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Back to basics: Could behavioural therapy be a good treatment option for youth depression? A critical review

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Title: Back to basics: could behavioural therapy be a good treatment option for youth depression? A critical review.

Running title: Behavioural therapy for youth depression

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Abstract

Background

Recent findings from systematic reviews and primary research studies have shown more modest effects of CBT for youth depression than previously shown, highlighting the need to further enhance the effectiveness of this intervention, or components of this intervention. Therefore, the aim of this review is to summarise the work that has been done to identify the different components of CBT and their varying effectiveness for young people with depression.

Methods

Narrative overview of English language reviews/meta-analyses and primary intervention studies retrieved from searches of computerized databases as well as ancestry searches.

Results

Reviews of intervention studies of adults as well as young people with depression have shown that behavioural approaches are equally as effective as cognitive approaches in reducing depression symptoms. Post-hoc analyses of large studies in youth depression have also shown that behavioural approaches might be more suitable for young people.

Conclusions

Behaviourally based approaches appear promising in treating youth depression; however, further research is required. This research will represent an essential step

towards refining interventions for youth depression, and enabling interventions to be targeted to particular sub-groups, to optimize their effectiveness.

Key Words

Depression, Cognitive Behavioral Therapy, Evidence-Based Practice, Review

Introduction

Depression and its treatment in young people.

Depression in young people affects a critical developmental period, increasing the likelihood of negative long term outcomes such as poor physical health, problems with developing and maintaining good relationships, poor vocational attainment and achievement (1, 2) and increased risks of self harm and suicide (3). Depression accounts for the greatest burden of disease in this age group (4). Adolescence and young adulthood is the peak period for the emergence of new cases of depression (5), which will develop into recurrent depression in adulthood for most people (6). It is therefore critical to provide optimal treatment to this group in order to maximise the chances of recovery and minimise the risk of ongoing depression and its associated negative outcomes (7, 8).

International guidelines are consistent in the recommendation of cognitive behavioural therapy (CBT) or interpersonal therapy (IPT) as first line psychological treatment for moderate to severe depression (e.g. 9, 10-12). CBT is the most frequently studied psychotherapy for depression in young people (13), with over 80% of published trials of therapy investigating CBT (14). Initial evidence suggested it was among the most effective treatments compared with other psychotherapies or waitlist control (15). Recent studies (including intervention trials and meta-analyses) suggest that, while still more effective than a range of comparison conditions (e.g., waitlist, no treatment, treatment as usual, placebo pill, attention placebo, healthy lifestyle class, skills training, non directive supportive counselling, relaxation), its effects are more modest than first believed (14, 16, 17).

Why are effect sizes for CBT smaller than first demonstrated?

Study design and conduct. It has been argued that the effects of CBT are likely to have been overestimated in earlier trials because the trials were not designed and conducted using methods that minimise bias (18). For example, few trials have included blinded assessment of outcomes; many trials have compared CBT to inactive comparison groups such as a wait-list control; and studies have not undertaken intention-to-treat analysis, typically only assessing efficacy in patients who have completed their course of therapy (completer analysis) (18). A recent meta-analysis (19) has described how the variables associated with the methodological rigour of CBT trials have affected the treatment effect sizes, with larger treatment effects for those studies that did not adhere as closely to CONSORT guidelines (20, 21).

Factors associated with young people who have depression. Delivering CBT to young people outside of tightly controlled experimental situations is likely to be related to the observation of smaller effect sizes (22, 23). Several factors contribute to this phenomenon.

First, the majority of trials to date have included participants with subclinical or less severe levels of depression than seen in every day clinical practice. Typically smaller effect sizes are shown in studies limited to young people with severe depression (16).

Second, what is known about depression in young people is that pre-adult (defined as less than 18 years of age) onset depression is associated with greater comorbidity and

poorer functioning compared to adult onset depression (24). The severity and complexity of depression that young people experience makes engagement in CBT potentially difficult. Research has shown that the overwhelming barrier to clinicians implementing treatment protocols with fidelity is severity and complexity of the presentation (25). This has been shown specifically for CBT with young people who are severely depressed who also have a range of other difficulties (26). Therapist experience and competence in implementing a full protocol of CBT with those who have severe depression has been pointed to as a factor that impacts on treatment outcomes for CBT in this population (27).

Third, it is also the case that young people may not have developed the cognitive skills and abilities necessary to engage in cognitively effortful treatments like CBT. Abilities such as abstract reasoning, a sub-set of a broader range of executive functioning skills (including planning, organisation, problem solving), do not reach full maturation until the late teens and early twenties (28). Abstract reasoning is the capacity to think in a flexible manner about situations and scenarios that are not necessarily tangible or immediately present (29). The more developed a young person's abstract reasoning skills are, the better they will be able to successfully grasp the abstract concepts inherent in the cognitive aspects of CBT (i.e., that you have internal thought processes that you can not see or hear aloud, but that occur through internal dialogue in your mind). They will also be better able to understand the idea that thoughts are different from actions, but that thoughts can contribute to actions and feelings. Thus in addition to the age of the young person, their current cognitive developmental level may impact on engagement with therapy, and treatment outcomes if this is not taken into account by

experience and competent therapists or research therapy protocols that allow for such modification (30).

CBT may not be particularly appropriate for young people due to the severity of depression that they experience, the complexity of their presenting issues that young people have in real-world clinical settings, and their cognitive developmental level; or at least there may be a subset of young people with particularly severe depression (given depression is also known to affect cognitive functioning in a range of areas including executive functioning and memory (28, 31)) and at lower levels/stages of cognitive developmental level for whom a full CBT protocol is not appropriate.

Factors associated with maintaining fidelity to the intervention. Not only are there factors associated with young people who have depression that impact on the delivery of CBT, the configuration of youth mental health services, such as those in Australia does not facilitate the effective delivery of CBT. Services that traditionally and most likely offer CBT (specialist, tertiary services) are unable to meet the high demand for treatment meaning that only young people with the most severe and complex presentations of depression can be seen (32). The alternative for most young people is to access primary care and general practice services (33). In these settings there are: 1. Less resources for assertive outreach and follow-up of non-attendance, resulting in young people attending fewer treatment sessions; 2. Shorter episodes of treatment/care given the service delivery and funding model; and, 3. A varied workforce in terms of professional backgrounds and skill. Therapist competence has also been pointed to as a factor influencing the effectiveness of CBT (25, 34, 35). Maintaining fidelity to what

has been described as a dense and complex intervention (e.g. 36, 37) is difficult. For example, while behavioural interventions are critical to CBT, in day-to-day practice these aspects are often neglected, so that there is a failure to offer CBT that is consistent with its origins and in line with the available evidence (38).

Content of the CBT treatment protocols. CBT developed from the merging of behavioural therapy (BT) approaches popular in the 1950's and 1960's with the newly dominant cognitive therapy (CT) approach of the 1970's. The dominant assumption of CT is that negative cognition has a pivotal role in the development and maintenance of depression (36, 39). The techniques employed, both those aimed directly at altering cognitions and those aimed at altering the behaviour of the individual ultimately have the goal of changing cognitions and core beliefs. Core techniques for adolescent depression include: 1. Psychoeducation; 2; Self-monitoring; 3. Pleasant activity scheduling and other behavioural activation techniques; 4. Cognitive restructuring strategies; and 5. Problem solving skills training; 6. Various other techniques e.g. relaxation, social skills training, communication skills (34, 40). However, as clearly articulated by McCarty (34) and Weersing (40), treatment protocols for CBT vary substantially in terms of the approaches and techniques they emphasise (34, 40). For example, one of the key pieces of research that includes CBT as an intervention for youth depression is The Treatment for Adolescent Depression study (TADS) (17). In this study young people were randomised to placebo, CBT, fluoxetine or combined CBT and fluoxetine; results showed CBT alone was not statistically significantly different compared with placebo, fluoxetine or the combination of fluoxetine and CBT. This is in contrast to two other key studies that included CBT and showed much better

results (41, 42). The TADS treatment manual was adapted from the treatment manuals used in these positive studies. One of the manuals included a large number of techniques and was designed for delivery to groups and therefore highly structured and didactic and nature (42); the other (41) was less structured and designed for more flexible delivery to individuals with the content largely focused on cognitive restructuring and behavioural activation and problem solving used on a case-by-case basis. Several commentaries (34, 40, 43) have suggested that the TADS treatment manual included too many treatment strategies and techniques and allowed for too much flexibility in delivery so that it may have been the case that insufficient core cognitive and/or behavioural strategies were delivered.

What is true is that variations in the content of treatment manuals for CBT has taken place with little investigation of which particular approaches and techniques are most effective, and for whom (40). There is a clear need to find therapeutic components that are suitable for young people with depression that can be delivered within the services that young people typically access while maintaining fidelity to the intervention. Given CBT has a robust body of research that supports its effectiveness, even if effect sizes have varied across trials, it would seem sensible to investigate the effective components of this intervention.

Materials and Methods

Aims

The aim of this review was to provide a narrative summary of the work that has been done to identify the core approaches and techniques of CBT for youth with depression.

Searching

We conducted a search of the literature in bibliographical databases, including PubMed and PsycINFO. All relevant articles published between inception of the database and March 2013 were included. The searching of these databases was done by combining terms in American and British spelling indicative of cognitive and/or behavioural therapy, and depression. In addition, we examined the reference lists and citations of included studies.

Inclusion criteria

Primary intervention studies and reviews/meta-analyses were included if they examined the efficacy and effectiveness of cognitive therapy or cognitive approaches compared with behavioural therapy or approaches. We did not limit by age given the paucity of literature but we did group studies into 1. Those examining effectiveness of cognitive therapy versus behavioural therapy in adults with depression; and, 2. Those examining effectiveness of cognitive therapy versus behavioural therapy in young people with depression. We have included a third group of studies that had undertaken post-hoc examinations of cognitive versus behavioural approaches in trials of depression in young people. Only English language studies were included.

Results

Evidence from studies in adults

A very early narrative review of 40 studies that were mostly randomised trials or studies

with matched control design (87%) compared behaviour therapy techniques with cognitive therapy techniques or a combination of both across a large range of mental health disorders and other presenting issues, including depression (44). The results from these 40 studies showed that in 83% of studies there was no additional benefit of adding cognitive techniques to behavioural approaches. Eight studies were conducted in adults with depression; these included a range of comparisons and overall showed that CT adds little in terms of treatment effectiveness to BT. Specifically, three studies that compared pure BT with pure CT showed no statistically significant difference in treatment outcome. Two studies showed no statistically significant difference in outcome when CT was added to BT compared with BT alone. One study compared BT with CT and with CBT and showed no statistically significant differences in outcome. The other study with this comparison was the only to favour CT, however the difference in treatment outcome was not statistically significantly different from the other comparisons groups. Finally, one study compared CT with CBT and favoured CBT highlighting the importance of behavioural techniques, though differences between the groups was not statistically significant.

While the above findings may be due to poor methodological quality and small sample sizes in each of the eight individual trials, more recent systematic reviews and meta-analyses of studies focused only on depression has extended this evidence. Four of the studies described above were included in this review, which has incorporated more rigorous methodology . These reviews include 16 (45) and 17 randomised controlled trials (46) respectively and 8 studies were common across both meta-analyses. Both investigate the effects of behavioural approaches, defined in Ekers, et al (2008) as those

interventions based on the “rescheduling of activities to reintroduce positive reinforcement and reduce avoidance” (p. 612) (46) and as “activity scheduling” in Cuijpers, et al 2007 (p. 319) (45) compared with control conditions (including treatment as usual, waitlist control, placebo attention) and other interventions (including brief psychotherapy, supportive counselling and CT/CBT). In Cuijpers’ review (45) 10 studies with 239 participants showed that activity scheduling was more effective than the control conditions post intervention with the result reaching significance (effect size 0.87); this difference did not reach significance when activity scheduling was compared with other psychological interventions the majority of which were CT or a combination of CT with activity scheduling (18 comparisons from 14 studies, effect size 0.13). Similarly, the Ekers review which includes more studies due to broader inclusion criteria and inclusion of unpublished studies showed that the pooled results from 12 studies (N=459) favoured behavioural approaches compared with control conditions with a similar effect size (0.70), and compared with brief psychotherapy (-0.56; 3 studies, N=166) and supportive therapy (-0.75; 2 studies, N=45). However, when compared with cognitive behavioural therapy (12 studies, N=476) there were no significant differences with behavioural approaches (46). Both authors suggest that delivery of an intervention that focuses on fewer techniques, such as only behavioural techniques, is arguably more simple and would require less training (45, 46). The intervention would then also be more suitable to implement in a range of services that provide shorter episodes of care delivered by a varied workforce. Additionally early work done in adults shows the largest reduction in depression symptoms during treatment with CBT occurred in the first few weeks of treatment when behavioural techniques are typically delivered(47). Thus, there is the possibility that BT

interventions might be more easily implemented in the real world in a way that maintains fidelity to the intervention.

In both reviews, the majority of included studies include participants on the basis of community recruitment and threshold scores on depression symptom measurement, rather than via diagnostic procedures, meaning the generalizability to clinical settings may be limited. Few studies provided follow-up data meaning it is unclear what the effects of the interventions are over time. Additionally, the quality of studies is variable with few reporting on adequate allocation concealment or how missing data were dealt with.

Evidence from studies in young people

A similar review and meta-analysis has been undertaken of trials investigating the efficacy of psychotherapy for children and adolescents with depression (mean age les than 18) (14). This review includes only one study (out of 35) with a head-to-head comparison. In this small study (N=30) by Reynolds and Coats (48), 30 adolescents were randomised to CBT, relaxation training or a waitlist control condition. Both CBT and relaxation were significantly superior to the waitlist control condition and there was no difference between the two active interventions in the reduction of depression symptoms. This is in contrast to the adult reviews that included more head-to-head comparisons of CBT or CT with behavioural activation. Therefore, a slightly different approach was taken in this review of studies in young people where psychotherapy interventions were coded as having either a ‘cognitive emphasis’ or ‘no cognitive emphasis’. ‘Cognitive emphasis’ was defined as “approaches that emphasise changes in

beliefs or ways of thinking about events or conditions" p. 135 and included treatments "focused on changing cognitions, thoughts, beliefs, ways of thinking, or internal self-talk" p. 135. 'No cognitive emphasis' included attachment-based family treatment, behavioural problem solving, group support, interpersonal psychotherapy, relaxation training, role-playing, self-modelling, social skills training, structured learning therapy, and systematic behaviour family therapy. In all, there were 31 interventions that involved a cognitive emphasis and 13 interventions that did not. The mean effect size was calculated for the 31 cognitive interventions (0.35) and the 13 non-cognitive interventions (0.47), and based on the *Q statistic* (a test of between group variance) there was no significant difference between these effect sizes (Q (1, 42)=0.63, p= .42). We further examined the studies classified as having interventions with 'no cognitive emphasis'. In all there were eight interventions we considered to be BT including relaxation, behavioral problem solving, self modeling, self control therapy and three interventions aimed at improving social skills including, social competency training, structured learning, and social skills training. The ES for seven of these implied an advantage for the BT group compared with the comparison groups (Treatment as Usual, Waitlist, Attention Placebo) and six of these were large effects (range 0.56 to 1.48).

Again in this review, less than half the studies used a diagnosed sample or provided treatment in a clinical setting and few provided follow-up data. While inclusion criteria were broad and non peer reviewed studies were included, little appraisal of the quality of the studies has been undertaken or incorporated into the results, although the authors did note inadequacies in the way missing data was dealt with.

Post hoc analysis studies in young people

The multiple strategies in the mode of CBT disseminated in the TADS study (17) has been criticised as being too dense, with simpler models of CBT that focus on one or two core components, such as behaviour activation and problem solving, argued to be more beneficial (37). We found one study where post hoc analysis of data from a study of young people with medication-treatment resistant depression (TORDIA) showed that CBT participants who received the problem-solving and social-skills training components of CBT were more likely to respond than those who did not (OR 2.3, 95% CI 1.1 to 5.0l and OR 2.6, 95% CI 1.1 to 6.5 respectively), even when controlling for the number of sessions received and baseline clinical characteristics (49). However, these are observational analyses, and are therefore subject to confounding biases that preclude causal inference regarding the effectiveness of particular components.

Discussion

Results from the meta-analyses of treatment effectiveness for both adults and children and adolescents with depression suggest that cognitive and behavioural approaches are equivalent in efficacy. This is further supported by the post hoc analyses of intervention studies undertaken in young people that in fact suggest behavioural approaches may lead to better treatment outcomes in this younger age group. Given the consistency of findings across adult reviews and reviews of younger age groups, it seems more likely that it is the severity of depression (rather than developmental cognitive level) that impacts on the outcomes from CBT. It may be that a full protocol of CBT is more difficult for young people to engage in, with outcomes from previous studies highlighting behavioural therapy as equally as effective as CBT. It has also been

suggested that young people may find it difficult to engage in the multiple strategies (both cognitive and behavioural) used in CBT, resulting in a failure to master skills to the extent where they could generalize from the treatment setting to every day life (37). It may be that purely behaviourally oriented approaches are easier for clinicians to deliver, especially to those with more severe depression, and easier for young people to engage in and master and therefore, benefit from.

It should be noted that reviews/meta-analyses and the post hoc analysis of intervention studies are all observational analyses, and are therefore subject to confounding biases that preclude causal inference regarding the effectiveness of particular components. It is also true that despite numerous treatment trials of CBT in young people (e.g. (13, 22, 50), young people's experience of cognitive behavioural therapy in terms of what aspects of CBT is most useful or effective for them has seldom been investigated. For example, only one small study of three participants that investigated their experiences of receiving CBT was found in our search of the literature (51). We also found one study in adults, that investigated whether cognitive skills, behavioural skills or both were acquired during a course of CBT and were predictive of reduced symptom severity, and general distress (52). Although both cognitive and behavioural skills were used more by the end of therapy, there was a stronger association between reduced depression symptom scores and behavioural skill acquisition.

These findings point to the need for further research to identify which particular approaches and techniques are most effective, and for whom. This is essential in terms of refining an intervention to enhance its effectiveness, and is particularly the case

because the critical core components of CBT have not yet been identified for young people with depression. CBT includes a wide range of approaches and techniques and has been criticised as being a dense and complex intervention, which may have compromised the ability of clinicians to maintain fidelity to the model in everyday clinical practice. Understanding the component parts of CBT that are most effective, and for whom, will enable translation of the most potent interventions and lead to better patient outcomes.

In the first instance a systematic review investigating the relative effectiveness of behavioural approaches to intervention compared with cognitive therapy and cognitive behavioural therapy in young people should be undertaken. Given the observational nature of this type of investigation, large head-to-head efficacy trials employing robust methods to minimise bias should be undertaken that investigate the relative contribution of the behavioural techniques of CBT against a full protocol of CBT and CT.

If new and more refined treatment approaches are shown to be effective, the potential impact on outcomes for young people with depression is profound. Given depression is the single greatest cause of morbidity during adolescence and young adulthood, and has a significant influence on the development of social relationships and vocational skills, more effective interventions will mean that the burden of depression will be significantly addressed.

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Conflict of interest

The authors report no conflict of interest.

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