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Dialectical Behaviour Therapy in Adolescents for Suicide Prevention: Systematic Review of Clinical- Effectiveness

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Dialectical Behaviour Therapy in Adolescents for Suicide Prevention: Systematic Review of Clinical-Effectiveness

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April 2009

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Health technology assessment (HTA) agencies face the challenge of providing quality assessments of medical technologies in a timely manner to support decision making. Ideally, all important deliberations would be supported by comprehensive health technology assessment reports, but the urgency of some decisions often requires a more immediate response.

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Consultations with the requestor of this HTIS assessment indicated that a review of the literature would be beneficial. The research question and selection criteria were developed in consultation with the requestor. The literature search was carried out by an information specialist using a standardized search strategy. The review of evidence was conducted by one internal HTIS reviewer. The draft report was internally reviewed and externally peer-reviewed by two or more peer reviewers. All comments were reviewed internally to ensure that they were addressed appropriately.

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ACRONYMS AND ABBREVIATIONS

BDI-II	Beck Depression Inventory-II
BPD	borderline personality disorder
CBT	cognitive behavioural therapy
DBT	dialectical behaviour therapy
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition
MDT	mode deactivation therapy
RCT	randomized controlled trial
TAU	treatment as usual

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EXECUTIVE SUMMARY

Context and policy issues

Dialectical behaviour therapy (DBT) is a type of cognitive behavioural therapy (CBT) that was originally developed as a treatment for chronically parasuicidal women with borderline personality disorder (BPD). DBT has since been used as a treatment for other populations. The skills training portion of DBT comprises four standard modules including core mindfulness (from Zen Buddhism), distress tolerance with a focus on acceptance, interpersonal effectiveness with a focus on change, and emotional regulation. In addition to skills training, there is also a focus on the acceptance of issues that cannot be changed. Previous evidence suggests that DBT is clinically effective in the treatment of suicide behaviours among adults when DBT is compared with treatment as usual (TAU). This report reviews the evidence regarding the clinical-effectiveness of DBT compared with TAU for the prevention of suicide in adolescents.

Research question

What is the evidence on the clinical-effectiveness of dialectical behaviour therapy for suicide prevention in adolescents (18 years of age or younger)?

Methods

Published literature was obtained by cross-searching MEDLINE, EMBASE, PsycINFO, and ERIC on the OVID search system between 2004 and January 2009. Regular alerts were established and are current to March 9, 2009. Parallel searches were performed on the Cochrane Library (Issue 4, 2008), and University of York Centre for Reviews and Dissemination databases. The websites of health technology assessment and related agencies were also searched, as were specialized databases. The Google search engine was used to search for information on the Internet. Two independent reviewers screened articles for selection.

Summary of findings

Two systematic reviews meeting the inclusion criteria were identified. One randomized controlled trial and four observational studies that were not included in the two systematic reviews were also identified. No health technology assessments met the inclusion criteria.

Systematic reviews and meta-analyses

In 2008, Tarrier et al. published a systematic review and meta-analysis of studies on the use of CBT to reduce suicide behaviour. Included in the review were studies that evaluated a type of CBT and measured self-harm or suicide behaviour as an outcome. Eight of the included studies evaluated DBT. The authors reported a statistically significant treatment effect of DBT.

In a 2005 systematic review, Guilé et al. examined the psychotherapeutic treatment of adolescents with BPD. Included in the review were controlled clinical trials of CBT and psychodynamic therapies. Two of the five studies that met the inclusion criteria evaluated DBT. The control for the studies was TAU with psychotherapy or psychotherapy alone. In the first study, reductions in suicidal ideation, depression, interpersonal sensitivity, and overall psychiatric symptom severity were observed in the DBT group. In the second study, reductions in depressive symptoms, parasuicidal behaviours, and suicide ideation were reported in both groups. The authors of the systematic review concluded that more evidence including controlled trials is needed to gain a more complete understanding of the effect of these therapies on BPD. The authors also highlighted the need for additional studies of adolescents.

Randomized controlled trials

In a 2006 randomized controlled trial, Apsche et al. examined the effectiveness of mode deactivation therapy (MDT) and DBT in a residential treatment centre. Participants had physical aggression, anger, suicide ideation, and mixed personality disorders or traits. Aggressive behaviour was assessed by self-reporting and by centre staff. The Beck Depression Inventory-II scale (designed to measure depression) and the

Reynold's Suicide Ideation Questionnaire were used to perform measurements. The findings suggested that MDT and DBT showed some clinical-effectiveness in reducing symptoms of depression and suicide ideation. The authors reported that MDT was more effective than DBT.

Observational studies

In a 2008 study, James et al. evaluated the effectiveness of DBT treatment that was delivered in a community setting to female adolescents with persistent and severe deliberate self-harm behaviour. The authors reported statistically significant reductions in self-reported depression, hopelessness, and episodes of deliberate self-harm. The authors concluded that there was an improvement in the scores for all post-DBT measures.

Woodberry and Popenoe studied the use of DBT in adolescents with BPD. The investigator reported statistically significant decreases in feelings of "wanting to hurt self" and "wanting to kill self." The authors also reported clinically significant changes in the percentage of those wanting to kill themselves and in the percentage of those never wanting to kill themselves. The authors concluded that DBT is a promising treatment option for adolescents with features of BPD.

In 2007, Goldstein et al. reported the findings of a study assessing DBT for adolescents with bipolar disorder. The patients receiving DBT experienced statistically significant decreases in suicidality, emotional dysregulation, and depressive symptoms. The authors concluded that DBT was a promising treatment option for adolescents with bipolar disorder.

In 2004, Sunseri reported findings from a study assessing the use of DBT for the treatment of deliberate self-harm behaviour among adolescent females in a residential treatment facility. The objective of this study was to assess if DBT could reduce the number of premature terminations of treatment, the number of inpatient hospital days, and the duration of physical restraint and seclusion. Overall, the start of DBT coincided with statistically significant reductions in all the measured parameters.

Conclusions and implications for decision or policy making

The available evidence on the use of DBT in adolescents is sparse, and few high-quality studies were identified during our review. Most of the included studies were small and uncontrolled and evaluated measures pre- and post-treatment. All the included studies reported a measure of clinical-effectiveness for the use of DBT in reducing suicidality, including a reduction in self-harm behaviours and suicide ideation. The results of this review suggest that DBT may be effective in the treatment of suicidality in adolescents with or who are suspected to have BPD or bipolar disorder. However, more evidence is needed from higher-quality studies to confirm these findings. This information, with an evaluation of the long-term effectiveness of DBT on suicidal adolescents and assessments of the cost-effectiveness of DBT, would contribute to the decision-making process of treatment providers and policy makers.

Title: Dialectical Behaviour Therapy in Adolescents for Suicide Prevention: Systematic Review of Clinical-Effectiveness

Date: April 2009

1 CONTEXT AND POLICY ISSUES

Dialectical behaviour therapy (DBT) is a type of cognitive behavioural therapy (CBT) that was originally developed as a treatment for chronically parasuicidal women with borderline personality disorder (BPD).[1] DBT has since been used as a treatment for other populations.[2] Parasuicidal behaviour is considered to be any acute intentionally self-harming behaviour resulting in physical harm with or without an intent to die.[1] This behaviour is also known as suicidal or non-suicidal self-injury. BPD is a condition that is associated with challenges in regulating emotions and difficulty in tolerating emotional distress.[3] Suicidal behaviour is associated with approximately 75% of BPD cases, and approximately 10% of patients with BPD eventually complete suicide.[4]

The skills training portion of DBT comprises four standard modules including core mindfulness (from Zen Buddhism), distress tolerance with a focus on acceptance, interpersonal effectiveness with a focus on change, and emotional regulation.[5] These modules are addressed in individual psychotherapy sessions, in group sessions, through telephone support, and with a consultation team.[5,6] Although skills training is a critical component, DBT focuses not only on change, but also on the acceptance of issues that cannot be changed.[7] Treatment involves a pre-treatment phase that orients the participant and the family to the process and sets goals, followed by an early phase that concentrates on decreasing self-injury and life-threatening behaviours.[8] Later phases focus on addressing emotional experiences from the past and goal setting for self-respect and capacity for joy.[9]

Previous evidence suggests that DBT is clinically effective for the treatment of suicide behaviours in adults with BPD compared with treatment as usual (TAU). It has now been adapted for the treatment of adolescents by including family members in the treatment program and, in some cases, shortening the duration of treatment from the standard of one year for adult participants to a range of 12 weeks to 16 weeks.[10]

In Canada, the suicide rate across all ages is 11.3 per 100,000 people, and the rate for adolescents who are aged 15 years to 19 years is 9.9 per 100,000. This is an increase from the suicide rate of 1.3 per 100,000 in youths who are aged 10 years to 14 years.[11] Youths and adolescents may be an at-risk population at an age when it would be critical to implement early intervention and suicide prevention strategies. This report reviews the evidence regarding the clinical-effectiveness of DBT for the prevention of suicide in adolescents.

2 RESEARCH QUESTION

What is the evidence on the clinical-effectiveness of dialectical behaviour therapy for suicide prevention in adolescents (18 years of age or younger)?

3 METHODS

3.1 Literature Search

Published literature was obtained by cross-searching MEDLINE, EMBASE, PsycINFO, and ERIC on the OVID search system between 2004 and January 2009. Regular alerts were established on MEDLINE, EMBASE, PsycINFO, and ERIC. The information that was retrieved using alerts is current to March 9, 2009. Parallel searches were performed on the Cochrane Library (Issue 4, 2008) and University of York Centre for Reviews and Dissemination databases. Language publication date limits were not applied. Filters were applied to limit the retrieval to health technology assessments,

systematic reviews, meta-analyses, randomized controlled trials, controlled clinical trials, observational studies, and guidelines. The websites of health technology assessment and related agencies were also searched, as were specialized databases such as those of the National Institute for Clinical Excellence, ECRI Institute, and EuroScan. The Google search engine was used to search for information on the Internet.

3.2 Study Selection

From the literature search, we identified 393 published articles that were eligible for inclusion in this report. Two independent reviewers (MM and KC) reviewed the titles and abstracts that were retrieved. Studies assessing DBT in adolescents (18 years of age or younger) were eligible for inclusion in this report. After the initial screening of abstracts, 37 articles were retrieved for further consideration. The same two reviewers independently evaluated the full-text version of these articles and assessed articles for inclusion in this review. We did not perform an independent quality assessment as part of this report. Eight articles were included in this report. Reasons for exclusion were that the reviews did not appear to have performed a comprehensive search (did not include a search of more than one database), did not involve multiple reviewers in the literature selection process, included non-English language articles, addressed a non-adolescent population, or assessed an intervention other than DBT as the objective of the study.

Primary studies involving mixed population studies (adults and adolescents) were excluded. The systematic reviews, however, may have included studies of mixed age groups. The assessment of literature for inclusion was based solely on the methods that were reported in the publications. Any differences in the selection of articles were resolved by discussion and consensus between the reviewers. Studies that met the inclusion criteria and that were previously included in a systematic review were not appraised separately in this report.

HTIS reports are organized so that the higher-quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials (RCTs), controlled clinical trials, and observational studies. Additional articles that did not meet inclusion criteria, but may be of interest, have been included in the appendix.

4 SUMMARY OF FINDINGS

Two systematic reviews meeting the inclusion criteria were identified. One RCT and four observational studies that were not included in the two systematic reviews were also identified. No health technology assessments met the inclusion criteria.

4.1 Systematic Reviews and Meta-analyses

In 2008, Tarrier et al.[12] published a systematic review and meta-analysis of studies in which CBT was used to reduce suicide behaviour. The review included studies that involved all age groups that evaluated a type of CBT, that involved a control group as a comparison such as a TAU group, and that measured self-harm or suicide behaviour as an outcome. Studies that assessed only pre- and post-treatment measures in the intervention group were excluded in the systematic review. The authors' definition of suicide behaviour included completed suicides, suicide attempts, intent or plans to commit suicide, and suicide ideation. After applying inclusion and exclusion criteria, 28 articles were included in the review. Eight of these articles evaluated DBT. Unless otherwise noted, the analysis was performed by pooling data from all 28 studies. Information about the mean ages of study participants was not reported. Information from the bibliography showed that at least two of the eight DBT studies specifically evaluated the treatment in adolescents. A standard DBT program was used in four of the eight studies. This standard DBT program was described as:

> a manualized treatment that combines treatment strategies from behavioural, cognitive, and supportive psychotherapies…. It includes concomitant weekly individual and group therapy that is conducted for one year. Individual DBT applies directive, problem-oriented techniques (including behavioural skill training, contingency management, cognitive modification, and exposure to emotional cues) that are balanced with supportive techniques, such as reflection, empathy, and acceptance…. The emphasis is on teaching patients how to manage emotional trauma rather than reducing or taking them out of crisis…. Group therapy met once each week for two and a half hours and followed a psychoeducational format. Behavioural skills in three main areas were taught as follows: 1) interpersonal skills, 2) distress tolerance/reality acceptance skills, and 3) emotional regulation." (p. 1061)[1]

In a modified version of DBT that was used in the remaining four studies, the treatment was provided in a two-week intensive program, in a program lasting three or six months, or in a hybrid program that combined DBT with psychotherapy and a problem-solving approach.

A random effects model was used for analyses. A meta-analysis was performed on data that were acquired at the end of the treatment period. The end of the treatment period was defined as within three months of completing the intended treatment program. Some studies included a shorter, more intensive program followed by a booster program. In such cases, data that were acquired at the end of the intensive period were considered to be the end-of-treatment data. In the DBT studies, the average duration of treatment was 114.0 hours, and the average number of sessions was 64.1. Sufficient data were available from seven of the eight DBT studies for meta-analysis. The authors reported a statistically significant treatment effect of DBT. The combined effect size for DBT as expressed by using Hedge's *g* was −0.697 (P = 0.002); [95% confidence interval: −1.143 to −0.250]. The authors noted that the conventional DBT program had the longest duration of any of the therapies that were reviewed and suggested that a higher cost would likely be associated with the use of DBT when it was compared with a modified DBT program of shorter duration or with traditional psychotherapy.

In a 2005 systematic review, Guilé et al.[4] examined the psychotherapeutic treatment of adolescents with BPD. Included in the review were controlled clinical trials of CBT and psychodynamic therapies. Two of the five studies that met the inclusion criteria evaluated DBT. One study evaluated a 12-week DBT program. The treatment group had 29 participants with a mean age of 16.1 years, and the control group (n = 82) had a mean age of 15 years. The control was TAU with psychotherapy. Pre-treatment and post-treatment measurements were taken for both groups. The authors of the systematic review stated that there were significant reductions in suicidal ideation, depression or anxiety, interpersonal sensitivity, and overall psychiatric symptom severity that were observed in the DBT group compared with the post-treatment scores in the control group. However, the P value was not reported in the systematic review. No statistically significant differences in the suicide attempt rates between groups were noted. The second study assessed an intensive two-week DBT program (n = 26 participants; age range 14 years to 17 years) compared with psychotherapy treatment (n = 27 participants; age range 14 years to 17 years). The authors of the systematic review stated that there were significant reductions in depressive symptoms, parasuicidal behaviours, and suicide ideation at one year for both groups. However, the P value was not reported in the systematic review. No statistically significant differences were observed in treatment attendance and emergency department visits in either group. This short-term DBT resulted in a reduction (the P value was not reported in the systematic review) in aggressive behaviour compared with the TAU group, as assessed by treatment providers during the treatment period. The authors of the systematic review concluded that more evidence including controlled trials involving CBT (and DBT) is needed to gain a more complete understanding of the effect of these therapies on BPD and its associated traits and behaviours. The authors also highlighted the need for more studies to be conducted in adolescents.

4.2 Randomized Controlled Trials

In a 2006 randomized controlled trial, Apsche et al.[13] compared the effectiveness of mode deactivation therapy (MDT) and DBT in a residential treatment centre for adolescent males (age range: 15 years to 18 years). The 20 participants with physical aggression, anger, suicide ideation, and mixed personality disorders or traits were equally allocated between groups. The DBT program consisted of weekly individual therapy and at least one group skills training session per week. Aggressive behaviour was assessed by self-reporting and by centre staff. The Beck Depression Inventory-II (BDI-II) (designed to measure depression) and the Reynold's Suicide Ideation Questionnaire were used to perform pre- and post-treatment measurements. Baseline BDI-II scores in the DBT and MDT groups were 36.9 and 38.4 respectively (there was no statistically significant difference between baseline scores). The BDI-II score is based on the patient's answers to a 21-question questionnaire. Each answer is scored with a value from 0 to 3. The scores from all questions are tallied, and the cumulative scores are used to assess depressive symptoms: 0 to 13 minimal depression; 14 to 19 mild depression; 20 to 28 moderate depression; and 29 to 63 severe depression.[14] The post-treatment scores were 13.1 ± 6.1 and 8.9 ± 12.9 for DBT and MDT respectively. These results suggested that MDT was more effective at reducing the symptoms of depression than DBT. The baseline mean Reynold's Suicide Ideation Questionnaire scores (as a measure of suicide ideation) were 55.4 and 57.4 for DBT and MDT. The post-treatment scores were 12.97 ± 13.66 and 7.20 ± 7.93 for DBT and MDT respectively. This study's limitations included the small sample size and the randomization methods (coin toss). Despite these limitations, the data suggested that MDT was more effective than DBT in reducing the symptoms of depression and suicide ideation, although both treatment approaches showed some clinical-effectiveness.

4.3 Observational Studies

In a 2008 study, James et al.[5] evaluated the effectiveness of DBT that was delivered in a community setting to female adolescents with persistent and severe deliberate self-harm behaviour. The study was uncontrolled and reported pre- and post-treatment measures. DBT consisted of a once-weekly individual session (one-hour duration), once-weekly group skills training session (1.5-hour duration), and on-going telephone support. The treatment duration was one year. The 16 participants had a mean age of 16.4 years. The assessment tool that was used in the diagnosis of BPD was the Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), which is known as SCID-II. All participants received a score that suggested they likely have BPD. The authors reported, however, that a formal diagnosis of BPD was not typically made until adulthood. A statistically significant ($P < 0.001$) reduction in self-reported depression (assessed using the Beck Depression Inventory), hopelessness (assessed using the Beck Hopelessness Scale), and occurrences of deliberate self-harm and a statistically significant increase in general function (assessed using the DSM-IV Global Assessment of Functioning) were reported. The authors concluded that there was an improvement in the scores for all post-DBT measures.

Woodberry and Popenoe[15] studied the use of DBT in adolescents with BPD. The study was uncontrolled and reported pre- and post-treatment measures. Twenty-eight participants (mean age of 16 years) were included in the study that had a duration of 15 weeks and consisted of individual and group skills training sessions involving family members. Sixty-three per cent of participants completed the study. The authors reported statistically significant decreases in feelings of "wanting to hurt self" ($P = 0.004$) and "wanting to kill self" ($P = 0.001$). The authors also reported clinically significant changes in the percentage of those wanting to kill themselves (a reduction from 32% pre-DBT to 5% post-treatment) and in the percentage of those never wanting to kill

themselves (an increase from 32% pre-DBT to 63% post-treatment). At baseline, 50% of participants wanted to hurt themselves "lots" or "almost all" of the time. This fell to 21% post-treatment. The authors concluded that DBT is a promising treatment option for adolescents with features of BPD.

In 2007, Goldstein et al.[16] reported the findings of a study assessing DBT for adolescents with bipolar disorder. The study was uncontrolled and reported pre-treatment measures and post-treatment measures. The study included 10 participants (mean age 15.8 years; age range 14 years to 18 years). The participants received treatment in an outpatient pediatric bipolar disorder clinic. The treatment, which was delivered over a one-year period, consisted of individual (one-hour duration) and group therapy (two-hour duration). The behavioural outcomes were assessed by the participant, parents, and treatment provider. The same therapist provided the treatment for all participants. Nine patients completed the treatment program. Patients receiving DBT experienced statistically significant decreases in suicidality (P = 0.004), emotional dysregulation (P = 0.02), and depressive symptoms (P = 0.003). There were no differences in the number of medications that were prescribed to patients between the pre- and post-treatment periods. The authors concluded that DBT was a promising treatment option for adolescents with bipolar disorder.

In 2004, Sunseri[3] reported findings from a study assessing the use of DBT for the treatment of deliberate self-harm behaviour among adolescent females in a residential treatment facility. The facility treated patients in-house. The patients who exhibited parasuicidal behaviour or who had attempted suicide were sent for an assessment at a hospital. If the patient was admitted to a psychiatric hospital or unit, the patient often did not return to the residential facility at hospital discharge (a premature termination of treatment). The objective of this study was to assess if DBT could reduce the number of premature terminations of treatment, the number of inpatient hospital days, and the duration of physical restraint and seclusion. The results are presented in Table 1.

Table 1: Measurement of Outcomes of Pre- and Post-Dialectical Behavioural Therapy

Outcome Measure	Pre-DBT	Post-DBT	P value
Premature treatment termination (residents admitted to hospital and not returning to residential care facility)	16.7%	0%	0.04
Mean hospitalization events (adjusted for number of patients in residential care facility during selected times)	1.1 ± 0.12 (SE)	0.35 ± 0.19 (SE)	0.001
Inpatient days (numbers in parentheses represent number of patients in residential care facility during selected times)	71 days (8 patients)	42 days (6 patients)	< 0.001
Mean duration of time restrained or secluded	20 minutes (range 0.5 to 330)	11 minutes (range 0.5 to 330)	< 0.001

DBT = dialectical behavioural therapy; SE = standard error of the mean.

The start of DBT coincided with statistically significant reductions in the number of premature treatment terminations, hospitalization events, number of inpatients days, and the mean duration of time that residents spent in restraints or in seclusion.

4.4 Limitations

Despite the inclusion of all study types in this review, there was a paucity of literature on the use of DBT for the treatment of suicidality in adolescents. No health technology assessments or (non-randomized) controlled clinical trials met the inclusion criteria. One systematic review performed a quality assessment of the included literature.[12] The systematic reviews assessed several therapies (including DBT) or assessed DBT in mixed-age populations. The systematic reviews did not provide complete data abstraction for the included studies. Therefore, for at least one of the systematic reviews,[12] it was not possible to determine how many DBT studies were performed with adolescent participants, and data from all the DBT-based studies that were included in the systematic review were pooled for meta-analysis.

In general, the included studies had a small sample size. Information was provided on concurrent psychiatric disorders, current or past medication use, family history of psychiatric illness, family status (two-parent family, single-parent family, or living away from parents), or socioeconomic status. It is unknown whether these factors influence the effectiveness of DBT. Some studies did not report drop-out rates. In addition, information about the treatment provider(s) in terms of training, experience, credentials, and extent of involvement was lacking in most of the included studies.

The sample size of the one RCT that was included in this report was small. Given the lack of eligible studies, we chose to include pre- and post-treatment studies. Observational studies may not adequately control for potential biases. Without a control group, it is not possible to know the incremental improvements that can be attributed to DBT. All the studies included data that were compiled from self-assessments or from non-blinded assessment by treatment providers. The outcomes that are based on non-blinded assessments are subject to bias. There was a lack of information about the follow-up beyond one year of treatment.

In addition, this review had several limitations. A limited literature search was conducted, and it is possible that studies not published in the databases searched were omitted. Inclusion was based exclusively on the methodological details in the published article, and additional information was not sought from study authors. Therefore, it is possible that studies were excluded. Studies that had been reviewed as part of an included systematic review were not appraised separately for this report. Publications such as books, book chapters, dissertations, and conference abstracts were not eligible for inclusion in this report. These studies may provide additional information about the use of DBT in adolescents.

5 CONCLUSIONS AND IMPLICATIONS FOR DECISION OR POLICY MAKING

All the included studies reported some clinical-effectiveness from the use of DBT in reducing suicidality, including a reduction in self-harm behaviours and suicide ideation. No statistically significant differences were reported in completed suicides among DBT-treated participants. It has been suggested, however, that completed suicides may not be the most reliable outcome measure, because the frequency is low.[12] Instead, suicidality, which represents a continuum from intent and planning to completion, may be more informative.[12] This review did not focus solely on studies of high-risk individuals such as those who had previously harmed themselves deliberately,[17] and the targeted recruitment of such individuals may offer insight into the effectiveness of DBT in this patient population. In addition, studies assessing DBT in a high-risk population may

reveal changes that are not observed in a mixed- or low-risk population.

DBT research is young, and the available evidence on the use of DBT in adolescents is sparse.[5] Most of the studies that were included in this report were small and uncontrolled and evaluated measures pre- and post-treatment. Little high-quality evidence on the clinical-effectiveness of DBT for the prevention of suicide and for the treatment of suicidality was identified in our review. In addition, most of the included studies evaluated the use of DBT for patients with BPD. Less is known about the clinical-effectiveness of DBT in patients with other conditions.[3] More evidence is needed from high-quality studies including prospective RCTs on DBT for the treatment of suicidality in adolescents with BPD and bipolar disorder. In addition, more research is needed to evaluate the effectiveness of DBT when used for other psychiatric conditions that are associated with thoughts of suicide or self-harming behaviour. RCTs should be of an appropriate size to counter the anticipated high drop-out rate.

Other considerations, including access to personnel who are trained in delivering DBT, appropriate facilities for treatment (in-hospital, residential, or outpatient-based), and the costs that are associated with DBT, will likely contribute to the decision of whether DBT should be used to treat adolescents with suicidal thoughts. This report did not assess the cost-effectiveness of DBT. Given the length of treatment (12 weeks to one year), the associated costs may be high.[18] However, one study that examined the effectiveness of DBT in women with BPD noted a statistically significant decrease in hospitalization.[19]

The results of this review suggest that DBT may be effective in the treatment of suicidality among adolescents with or suspected to have BPD and bipolar disorder. More evidence is needed from high-quality studies to confirm these findings. This information, with an evaluation of the long-term effectiveness of the use of DBT among suicidal adolescents and assessments of the cost-effectiveness of DBT, would contribute to the decision-making process of treatment providers and policy makers.

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APPENDIX 1: Additional DBT Studies (not meeting inclusion criteria) that May Be of Interest

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