limiting the treatment effect to the acute period, and bibliotherapy likely has benefits beyond the acute period (although there is no evidence of a sustained benefit).

Guidelines

Three guidelines were included in this review,[8-10] and all three recommended self-directed CBT for the treatment of mild-to-moderate depression. Two guidelines[8,9] recommended the "Beating the Blues" CCBT program as being clinically effective and cost-effective.

Limitations

Non-English, unpublished, and non–peer-reviewed articles were not searched for this review, and the scope of the report is focused on the clinical benefit and costs of self-directed CBT. Factors such as barriers to accessing the therapy,[11] adherence to treatment,[11] and individual factors such as education[12] were not reviewed.

The two RCTs did not state whether they concealed random allocation or whether any part of the design was blinded. The authors of one RCT[4] reported less than a fifth of individuals in the CCBT group finished all therapy sessions, and the second RCT[5] stated attrition rates of 24%, 30%, and 47% in the assisted contact group, minimal contact group, and control group respectively. One RCT[5] studied the impact of CCBT on access to general practitioners and mental health care specialists. Other outcome measures such as self-harm and suicide were not measured. One trial included an eight-week treatment period with a four-week follow-up,[5] and the second included an eight-week treatment period with a six-month follow-up. Whether the effectiveness of self-directed CBT is sustainable in the longer-term is unclear.

It was difficult to determine whether the recommendations from the evidence-based guidelines were related to self-directed CBT. The generalizability of the findings may be limited to the specific CCBT programs that were evaluated and to different health care settings (for example, Australia).

The literature search revealed that most RCTs, systematic reviews, and health technology assessments recruited volunteers from the public. Decisions for inclusion were typically made based on the scores of self-reported clinical rating scales, such as the BDI, with no clinical input.

Conclusions

Overall, the evidence supported the clinical effectiveness and cost-effectiveness of self-directed CBT, as measured using clinical rating scales. One study provided evidence that CCBT may result in fewer visits to a general practitioner and mental health care specialist. The percentage of individuals completing the CCBT, however, was interpreted by the authors as low. In addition, self-directed CBT was generally recommended as a therapy option for individuals with mild-to-moderate depression.

The evidence on the barriers that exist for self-directed CBT was not explored. Factors that may be considered, especially for self-directed CCBT, are staff requirements (for example, administrative staff, supervised junior professional staff, and psychologists or psychiatrists[11]), amount of assistance provided to the patient, computer accessibility, and level of computer literacy.

Limited systematic reviews, RCTs, economic studies, and evidence-based guidelines exist on self-directed CBT in individuals with a diagnosis of depression based on Diagnostic and Statistical Manual of Mental Disorders or International Classification of Disease criteria or clinical input. In addition, the guidelines did not always state whether the recommendations pertained to self-directed CBT (bibliotherapy) or self-directed CCBT. In the literature, self-directed CBT was associated with improved

clinical ratings of depression and with being a cost-effective therapy for individuals who experience mild-to-moderate depression. It is difficult, however, to reliably determine when self-directed CBT would be most effectively implemented as therapy; for example, in cases of severe depression. The conclusions on cost-effectiveness are interpreted with caution, because the economic studies were not Canadian. Thus, the approaches to routine care and other model assumptions may influence the actual cost-effectiveness in Canada. Also unclear is whether one form of self-directed CBT is superior to other forms. Other factors to consider before prescribing a course of treatment for patients who have received a diagnosis of depression include patient preference and family history.[13]

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