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A Qualitative Analysis of the Descriptions of Cognitive Behavioural Therapy (CBT) Tested in Clinical Trials of Depressed Young People

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Abstract

Objectives: The prevalence of depression in young people is high and the potential negative impacts are significant. Timely evidence-based treatment is critical. Current recommendations are that cognitive behavioural therapy (CBT) is used as a first line intervention, however, the extent to which CBT results in improvements in depression symptoms varies across trials. One possible explanation for this is variation in nature of CBT used across trials.

Methods: In the context of a systematic review of evidence based psychotherapy interventions for young people with depression, we extracted the text about the CBT approaches and techniques to investigate how trial authors described their CBT intervention and to examine the nature of CBT delivered in trials. We coded this data on 14 intervention description domains regarding how and by whom CBT was delivered. We used the constant comparative method to categorise the descriptions of CBT interventions.

Results: Overall, the reporting of CBT protocols was highly variable across trials, with varying levels of detail provided and inconsistent language used. The categories that we identified from this analysis included: 1. Full CBT; 2. Partial CBT with an emphasis on cognitive techniques; 3. Partial CBT with an emphasis on behavioural techniques.

Conclusion: There is need for better standards and guidelines for reporting of trials of psychotherapy interventions to facilitate authors to adequately describe their work for their audience, including details about approaches and techniques included in the intervention, as well as how it was delivered and by whom. Understanding the nature of the CBT protocols being tested in research is important for ensuring effective translation of research findings into clinical practice. Given the variation in approaches to CBT, investigation is needed regarding those that young people find most helpful and effective.

Keywords: Depression; Young people; Cognitive behavioural therapy; Evidence based intervention; Psychotherapy; Randomised controlled trials; Implementation

Introduction

Depression in young people is a significant issue. It accounts for the greatest burden of disease in this age group [1] with adolescence and young adulthood the peak period for the emergence of new cases of depression [2]. The onset of depression in this developmental stage is associated with lifelong impairment, including poor physical health, problems with developing and maintaining good relationships, poor vocational attainment and achievement [3,4]. Further, depression is associated with an increased risk of self harm and suicide [5] and results in a reduction of potential and productivity into adulthood [6-8]. For many, early episodes of depression will develop into recurrent episodes in adulthood [9]. It is therefore critical to provide optimal treatment to this group [10].

Consistent with a range of international guidelines, the Evidence Based Clinical Practice Guidelines (EBCPG) for treating youth depression developed by beyondblue, The National Depression Initiative and endorsed by Australia's National Health and Medical Research Council (NHMRC) recommend that clinicians "provide cognitive behavioural therapy (CBT) or interpersonal therapy (IPT) as first line psychological treatment for moderate to severe depression" (recommendation, grade B: this indicates that there are one or two RCTs with low risk of bias or a systematic review/several pseudo RCTs with low risk of bias with generally consistent results; overall this means there is a body of evidence that can be trusted to guide practice in most situations [11]. CBT is the most frequently studied psychotherapy for depression in young people [12,13]. It aims to help clients to identify, explore and modify relationships between

negative thinking, behaviour and a depressed mood. CBT developed from the merging of behavioural therapy (BT) approaches popular in the 1950's and 1960s with the newly influential cognitive therapy (CT) approach of the 1970's. While allowing for behavioural causes, the dominant assumption is that negative cognition has a causal role in the development and maintenance of depression [14,15]. Core CBT 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 [16,17].

However, there is considerable inconsistency of effects observed in trials of psychotherapy, and more specifically CBT for depression in young people. Compared with earlier reviews that demonstrated large effect sizes for CBT compared with other psychotherapies or waitlist control [18-20], recent trials and reviews have shown less impressive

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results. For example, The Treatment for Adolescent Depression study (TADS) [21], randomised young people 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. Recent reviews suggest that, while still more effective than a range of comparison conditions, CBT has more modest effects than first believed [13,22].

The observed inconsistency in effect sizes may be due to the variations in treatment protocols across trials. CBT is generally regarded as a family of allied therapies [23] and it continues to evolve with a wide range of approaches and techniques variously included in different CBT treatment protocols [16,17]. Little investigation of which particular approaches and techniques are most effective, and for whom has been undertaken. A seminal review by Weisz [13,24] attempted to look at this issue specifically by examining whether interventions using a cognitive emphasis were more effective than those that did not. They found that this was not the case. At a similar time other reviews were published [22,25] that showed larger effect sizes for purely BT interventions compared with CBT. To be able to further investigate this issue, a greater understanding of the variation in the nature of CBT that is delivered is required. Our aim in this study was to examine the nature of CBT implemented across trials; this can only be done on the basis of what is described in the publication describing these trials and as such we also aimed to investigate the quality of the descriptions of CBT interventions across trials.

In undertaking this work, we are contributing to the translation of research knowledge into clinical practice in the area of CBT for treating depression in young people. In order for this body of literature to be of clinical value, it needs to be sufficiently detailed to facilitate translation and implementation. Specifically, detailed descriptions in peer reviewed literature of the interventions delivered in trials are required to be able to identify and implement interventions shown to be effective [26]. This step is essential in ensuring the translation from research into practice, in order for interventions to be tailored and contextualised to meet the needs of local populations and services. Tailoring interventions for local contexts requires an in-depth understanding of the theoretical underpinnings of the intervention and the basic processes through which the components of the interventions are proposed to operate [16]. The major aim of this study, therefore, was to examine the level of detail of descriptions of CBT interventions included in depression treatment trials in young people.

Methods

The review authors comprised of an expert in conducting systematic reviews in youth depression, experienced clinical psychologists, and a qualitative research methods expert.

The data for this study were the descriptions of CBT extracted from each of the trials of CBT for the treatment of depression in young people. These trials were all randomised controlled trials of CBT compared with any comparison condition for young people aged 12 to 25 with depression and sub-threshold depression which were selected located via electronic searches of MEDLINE, PSYCHINFO, EMBASE, and The Cochrane Central Register of Controlled Trials (CENTRAL), as well as ancestry searches of the reference lists of included trials.

To examine the level of detail used to describe CBT interventions in these trials, two independent review authors extracted data on 14 intervention description domains described below (based on the 8 item checklist developed by Hoffmann and colleagues to assess the

completeness of descriptions of non-pharmacological interventions in randomised trials [27]. It should be noted that in some cases we only had access to descriptions of the intervention in the published trial, whereas in other cases the trial authors indicated in their manuscripts the availability of intervention manuals that were publically available on the Internet. We did not contact trial authors for verification of missing data or for access to intervention manuals.

Domains one and two captured intervention dosage and described the number of sessions delivered and session length in minutes. Domains three and four captured the intervention schedule and described session frequency as the number of sessions per week and total intervention duration in weeks. Domain five described whether the intervention was delivered in individual or group format. Domain six and seven captured reporting of study interventionists and described whether the interventionists were qualified, students or a mix of the two and whether the interventionist's profession(s) was reported. Domains eight and nine captured fidelity to intervention and described whether it was measured and if fidelity results were reported. Domains one to nine are displayed in Table 1. Domains 10 and 11 captured whether the intervention was manualised and if so whether the manual was referenced, either published or unpublished. Domain 12 captured whether the study authors referenced a particular theorist explicitly related to the intervention delivered. Domain 13 captured whether the intervention manual had been previously tested or whether it was based on modified from a previously tested intervention manual. Domain 14 captured whether an intervention description was provided and if this was a module-by-module or overall summary description. Domains 10 to 14 are displayed in Table 2 along with a score indicating the total number of intervention description domains the trial failed to report on.

Constant comparative methods

To explore the nature of CBT interventions implemented in the included trials we used the constant comparative method. The constant comparative method is a method for analyzing data in order to develop a grounded theory. The units of data for this study were the extracted descriptions of CBT from each of the trials. We undertook a process that included open coding, axial coding and selective coding according to the method described by Strauss and Corbin [28]. Open coding involved examination of the data with reference to our aim of understanding the nature of CBT that is implemented in trials. We developed a list of provisional codes to categorise the types of techniques typically included in the CBT implemented in trials. These included cognitive restructuring, behavioural activation, relaxation, problem solving and social skills training. We then examined the shared characteristics of the descriptions with the same code and as a result categories were developed with criteria formulated for each category in order to facilitate comparisons between descriptions of CBT [28]; this is the process of axial coding. As described by Taylor and Bogdan [29] this simultaneous process of coding and analyzing units of data by continually comparing each new unit of data facilitated a process of ongoing refinement of the content and definition of our categories and how these relate to each other. Only once new data failed to reveal any new information the categories were described as saturated. Finally three core categories were identified that best allowed for a description the nature of the data in terms of the categories we started with to facilitate an explanation of the potential difficulties that might be encountered when translating CBT from research into everyday clinical practice.

Study ID	CBT type ^a	Dose		Schedule		Format ^b	Interventionist		Fidelity	
		number of sessions	session length [mins]	session frequency	total time [weeks]		qualified ^c	profession	description of measurement	result reported
Brent et al. [37]	1	12-16	NR	weekly	12-16	Ind	Q	NR	yes	yes
Clarke et al. [38]	2	15	45	3/week	5	Grp	Q	psychologist	yes	yes
Clarke et al. [39]	1	16	120	2/week	8	Grp	M	psychologist, social worker	yes	yes
Clark et al. [40]	2	15	60	NR	NR	Grp	Q	psychologist	yes	yes
Clarke et al. [41]	1	16	120	2/week	8	Grp	NR	NR	yes	yes
Curtis [42]	1	12	120	2/week	8	Grp	NR	NR	NR	NR
Dobson et al. [43]	2	15	45	NR	NR	Grp	S	clinical psychologist	NR	NR
Eskin et al. [44]	3	6	30 - 60	weekly	6	Ind	S	clinical psychologist	NR	NR
Gawrysiak et al. [34]	3	1	90	weekly	1	Ind	S	clinical psychologist	NR	NR
Gillham et al. [45]	2	12	90	NR	NR	Grp	Q	child psychologist, child social worker	yes	yes
Ginsburg et al. [46]	1	8	30 - 60	weekly	8	Ind	Q	allied health	yes	NR
Hamamci et al. [32]	1	11	180	weekly	11	Grp	NR	NR	NR	NR
Hamdan-Mansour et al. [47]	1	10	45	weekly	10	Grp	Q	nurse	yes	NR
Kahn et al. [48]	1	12	60	2/week	6-8	Grp	Q	school psychologist, school counsellor	yes	yes
Kaviani et al. [49]	2	8	150	weekly	8	Grp	NR	NR	yes	NR
Kerfoot et al. [50]	1	8	NR	NR	NR	Ind	Q	social work	NR	NR
Kowalenko et al. [51]	1	8	90	weekly	8	Grp	Q	school counsellor, adolescent mental health worker	NR	NR
Lamb et al. [52]	2	NR	NR	NR	8	Grp	Q	psychiatric nurse	NR	NR
Lewinsohn et al. [53]	1	14	120	2/week	7	Grp	S	clinical counseling, education psychology, social work	yes	yes
Moldenhauer [54]	1	6	60	weekly	6	Ind	Q	nurse	yes	yes
Peden et al. [33]	2	NR	NR	NR	6	Grp	NR	NR	NR	NR
Phillips [55]	1	6	60	weekly	6	Grp	M	social work	NR	NR
Puskar et al. [56]	1	10	45	weekly	10	Grp	Q	nurse	yes	NR
Reed [57]	3	6	NR	"biweekly"	NR	Grp	NR	NR	NR	NR
Reynolds et al. [58]	1	10	50	2/week	5	Grp	S	psychologist	yes	yes
Rohde et al. [59]	1	16	120	2/week	8	Grp	M	NR	NR	NR
Rosello et al. [60]	1	12	60	weekly	12	Ind	S	clinical psychologist	yes	yes
Rosello et al. [61]	1	12	I=60; G=120	weekly	12	Ind + Grp	S	clinical psychologist	yes	yes
Seligman et al. [62]	1	8	120	weekly	8	Grp	Q	NR	NR	NR
Stice et al. [63]	2	4	60	weekly	4	Grp	S	NR	NR	NR
Stice et al. [64]	2	6	60	weekly	6	Grp	S	NR	yes	yes
Vazquez et al. [65]	1	8	90	weekly	8	Grp	S	clinical psychologist	NR	NR
Vostanis et al. [66]	1	9	NR	fortnightly	18	Ind	Q	child psychiatrist	yes	yes
Wood et al. [67]	1	8	NR	NR	NR	Ind	Q	child psychiatry	yes	yes

^a1=full CBT; 2=partial CBT with cognitive emphasis; 3=partial CBT with behavioural emphasis. NR=not reported
^bInd = individual, Grp = group
^cS=student, Q=qualified, M=mixed, student + qualified

Table 1: Intervention description domains: specifics of delivery.

Results

A summary of the information about the CBT interventions that were implemented in each trial is included in Tables 1 and 2. Table 1 describes the specifics of the delivery of the intervention while Table 2 describes whether the intervention was manualised and theory based. Across the two tables are 14 intervention description domains. There was noteworthy variability in reporting of trials across the 14 domains.

Of the 34 included studies, only two provided information for each of the 14 intervention description domains. Four of the 34 trials had missing information for at least half of the domains and most (68%) had information missing for between two and six of the domains. The most frequent missing items related to measuring and reporting

treatment fidelity (56% incomplete). Six out of 34 (18%) did not state if their intervention manual had been previously tested, or if it was based on or modified from a previously tested intervention and 56% did not reference a source document for their intervention manual that could be obtained. Regarding intervention dose, 21% of trials failed to report session length. Twelve trials and nine trials referenced the work of Beck [30] and Lewinsohn [31] respectively (Table 2).

Each of the descriptions of CBT from our corpus of included studies was subject to close reading, comparison and analysis according to the constant comparative method [28]. The descriptions of CBT were variously based on the descriptions in the trial publications and in some instances on the intervention manuals where these were publically

Study ID	Manualised	Manual referenced? (published or unpublished)	Theory reference provided (explicitly related to intervention)	Was the intervention manual previously tested or based on/modified from a previous intervention manual?	Intervention description provided? (module by module or overall summary)	Number of domains not reported
						(out of 14)
Brent et al. [37]	Yes	NR	Beck et al. [68]	Brent et al. [69]	Summary	3
Clarke et al. [38]	Yes	NR	Lewinsohn et al. [70]	Clarke et al. [71] Lewinsohn et al. [53]	Summary	1
Clarke et al. [39]	Yes	Clarke et al. [71] published	NR	Lewinsohn et al. [53]	Summary	1
Clarke et al. [40]	Yes	Clarke et al. [72] published	Beck et al. [68]; Ellis et al. [73]	Clarke et al. [38]	Summary	2
Clarke et al. [41]	Yes	Clarke et al. [71] published	Beck [68]; Ellis [73]	Lewinsohn et al. [53]	Summary	2
Curtis et al. [42]	Yes	NR	Lewinsohn [70]	Lewinsohn et al. [53]	Summary	5
Dobson et al. [43]	Yes	Clarke et al. [72] published	NR	Clarke et al. [38]	Summary	5
Eskin et al. [44]	Yes	NR	D'Zurilla [74-76]	NR	Module	4
Gawrysiak et al. [34]	Yes	NR	Lewinsohn [77-79]	Hopko et al. [79]; Lejuez et al. [80]	Module	3
Gillham et al. [45]	Yes	NR	Beck et al. [68]; Ellis [81]; Seligman [82]	Gillham et al. [83]; Jaycox et al. [84]	Summary	3
Ginsburg et al. [46]	Yes	NR	NR	Clarke et al. [71]; Curry et al. [85]	Module	3
Hamamci [32]	Yes	NR	Beck et al. [68]	NR	Summary	6
Hamdan-Mansour et al. [47]	Yes	NR	NR	Puskar et al. [56]	Summary	3
Kahn et al. [48]	Yes	Clarke et al. [86] unpublished	NR	Lewinsohn et al. [87]; Clarke et al. [86]	Module	1
Kaviani et al. [49]	Yes	Segal et al. [88] published	NR	Teasdale et al. et al. [89]	Summary	4
Kerfoot et al. [50]	NR	NR	NR	Kroll et al. [90]; Wood et al. [67]	Summary	8
Kowalenko et al. [51]	Yes	Wignall et al. [91,92] unpublished	NR	Kowalenko et al. [93]; Hannan et al. [94]	Summary	3
Lamb et al. [52]	NR	NR	Beck et al. [95]	NR	Summary	8
Lewinsohn et al. [53]	Yes	Clarke et al. [86] unpublished	NR	Lewinsohn et al. [96]	Summary	1
Moldenhauer [54]	Yes	Clarke et al. [71] published	Lewinsohn [87]; Beck [68]; Seligman [97]; Ellis [81]	Lewinsohn et al. [53]	Module	0
Peden et al. [33]	NR	NR	Gordon et al. [98]; Copeland et al. [99]	Peden et al. [100]	Summary	9
Phillips [55]	Yes	Clarke et al. [71] published	NR	Clarke et al. [71]	Module	3
Puskar et al. [56]	NR	NR	NR	NR	Summary	5
Reed et al. [57]	Yes	Goldstein et al. [101] published	Goldstein et al. [101,102]	NR	Summary	7
Reynolds et al. [58]	NR	NR	Beck et al. [68]; Lewinsohn et al. [75]; Rehm et al. [103]	Rehm et al. [104]	Module	2
Rohde et al. [59]	Yes	Clarke et al. [71] published	NR	Lewinsohn et al. [53]	Summary	4
Rosello et al. [60]	Yes	From author unpublished	Munoz et al. [105]; Lewinsohn et al. [96] Beck et al. [68]; Ellis [81]	NR	Module	1
Rosello et al. [61]	Yes	From author unpublished	Munoz [106]; Lewinsohn [96]; Beck et al. [68]; Ellis [81]	Rosello et al. [60]	Summary	0
Seligman et al. [62]	Yes	Gillham et al. [106]; Reivich et al. [107] unpublished	Beck et al. [68]	Seligman [108]	Module	3
Stice et al. [63]	Yes	NR	NR	Clarke et al. [38]	Module	5

Stice et al. [64]	Yes	NR	NR	Clarke et al. [38]	Summary	5
Vazquez et al. [65]	Yes	NR	Lewinsohn et al. [109]	Muñoz et al. [110]	Module	3
Vostanis et al. [66]	Yes	NR	NR	Stark [111]	Module	2
Wood et al. [67]	Yes	NR	Beck et al. [95]	Vostanis et al. [112]; Stark [111]; Reynolds et al. [58]	Summary	4

Table 2: Intervention description domains: intervention source documentation

available. The core categories that we identified in the analysis of the data included:

1. **Full CBT:** Delivery included cognitive techniques (i.e. cognitive restructuring), behavioural techniques (i.e. behavioural activations) and additional components such as problem solving, social skills training, or relaxation were described as being delivered.

2. **Partial CBT:** Delivery included cognitive techniques, and/or behavioural techniques, and/or additional components, but not all three; these partial CBT interventions were further defined as having an emphasis on cognitive techniques or having an emphasis on behavioural techniques.

In total, 22 trials (65%) implemented a full CBT program, 9 trials (26%) implemented partial CBT with a cognitive focus, and the remaining 3 trials (9%) implemented CBT with a behavioural focus. Illustrative quotes have been included to highlight the content that relates directly to the categories of CBT described above.

Full CBT: e.g. Hamamci [32]

“The fundamental goals of group therapy for depression were examination and modification of depressed individuals’ maladaptive beliefs systems and dysfunctional forms of information processing. Therapist included cognitive techniques such as Socratic questioning, dysfunctional thought record, downward arrow, labeling and challenging cognitive distortions, as well as behavioural techniques such as scheduling activities, self-monitoring, behavioural rehearsal, and behavioural experiment. The content of the therapy consisted of training in systematic self-monitoring of cognitions, events, and moods; and training in strategies designed to identify and change distorted cognitive systems, mini-lectures, reading, and homework assignments... The last two sessions focused on anticipating future stress and problems in group members lives and in developing strategies for coping with these problems” p 202 [32]

Partial CBT: Cognitive focus: e.g. Peden [33]

“The 6-week cognitive-behavioural group intervention was designed to reduce negative thinking in depressed women... The intervention evolved from a series of studies in which women recovering from depression identified negative thinking as the most difficult symptoms to overcome [33]. Strategies or techniques used to manage negative thinking were described, including thought stopping and positive self-talk. Affirmations and direct actions were adapted from the Insight Program of Gordon and Tobin. *The Depression Workbook* (Copeland) provided information on thought stopping, affirmations, and distorted thinking styles.” p147 [33].

Partial CBT: – behavioural focus: e.g. Gawrysiak [34].

“The comprehensive BATD treatment (Hopko and Lejuez, Lejuez, et al.) is based on the premise that increased activity and the resulting experience of environmental reinforcement is sufficient for the reduction of depressive symptoms and a corresponding increase in positive thoughts and feelings. The current treatment protocol represented a major modification of the original BATD intervention in

that it was reduced to a one-session treatment. This decrease in therapy duration from the typical nine-session format predominantly resulted in five fewer weeks of activity scheduling (i.e., BA); a non-progressive approach to activating, in which a much greater number of behaviors were targeted for activation immediately, as opposed to the traditional graded approach to activity scheduling; and omission of behavioral contracting strategies to decrease rewards for depressive behaviors. Otherwise, all elements of the comprehensive BATD treatment were maintained.” p. 471 [34].

Discussion

Summary of main findings

While only two studies reported on all 14 intervention description domains thought to be important, the majority did report on more than 50% of these. Some key aspects of reporting on the detail of the intervention need improvement, and would be simple to rectify, for example, session length. It is of concern that the most frequently unreported domains related to assessment and reporting of treatment fidelity, sufficient reference to intervention manuals, availability of source documents and reporting of planned session length.

The measurement and reporting of fidelity to the intervention has implication for the potential to draw conclusions about the effectiveness of the interventions and influences the relationship between intervention and outcome. Without the reporting of fidelity, the degree to which the described intervention produced the outcome cannot be adequately determined. Without certainty with regard to the fidelity of trial therapists to the intervention manual, there is the potential that other variables may be driving the intervention effect, which is problematic for the translation and implementation of the intervention [35].

In undertaking the constant comparative method, it became evident that only two broad categories (one of which had two sub-categories) could be identified due to the large variation in the quality and detail of the description of the CBT. While word limitations for publications mean that descriptions of interventions may be somewhat truncated, we did examine whether there was reference to another publication or a published or unpublished manual that gave full description of the intervention. More than half did not have an available source document describing the intervention in full.

Given that CBT is a complex intervention that potentially includes a large range of techniques [16,17], the lack of adequate descriptions of the exact nature of the intervention being examined in a trial means that research findings can not be easily implemented into every day clinical practice, leading to barriers for both clinicians and consumers in terms of realising effective treatment outcomes [26].

Strengths and weakness of study

This is the first study of this kind to examine the quality and completeness of intervention descriptions in psychotherapy trials. The strengths of this study include the comprehensive collection of the CBT intervention descriptions gathered, facilitated by an exhaustive search

for and careful inclusion of all relevant published randomised controlled trials of CBT for depression in young people. Additionally we employed independent double data extraction and used robust qualitative data analytic techniques according to the constant comparative method. The research team comprised of an expert in conducting systematic reviews in youth depression, experienced clinical psychologists, and a qualitative research methods expert.

Given the lack of reporting of or access to all source documentation, our coding system contained some inconsistency. For some trials, decisions were made based on information provided in the published manuscript while for others the actual intervention manual or source documentation was evaluated, when publically available. Further, we did not contact authors for verification of missing details and source materials (i.e., intervention manuals). While these two weaknesses are noted, they simultaneously highlight important shortcomings of published trials with regard to intervention reporting.

Implications

There is need for better standards and guidelines for reporting of trials of psychotherapy interventions to guide authors to adequately describe their work for their audience, whether that be researchers, clinicians, consumers or policy makers. Publication word limits may impinge on complete reporting of interventions and journals should more readily provide facility for supplementary information to be published or made available. Journal editors and peer reviewers should be tasked with the responsibility of ensuring interventions are adequately described and source material is provided when making review and publication recommendations.

In describing complex interventions authors should not rely solely on catchall descriptors such as 'behavioural intervention' but instead outline precisely what components constituted the intervention (e.g., behavioural activation, problem solving, social skills training) and how they were delivered. This should be in sufficient detail and supported by all relevant resources and source documents necessary to allow replication of the delivered intervention component. Unfortunately only a handful of trials included in the present review provided sufficient information to enable suitable replication.

Improving the quality and completeness of intervention reporting in psychotherapy trials has the potential to benefit the fields of research and clinical practice. Research gains may include the ability to conduct true replication and extension studies, both of which are necessary steps to establish the effectiveness of a given intervention before implementation into real world clinical settings. Additionally, by adequately describing interventions and/or making treatment manuals available, there is the potential to save an immense amount of time and resources by not creating resources/manuals from scratch. Practice gains include facilitating the translation and implementation of interventions that have been shown to be effective into routine clinical practice. Without adequate reporting, clinicians cannot reliably implement effective interventions.

A further benefit of comprehensive descriptions of interventions is the facilitation of component analyses. Component analyses are possible when we have a thorough description of an intervention, how it is delivered and in what 'dose', to enable an analysis of which components of the intervention effect change. For example, while most trials in the present study implemented a full program of CBT, preliminary analysis of outcome data from these trials shows that partial CBT with a behavioural focus is associated with more favourable

patient outcomes [36]. This next critical next step is essential to better understand which types of interventions are most likely to maximise the likelihood of symptom reduction.

Overcoming the shortfalls outlined has great potential to benefit clinical research and facilitate the translation of this work into routine clinical practice. Better reporting of interventions will facilitate research gains, through replication and extension studies, as well as component analyses to determine components are integral or necessary to effect change. Further benefits will include practice gains, whereby clinicians can reliably implement interventions shown to be effective, leading to better outcomes for young people.

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References

1. Gore FM, Bloem PJ, Patton GC, Ferguson J, Joseph V, et al. (2011) Global burden of disease in young people aged 10-24 years: a systematic analysis. *Lancet* 377: 2093-2102.
2. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, et al. (2005) Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey replication. *Arch Gen Psychiatry* 62: 593-602.
3. Birmaher B, Ryan ND, Williamson DE, Brent DA, Kaufman J, et al. (1996) Childhood and adolescent depression: A review of the past 10 years: Part 1. *J Am Acad Child Adolesc Psychiatry* 35:1427-1439.
4. Lewinsohn PM, Rohde P, Seeley JR (1998) Major depressive disorder in older adolescents: prevalence, risk factors, and clinical implications. *Clin Psychol Rev* 18: 765-794.
5. Gould MS, King R, Greenwald S, Fisher P, Schwab-Stone M, et al. (1998) Psychopathology associated with suicidal ideation and attempts among children and adolescents. *J Am Acad Child Adolesc Psychiatry* 37: 915-923.
6. Gibb SJ, Fergusson DM, Horwood LJ (2010) Burden of psychiatric disorder in young adulthood and life outcomes at age 30. *Br J Psychiatry* 197: 122-127.
7. Kessler RC, Heeringa S, Lakoma MD, Petukhova M, Rupp AE, et al. (2008) Individual and societal effects of mental disorders on earnings in the United States: results from the national comorbidity survey replication. *Am J Psychiatry* 165: 703-711.
8. Fergusson DM, Boden JM, Horwood LJ (2007) Recurrence of major depression in adolescence and early adulthood, and later mental health, educational and economic outcomes. *Br J Psychiatry* 191: 335-342.
9. Kessler RC, Walters EE (1998) Epidemiology of DSM-III-R major depression and minor depression among adolescents and young adults in the National Comorbidity Survey. *Depress Anxiety* 7: 3-14.
10. Allen NB, Hetrick SE, Simmons JG, Hickie IB (2007) Early intervention for depressive disorders in young people: the opportunity and the (lack of) evidence. *Med J Aust* 187: S15-17.
11. McDermott B, Baigent M, Chanen A, Fraser L, Graetz B et al. (2011) Beyond blue Expert Working Committee (2010) Clinical practice guidelines: Depression in adolescents and young adults. Melbourne.
12. Callahan P, Liu P, Purcell R, Parker AG, Hetrick SE (2012) Evidence map of prevention and treatment interventions for depression in young people. *Depress Res Treat* 2012: 820735.
13. Weisz JR, McCarty CA, Valeri SM (2006) Effects of psychotherapy for depression in children and adolescents: a meta-analysis. *Psychol Bull* 132: 132-149.
14. Dimidjian S, Barrera M Jr, Martell C, Muñoz RF, Lewinsohn PM (2011) The origins and current status of behavioral activation treatments for depression. *Annu Rev Clin Psychol* 7: 1-38.
15. Longmore RJ, Worrell M (2007) Do we need to challenge thoughts in cognitive behavior therapy? *Clin Psychol Rev* 27: 173-187.
16. Weersing VR, Rozenman M, Gonzalez A (2009) Core components of therapy in youth: do we know what to disseminate? *Behav Modif* 33: 24-47.

17. McCarty CA, Weisz JR (2007) Effects of psychotherapy for depression in children and adolescents: what we can (and can't) learn from meta-analysis and component profiling. *J Am Acad Child Adolesc Psychiatry* 46: 879-886.
18. Reinecke MA, Ryan NE, DuBois DL (1998) Cognitive-behavioral therapy of depression and depressive symptoms during adolescence: a review and meta-analysis. *J Am Acad Child Adolesc Psychiatry* 37: 26-34.
19. Michael KD, Crowley SL (2002) How effective are treatments for child and adolescent depression? A meta-analytic review. *Clin Psychol Rev* 22: 247-269.
20. Lewinsohn PM, Clarke GN (1999) Psychosocial treatments for adolescent depression. *Clin Psychol Rev* 19: 329-342.
21. March J, Silva S, Petrycki S, Curry J, Wells K et al. (2004) Fluoxetine, cognitive-behavioral therapy, and their combination for adolescents with depression: Treatment for Adolescents with Depression Study (TADS) Randomized Controlled Trial. *JAMA* 292: 807-820.
22. Weersing VR, Brent DA (2006) Cognitive behavioral therapy for depression in youth. *Child Adolesc Psychiatr Clin N Am* 15: 939-957, ix.
23. Mansell W (2008) The Seven Cs of CBT: a consideration of the future challenges for cognitive behaviour therapy. *Behav Cogn Psychoth* 36: 641-649.
24. Weisz JR, Jensen-Doss A, Hawley KM (2006) Evidence-based youth psychotherapies versus usual clinical care: a meta-analysis of direct comparisons. *Am Psychol* 61: 671-689.
25. Watanabe N, Hunot V, Omori IM, Churchill R, Furukawa TA (2007) Psychotherapy for depression among children and adolescents: a systematic review. *Acta Psychiatr Scand* 116: 84-95.
26. Hoffmann TC, Erueti C, Glasziou PP (2013) Poor description of non-pharmacological interventions: analysis of consecutive sample of randomised trials. *BMJ* 347: f3755.
27. Higgins JPT, Green S (2011) *Cochrane Handbook for Systematic Reviews of Interventions*. (Version 5.1.0) [updated March 2011]. : The Cochrane Collaboration. Available from <http://www.cochrane-handbook.org>.
28. Huang XY, Lin MJ, Yang TC, Sun FK (2009) Hospital-based home care for people with severe mental illness in Taiwan: a substantive grounded theory. *J Clin Nurs* 18: 2956-2968.
29. Taylor SJ, Bogdan R (1984) *Introduction to Qualitative Research Methods: The Search for Meanings*. Wiley.
30. Beck AT, Rush AJ, Shaw BF, G. E (1979) *Cognitive therapy of depression*. Guilford Press.
31. Lewinsohn P, Hoberman H, Teri L, Hautzinger M (1985) An integrative theory of unipolar depression. In: S. Reiss, Bootzin R (Eds). *Theoretical issues in behavior therapy*. Academic Press.
32. Hamamci Z (2006) Integrating psychodrama and cognitive behavioral therapy to treat moderate depression. *Arts in Psychotherapy* 33:199-207.
33. Peden AR, Hall LA, Rayens MK, Beebe LL (2000) Reducing negative thinking and depressive symptoms in college women. *J Nurs Scholarsh* 32: 145-151.
34. Gawrysiak M, Nicholas C, Hopko DR (2009) Behavioral activation for moderately depressed university students: randomized controlled trial. *Journal of Counselling Psychology* 3:468-475.
35. Schoenwald SK, Garland AF, Chapman JE, Frazier SL, Sheidow AJ, et al. (2011) Toward the effective and efficient measurement of implementation fidelity. *Adm Policy Ment Health* 38: 32-43.
36. Hetrick SE, Bailey A, Simmons M, Rice S, McKenzie JE et al. (2013) Evidence based psychotherapy for young people with depression: is some better than others? Proceedings of the Australasian Society for Psychiatric Research (ASPR) Conference.
37. Brent DA, Holder D, Kolko D, Birmaher B, Baugher M, et al. (1997) A clinical psychotherapy trial for adolescent depression comparing cognitive, family, and supportive therapy. *Arch Gen Psychiatry* 54: 877-885.
38. Clarke GN, Hawkins W, Murphy M, Sheeber LB, Lewinsohn PM et al. (1995) Targeted prevention of unipolar depressive disorder in an at-risk sample of high school adolescents: A randomized trial of group cognitive intervention. *J Am Acad Child Adolesc Psychiatry* 34:312-321.
39. Clarke GN, Rohde P, Lewinsohn PM, Hops H, Seeley JR (1999) Cognitive-behavioral treatment of adolescent depression: efficacy of acute group treatment and booster sessions. *J Am Acad Child Adolesc Psychiatry* 38: 272-279.
40. Clarke GN, Hornbrook M, Lynch F, Polen M, Gale J, et al. (2001) A randomized trial of a group cognitive intervention for preventing depression in adolescent offspring of depressed parents. *Arch Gen Psychiatry* 58: 1127-1134.
41. Clarke GN, Hornbrook M, Lynch F, Polen M, Gale J et al. (2002) Group cognitive-behavioral treatment for depressed adolescent offspring of depressed parents in a health maintenance organization. *J Am Acad Child Adolesc Psychiatry* 41: 305-313.
42. Curtis SE (1992) *Cognitive-behavioral treatment of adolescent depression: effects of multiple parameters* (unpublished dissertation). Utah State University.
43. Dobson KS, Hopkins JA, Fata L, Scherrer M, Allan LC (2010) The prevention of depression and anxiety in a sample of high-risk adolescents: A randomized controlled trial. *Can J Sch Psychol* 25: 291-310.
44. Eskin M, Ertekin K, Demir H (2008) Efficacy of a problem-solving therapy for depression and suicide potential in adolescents and young adults. *Cognitive Ther Res* 32: 227-245.
45. Gillham JE, Hamilton J, Freres DR, Patton K, Gallop R (2006) Preventing depression among early adolescents in the primary care setting: a randomized controlled study of the Penn Resiliency Program. *J Abnorm Child Psychol* 34: 203-219.
46. Ginsburg G, Barlow A, Goklish N, Hastings R, Baker E, et al. (2012) Postpartum depression prevention for reservation-based American Indians: Results from a pilot randomized controlled trial. *Child Youth Care Forum* 41: 229-245.
47. Hamdan-Mansour AM, Puskar K, Bandak AG (2009) Effectiveness of cognitive-behavioral therapy on depressive symptomatology, stress and coping strategies among Jordanian University students. *Issues Ment Health Nurs* 30:188-196.
48. Kahn JS, Kehle TJ, Jenson WR, Clarke E (1990) Comparison of cognitive-behavioral relaxation, and self-modeling interventions for depression among middle-school students. *School Psych Review* 19: 196-211.
49. Kaviani H, Hatami N, Javaheri F (2012) The impact of mindfulness-based cognitive therapy (MBCT) on mental health and quality of life in a sub-clinically depressed population. *Arch Psych Psych* 14: 21-28.
50. Kerfoot M, Harrington R, Harrington V, Rogers J, Verduyn C (2004) A step too far? Randomized trial of cognitive-behaviour therapy delivered by social workers to depressed adolescents. *Eur Child Adolesc Psychiatry* 13: 92-99.
51. Kowalenko N, Rapee RM, Simmons J, Wignall A, Hoge R, et al. (2005) Short-term effectiveness of a school-based early intervention program for adolescent depression. *Clin Child Psychol Psychiatry* 10: 493-507.
52. Lamb JM, Puskar KR, Sereika SM, Corcoran M (1998) School-based intervention to promote coping in rural teens. *MCN Am J Matern Child Nurs* 23: 187-194.
53. Lewinsohn PM, Clarke GN, Hops H, Andrews J. (1990) Cognitive-behavioral treatment for depressed adolescents. *Behav Ther* 21: 385-401.
54. Moldenhauer Z (2004) Adolescent depression: A primary care pilot intervention study.
55. Phillips J (2005) An evaluation of school-based cognitive-behavioral social skills training groups with adolescents at risk for depression.
56. Puskar K, Sereika S, Tusaie-Mumford K (2003) Effect of the Teaching Kids to Cope (TKC) program on outcomes of depression and coping among rural adolescents. *J Child Adolesc Psychiatr Nurs* 16: 71-80.
57. Reed MK (1994) Social skills training to reduce depression in adolescents. *Adolescence* 29: 293-302.
58. Reynolds WM, Coats KI (1986) A comparison of cognitive-behavioral therapy and relaxation training for the treatment of depression in adolescents. *J Consult Clin Psychol* 54: 653-660.
59. Rohde P, Seeley JR, Kaufman NK, Clarke GN, Stice E (2006) Predicting time to recovery among depressed adolescents treated in two psychosocial group interventions. *J Consult Clin Psychol* 74: 80-88.
60. Rosselló J, Bernal G (1999) The efficacy of cognitive-behavioral and interpersonal treatments for depression in Puerto Rican adolescents. *J Consult Clin Psychol* 67: 734-745.
61. Rosselló J, Bernal G, Rivera-Medina C (2008) Individual and group CBT and IPT for Puerto Rican adolescents with depressive symptoms. *Cultur Divers Ethnic Minor Psychol* 14: 234-245.

62. Seligman ME, Schulman P, Tryon AM (2007) Group prevention of depression and anxiety symptoms. *Behav Res Ther* 45: 1111-1126.
63. Stice E, Burton E, Bearman SK, Rohde P (2007) Randomized trial of a brief depression prevention program: an elusive search for a psychosocial placebo control condition. *Behav Res Ther* 45: 863-876.
64. Stice E, Rohde P, Seeley JR, Gau JM (2008) Brief cognitive-behavioral depression prevention program for high-risk adolescents outperforms two alternative interventions: A randomized efficacy trial. *J Consult Clin Psychol* 76: 595-606.
65. Vazquez FL, Torres A, Blanco V, Diaz O, Otero P et al. (2012) Comparison of relaxation training with a cognitive-behavioural intervention for indicated prevention of depression in university students: A randomized controlled trial. *J Psychiar Res* 46: 1456-1463.
66. Vostanis P, Feehan C, Grattan E, Bickerton W-L (1996) Treatment for children and adolescents with depression: Lessons from a controlled trial. *Clin Child Psychol Psychiatry* 1:199-212.
67. Wood A, Harrington R, Moore A (1996) Controlled trial of a brief cognitive-behavioural intervention in adolescent patients with depressive disorders. *J Child Psychol Psychiatry* 37: 737-746.
68. Beck A, Rush A, Shaw B, Emery G (1979) *Cognitive therapy of depression*. Guilford Press.
69. Brent D, Roth C, Holder D, Kolko D, Birmaher B, et al. (1996) Psychosocial interventions for treating adolescent suicidal depression: A comparison of three psychosocial interventions. In: Hibbs E, Jensen P (edn). *Psychosocial treatment for child and adolescent disorders: Empirically based strategies for clinical practice*. American Psychiatric Press Inc: 187-206.
70. Lewinsohn P, Hoberman H, Teri L, Hautzinger M (1985) An integrative theory of unipolar depression. In: Reiss S, Bootzin R (edn) *Theoretical issues in behavior therapy*. Academic Press: 313-359.
71. Clarke G, Lewinsohn P, Hops H (1990) Adolescent coping with depression course (CWD-A).
72. Clarke G, Lewinsohn P (1995) *Instructor's Manual for the Adolescent Coping with Stress Course*.
73. Ellis A, Harper R (1961) *A guide to rational living*. Wilshire Book.
74. D'Zurilla TJ, Goldfried MR (1971) Problem solving and behavior modification. *J Abnorm Psychol* 78: 107-126.
75. D'Zurilla T, Nezu A (1999) *Problem-solving therapy: A social competence approach to clinical intervention*. (2ndedn), Springer.
76. D'Zurilla T, Nezu A (2007) *Problem-solving therapy: A positive approach to clinical intervention*. (3rdedn), Springer.
77. Hopko DR, Mullane CM (2008) Exploring the relation of depression and overt behavior with daily diaries. *Behav Res Ther* 46: 1085-1089.
78. Lewinsohn PM, Graf M (1973) Pleasant activities and depression. *J Consult Clin Psychol* 41: 261-268.
79. Hopko D, Lejuez C (2008) *A cancer patient's guide to overcoming depression and anxiety: Getting through treatment and getting back to your life*. New Harbinger Publications.
80. Lejuez CW, Hopko DR, Hopko SD (2001) A brief behavioral activation treatment for depression. *Treatment manual*. *Behav Modif* 25: 255-286.
81. Ellis A (1961) *Reason and Emotion in Psychotherapy*. Lyle Stuart.
82. Seligman M (1991) *Learned Optimism*. Knopf.
83. Gillham J, Reivich K, Jaycox L, Seligman M (1995) Prevention of depressive symptoms in schoolchildren: Two-year follow-up. *Psychol Sci* 6: 343-351.
84. Jaycox LH, Reivich KJ, Gillham J, Seligman ME (1994) Prevention of depressive symptoms in school children. *Behav Res Ther* 32: 801-816.
85. Curry J, Wells K, Brent D, Clarke G, Rohde P, et al. (2000) *Treatment for adolescents with depression study (TADS) cognitive behavior therapy manual: Introduction, rationale, and adolescent sessions* (Unpublished manuscript). Duke University Medical Center.
86. Clarke G, Lewinsohn P (1984) The coping with depression course adolescent version: a psychoeducational intervention for unipolar depression in high school students. PM Lewinsohn.
87. Lewinsohn P, Hops H, Williams J, Clarke G, Andrews J (1987) Cognitive behavioral treatment for depressed adolescents. Annual Meeting of the American Academy of Child Psychiatry.
88. Segal Z, Williams J, Teasdale J (2002) *Mindfulness-based cognitive therapy for depression: A new approach to relapse prevention*. Guilford Press.
89. Teasdale JD, Segal ZV, Williams JM, Ridgeway VA, Soulsby JM, et al. (2000) Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *J Consult Clin Psychol* 68: 615-623.
90. Kroll L, Harrington R, Gowers S, Frazer J, Jayson D (1996) Continuation of cognitive-behavioural treatment in adolescent patients who have remitted from major depression. Feasibility and comparison with historical controls. *J Am Acad Child Adol Psychiatry* 35: 1156-1161.
91. Wignall A, Gibson J, Bateman N, Rapee R (1998) *ACE leader's manual*. Sydney Health.
92. Wignall A, Gibson J, Bateman N, Rapee R (1998) *ACE workbook*. Northern Sydney Health.
93. Kowalenko N, Wignall A, Rapee R, Simmons J, Whitefield K et al. (2002). *The ACE Program: Working with schools to promote emotional health and prevent depression*. YSA 21: 23-30.
94. Hannan A, Rapee R, Hudson J (2000) The prevention of depression in children: A pilot study. *Behav Change* 17: 78-83.
95. Beck A (1967) *Depression: Clinical, experimental, and theoretical aspects*. Harper & Row.
96. Lewinsohn P, Antonuccio D, Steinmetz-Breckenridge J, Teri L (1984) *The coping with depression course*. Castalia Press
97. Gordon V, Tobin M (1991) *Insight: A cognitive enhancement program for women*. University of Minnesota.
98. Seligman ME (1975) *Helplessness: On depression, development, and death*. Freeman
99. Copeland M (1992) *The depression workbook*. New Harbinger; 1992.
100. Peden AR1 (1998) The evolution of an intervention—the use of Peplau's process of practice-based theory development. *J Psychiatr Ment Health Nurs* 5: 173-178.
101. Goldstein A, Sprafkin R, Gershaw M, Klein P (1980) *Skillstreaming the adolescent: a structured learning approach to teaching pro-social skills*. Research Press.
102. Goldstein A (1981) *Psychological skill training: The structured learning technique*. Pergamon Press.
103. Rehm L (1977) A self-control model of depression. *Behav Ther*. 8:787-804.
104. Rehm L, Fuchs C, Roth D, Kornblith S, Romano J (1979) A comparison of self-control and assertion skills treatment of depression. *Behav Ther*.10:429-442.
105. Munoz R, Miranda J (1986) *Group manual for cognitive behavioral treatment of depression*. University of California.
106. Gillham J, Jaycox L, Reivich K, Hollon SD, Freeman A et al. (1991) *The apex project manual for group leaders*: Unpublished manual.
107. Reivich K, Shatte A, Gillham J (1991) *Penn resilience training for college students leader's guide and participant's guide*: Unpublished manual.
108. Seligman M, Schulman P, DeRubeis R, Hollon S (1999) The prevention of depression and anxiety. *Prevention & Treatment* 2: 8a.
109. Lewinsohn P (1992) *Control your depression*. Fireside Books.
110. Munoz R, Ying Y (2002) *The prevention of depression: Research and practice*. JHU Press.
111. Stark K (1990) *Childhood depression: School-based intervention*. Guildford Press.
112. Vostanis P, Harrington R (1994) Cognitive-behavioural treatment of depressive disorder in child psychiatric patients: Rationale and description of a treatment package. *Eur Child Adolesc Psychiatry* 3: 111-123.