Dialectical Behaviour Therapy as a Transdiagnostic Treatment for Common Psychiatric Disorders: Study Protocol for a Systematic Review

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Protocol

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Abstract

Background

Dialectical Behaviour Therapy (DBT) is one of the most well-known interventions for treating Borderline Personality Disorder, but has been increasingly adapted for use with other psychiatric disorders. Standard DBT consists of four treatment modes, delivered over the course of a full year. Adaptations made to DBT to suit other patient populations include changes to modes of delivery, treatment length, and other components such as skills modules taught to patients. In some cases, interventions from other evidence-based therapies for specific presenting problems or clinical concerns are incorporated into the treatment. This study aims to synthesize the existing evidence on DBT as a treatment for various types of psychiatric conditions.

Methods

A systematic review and planned meta-analysis will be conducted according to the procedures outlined in the Cochrane Handbook for Systematic Reviews of Interventions (Higgins et al., 2019). Outcomes will be reported following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009). A search strategy was devised to combine domains of various clinical presentations and the treatment approach (i.e., DBT).

Discussion

Results from this study will deepen understanding of the effectiveness of DBT in treating various psychiatric conditions, and the clinical populations with which it would be most appropriate for use.

Systematic review registration

PROSPERO, CRD42020168550

Background

Emotion dysregulation is understood as the inability, even when one's best efforts are applied, to change emotional cues, experiences, actions, verbal responses, and/or nonverbal expressions in a desired way under normative conditions (Linehan et al., 2007). Difficulties with regulating emotions underlie numerous mental health disorders (Bradley et al., 2011; Kring & Sloan, 2010), the most notable being borderline personality disorder (BPD; Carpenter & Trull, 2013). Researchers have also highlighted the critical role of emotion dysregulation in other types of personality disorders (Dimaggio et al., 2017), generalized anxiety (Mennin et al., 2004) other anxiety and mood disorders (Hofmann et al., 2012), posttraumatic stress disorder (PTSD; Tull et al., 2007; Ehring & Quack, 2010), eating disorders (Lavender et al., 2015), substance use disorder (Gratz & Tull, 2010) and childhood disorders such as oppositional defiant disorder (Cavanagh et al., 2014), among others.

Dialectical behaviour therapy (DBT) is a highly structured treatment created by Marsha Linehan (1993, 2015), originally developed to treat suicidality as well as severe emotion dysregulation that predicts suicidal behaviour (Linehan, 1993; Neacsiu, Bohus, & Linehan, 2015). A well-established evidence-based treatment that has become the standard of care in treating BPD (National Institute for Health and Clinical Excellence, 2009; Oldham et al., 2010), DBT has been adapted in recent years for treating various psychiatric disorders that also stem from difficulties with regulating emotions.

Notably, adaptations have been made to DBT for the treatment of PTSD related to child sexual abuse and co-occurring problems in emotion regulation by combining trauma-focused cognitive behavioural techniques with DBT elements (e.g., DBT-PTSD; Steil et al., 2011; 2018). A treatment protocol for treating patients with co-morbid BPD and PTSD has also been developed by Harned and colleagues (2014) by combining standard DBT with another well-researched trauma-focused treatment, prolonged exposure therapy (PE; Foa et al., 2007), known as DBT-PE (Harned et al., 2014). Standard DBT was also adapted for treating substance use disorders to develop DBT-SUD (Linehan et al., 1999; 2002) by incorporating concepts and skills specific to managing substance abuse. Similarly, Lynch (2018a, 2018b) developed Radically Open Dialectical Behaviour Therapy (RO-DBT) to treat disorders of emotional over-control, which is associated with an obsessive-compulsive personality pathology, anorexia nervosa, among other. Systematic reviews examining applications of DBT with intellectual disabilities (McNair et al., 2017) and eating disorders (Bankoff et al., 2012) found some evidence that DBT can be modified to target symptoms unique to these conditions, although further research on efficacy is needed. The overall effect of DBT on such a wide range of clinical concerns have not been investigated in detail, despite it being increasingly employed with many psychiatric and behaviour problems as outlined above.

Aim

This systematic review aims to synthesize the existing evidence on DBT as a treatment for various types of psychiatric conditions. In doing so, this review can provide recommendations on whether DBT is appropriate for use as a transdiagnostic treatment, and further inform the development of DBT or modified-DBT interventions for psychiatric populations.

Review Questions

The effectiveness of DBT-interventions for various psychiatric symptoms will be investigated based on these research questions:

1. What formats of Dialectical Behavioural Therapy (DBT) have been used to treat common psychiatric problems in clinical services?
2. How effective is DBT therapy for treating each of these diagnoses? Treatment efficacy will be determined by clinical significance.

Objectives

We will first outline the range of psychiatric concerns where DBT has been applied in treatment, such as the most common disorders of mood and anxiety, and including co-morbid disorders. Any modifications or adaptations to DBT, specific to the respective patient population will then be examined, followed by the utility of DBT in addressing these patients' psychiatric symptoms.

Methods

Study Design

A systematic review will be conducted according to the procedures outlined in the Cochrane Handbook for Systematic Reviews of Interventions (Higgins et al., 2019). Outcomes will be reported following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009).

Search Strategy

Electronic databases to be searched will include the Cochrane Central Register of Controlled Trials (CENTRAL), PubMed, PsycINFO, SCOPUS, EBSCOhost and ProQuest Dissertations and Theses. Only articles published in English will be included. Both articles in peer-reviewed journals and unpublished (e.g., dissertations) will be included, as long as the inclusion criteria elaborated below are met. Additionally, manual reviews of conference proceedings from a list of conferences recommended for researchers by Behavioural Tech (2019) and of reference lists in relevant papers will also be conducted to identify papers not captured in electronic databases searches. Relevant trials will be searched for on the US National Institutes of Health Ongoing Trials Register (www.clinicaltrials.gov). Corresponding and/or primary authors will be contacted where necessary, to locate any unpublished studies. A search strategy will be devised to combine the following domains: i) clinical presentation; and ii) treatment approach.

Search Terms

A search string was developed in discussion with the study team. Preliminary scoping searches were conducted to identify the number of articles retrieved by specific keywords, including wildcards, in various databases. The proposed search string is listed below:

(“Abus*” OR “Addict*” OR “ADHD” OR “Affect*” OR “Aggressi*” OR "Agitat*" OR “Alzheimer” OR “Anger” OR “Anxi*” OR “ASD” OR “Attenti*” OR “Autis*” OR “Behavior*” OR “Behaviour*” OR "Binge" OR "Binging" OR “Bipolar” OR “Borderline” OR “BPD” OR “Challeng*” OR “Cogniti*” OR “Compulsi*” OR “Conduct” OR “Control” OR "Cope" OR "Coping" OR “Cut” OR “Dementia” OR "Dependen*" OR “Depressi*” OR “Disab*” OR “Disorder*” OR “Distress” OR "Dysregulat*" OR “Eating” OR “Emot*” OR "Empath*" OR "Externalis*" OR "Externaliz*" OR “Function*” OR "Hyper*" OR "Hypo*" OR “Impuls*” OR “Injur*” OR "Internalis*" OR "Internaliz*" OR "Interpersonal" OR "Irritab*" OR “Maladaptive” OR “Mania” OR “Manic” OR "Mental" OR “Mood” OR "Negative" OR “Neuro*” OR “Non-suicidal” OR “NOS” OR “Not otherwise specified” OR “NSSI” OR “Obsessi*” OR “OCD” OR “Offen*” OR “Oppositional” OR “Panic” OR “Para-suicidal” OR "Patholog*" OR “Personality” OR “Phobia” OR “Posttraumatic” OR “Post-traumatic” OR “Problem*” OR “PTSD” OR

“Psychological” OR “Psychopath*” OR “Psychosis” OR "Psychosocial" OR “Psychotic” OR "Regulat*" OR “Quality of life” OR “Risk*” OR “Schizo*” OR " Self-esteem" OR "Self-harm*" OR "Shame" OR "Social" OR "Socio-emotional" OR “Stalk*” OR “Stealing” OR “Stress” OR “Suicid*” OR “Substance” OR “Symptom*” OR “Theft” OR “Trait*” OR “Trauma” OR “Trichotillomani*” OR “Violen*” OR “Well-being”)AND (“DBT” OR “Dialectical Behaviour Therapy” OR “Dialectical Behavior Therapy” OR “Dialectical Behavioural Therapy” OR “Dialectical Behavioral Therapy”)

Selection Criteria

Types of participants. Participants of all ages and in any clinical or health setting (including community settings) will be included in the review. There will be closer examination of whether these studies involve participants with a diagnosis of a psychiatric illness using any recognized diagnostic criteria such as the Diagnostic and Statistical Manual of Mental Disorder, Fifth Edition (DSM-5; American Psychiatric Association [APA], 2013) or the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10; World Health Organisation [WHO], 1993). Studies involving participants with subclinical symptoms, or reporting clinically significant distress, will also be included. Studies involving non-clinical participants will be excluded.

Types of studies. Studies that report quantitative data, and involve pre-post measures for symptom severity. This includes randomized controlled trials (RCTs) and quasi-experimental studies. Trials comparing DBT with other treatments will also be eligible for inclusion in the review. Review articles will be collected in order to review the reference list and will not contribute to the total number of studies, unless these also report original data. Single-sample case studies and case reports will be excluded. There will be no date restrictions.

Types of Intervention. DBT, which was originally developed by Marsha M. Linehan (1993) for the treatment of suicidal persons. The comprehensive DBT treatment (also referred to as “standard DBT”) consists of four treatment modes i.e., individual therapy, telephone coaching, the therapist consultation team and DBT group skills training (often referred to as simply skills training; it is delivered over 26 weeks in standard DBT). However, with standard DBT being costly and resource-intensive, many clinical settings are delivering partial DBT, such as skills training only. As such, studies employing at least one or more of the four treatment modes will be included in this review, as well as any modifications to or adaptations of DBT. These may include skills training conducted on an individual basis, the length of therapy or skills training, self-guided skills training, etc. Integrative therapies, or a different therapy that incorporates elements of DBT will be excluded.

Comparator. Control conditions can comprise of a participant group receiving no interventions, treatment as usual (TAU), or other types of treatment apart from DBT, as well as wait-list controls. Differences in effect sizes will be assessed based on the type of control groups studied, if there is significant heterogeneity in the effect sizes.

Types of outcomes

Primary outcome. Treatment effects on measures of psychiatric symptom severity or distress that are psychometrically validated, based on self-report by patients. This would include reported symptoms of depression, anxiety, BPD, substance use disorder, eating disorders or other disorders that are being examined in the studies that are included. The outcome measures used to assess for symptoms of each clinical condition will be noted, including whether full scales or subscales were administered. The measures that are employed by the majority of the included studies will be used in the analysis.

Secondary outcomes. Where relevant, behavioural measures that are reported can be used to track treatment outcome (e.g., DBT diary cards, tracking of specific behaviours such as frequency of non-suicidal self-injury or binge eating episodes). Other data on resource use (e.g., economic costs of providing the intervention or human resources and time), process outcomes (e.g., utilisation or attrition rates), and unintended adverse consequences of interventions will also be recorded, if available.

Data extraction and management

All steps taken by the reviewers will be documented by recording the search terms used, dates of searches, and number of findings for each database. If required, screenshots of searches will be saved. After searches are conducted based on title, abstract and keywords within the above-stated electronic databases, articles will be uploaded to EndNote, and duplicate references will be removed. Articles identified through hand-searches (e.g., of reference lists) will be considered for inclusion into data synthesis based on their title. The abstracts of articles will first be screened using the open-source software, Abstrackr (Wallace et al., 2012), to ensure that they meet the inclusion criteria. Two independent reviewers will screen the articles for inclusion based on a pre-determined rubric, and any discrepancies will be resolved in consultation with a third-party. Reasons for excluding any studies will be logged. After the initial abstract screening, the remaining articles will be similarly screened again for inclusion by two independent reviewers using the full text instead of just the abstract. Then, data will be collected from the remaining articles using a pre-determined data extraction guidebook. Each article will be read by only one reviewer for data collection, but a random sample making up 10% of the data will be spot-checked for validation purposes.

Both reviewers will perform data extraction independently, using a data extraction form. The following data will be extracted from studies meeting inclusion criteria:

1. Study characteristics (title, authors, year of publication, country, language, treatment setting, sample size and demographics including baseline characteristics)
2. Study methodology and results (study design, intervention description, comparisons or control groups, duration of therapy and number of sessions, study completion rates, treatment outcome measures and measurement time-points, suggested mechanisms of the intervention, limitations or information for assessing risk of bias). It will be noted, whether the information obtained (i.e., means, SDs and sample size at baseline, end of treatment, and follow-up) is sufficient for calculation of an effect size.

Study authors will be contacted in the event of missing data on methods or results, and correspondences will be tabulated.

Risk of bias (quality) assessment

The same reviewers will assess studies for methodological validity. Reports that used the same sample of patients will be identified by looking at sample characteristics of participants and intervention descriptions.

Risk of bias will be assessed based on the Cochrane Risk-of-Bias tool for randomized studies, version 2 (RoB 2; Sterne et al., 2019) and the Risk Of Bias In Non-Randomized Studies – of Interventions (ROBINS-I; Sterne et al., 2016) for non-randomized studies. If there are discrepancies between reviewers as to which would be the appropriate tool to use for a particular study, a consensus will be reached through joint discussion with a third person.

Sensitivity analyses are will be conducted to investigate potential sources of heterogeneity, such as:

1. Possible differences if grey literature was included or not;
2. Possible differences if studies with high attrition (dropout rates to be determined after the systematic review) were removed;
3. Possible differences between standard DBT, versus DBT using 1 to 3 (out of 4) treatment modes;
4. Possible differences between the types of other adaptations made to standard DBT;
5. Possible differences between types of control conditions utilized in the included studies.

Data analysis

Data synthesis. A qualitative synthesis will include a flow diagram as per PRISMA guidelines (Moher et al., 2009), then describe the clinical and methodological characteristics of the included studies (tabular information will be provided where appropriate), strengths and limitations of individual studies and patterns across studies, how results could be biased, and the relationship between study characteristics and reported findings. The relevance of included studies to the populations, settings, comparisons, and outcomes of interest will also be discussed. A kappa coefficient for the inter-rater reliability of study coding will be calculated.

Measures of treatment effects. Forest plots will be developed for studies, grouped by the psychiatric condition or problem being treated. Depending on the number of studies included and their heterogeneity, we will pool the results of between-subjects studies using a random effects model to examine clinical effectiveness. Standardized means differences will be calculated from the continuous data (from various measures of symptom severity) generated by each included study, together with their 95% confidence intervals and two-sided p values, as screening of the literature has found that the scales used to measure some constructs (e.g., symptom severity for bipolar disorder) are likely to differ. Heterogeneity will be evaluated using the Cochran's Q (where a significant Q value shows that the variation among studies is

attributable to heterogeneity instead of chance) and the I^2 statistic (where larger I^2 values indicate higher heterogeneity).

If there is high methodological diversity and a meta-analysis is unable to be performed for any reason, tables of the quantitative results will be presented. Heterogeneity will then be explored further by performing subgroup analyses on the variables such as diagnosis, types of DBT-interventions (e.g., standard DBT versus selected DBT treatment modes), age group (children and adolescents versus adults), treatment setting, and study design (e.g., RCT versus others).

Assessment of reporting bias. The funnel plot will be used for an assessment of reporting bias. The strength of evidence for the effect found will rely on additional assessments of the study design and risk of bias. We will refer to Egger's test of intercept. Possible reasons for any asymmetry in the relationship between effect size and study power will be discussed.

Discussion

Findings would expand current knowledge on DBT programs and interventions, informing on treatment potential and/or benefits of DBT skills training for common psychiatric symptoms. A systematic review of the literature on DBT will hopefully aid in increasing effective DBT implementation in newer services in the future, as many clinical settings are choosing to adapt instead of fully adopt the standard DBT treatment, mostly due to logistical and manpower constraints.

Amendments

Should protocol amendments be required in the future, all authors will need to agree upon any changes. The specific change(s) and rationale for change(s), if any, will be logged in a Microsoft Word document that is shared by the study team. If the protocol is already published, an amendment will be submitted for publication.

List Of Abbreviations

- Borderline personality disorder (BPD)
- Posttraumatic stress disorder (PTSD)
- Dialectical behaviour therapy (DBT)
- Dialectical behaviour therapy adapted for the treatment of posttraumatic stress disorder (DBT-PTSD)
- Prolonged exposure therapy (PE)
- Standard dialectical behaviour therapy combined with prolonged exposure therapy (DBT-PE)
- Dialectical behaviour therapy for substance use disorder (DBT-SUD)
- Radically open dialectical behaviour therapy (RO-DBT)
- Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)

- Diagnostic and Statistical Manual of Mental Disorder, Fifth Edition (DSM-5)
- American Psychiatric Association (APA)
- 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10)
- World Health Organisation (WHO)
- Randomized controlled trials (RCTs)
- Treatment as usual (TAU)

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Availability of data and materials

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

MYLT conceptualized the study and drafted the manuscript. All authors jointly designed the study, and BM substantively revised the manuscript. All authors read and approved the final manuscript.

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- PRISMAPChecklistforDBTSR.docx