Review

Acceptance and commitment therapy – Do we know enough? Cumulative and sequential meta-analyses of randomized controlled trials

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Thomas Hacker [a,*], Paul Stone [b], Angus MacBeth [c]

[a] Universitätsmedizin Rostock, Germany
[b] NHS Fife, Scotland, United Kingdom
[c] University of Edinburgh, Scotland, United Kingdom

A B S T R A C T

Acceptance and Commitment Therapy (ACT) has accrued a substantial evidence base. Recent systematic and meta-analytic reviews suggest that ACT is effective compared to control conditions. However, these reviews appraise the efficacy of ACT across a broad range of presenting problems, rather than addressing specific common mental health difficulties. Focussing on depression and anxiety we performed a meta-analysis of trials of ACT. We incorporated sequential meta-analysis (SMA) techniques to critically appraise the sufficiency of the existing evidence base. Findings suggest that ACT demonstrates at least moderate group and pre-post effects for symptom reductions for both anxiety and depression. However using SMA findings are more qualified. There is currently insufficient evidence to confidently conclude that ACT for anxiety is efficacious when compared to active control conditions or as primary treatment for anxiety. Similarly, using SMA, there is currently insufficient evidence to suggest a moderate efficacy of ACT for depression compared to active control conditions. To stimulate further research we offer specific estimates of additional numbers of participants required to reach sufficiency to help inform future studies. We also discuss the appropriate strategies for future research into ACT for anxiety given the current evidence suggests no differential efficacy of ACT in the treatment of anxiety compared to active control conditions.

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Contents

* Correspondence to: Klinik und Poliklinik für Psychiatrie und Psychotherapie Gehlsheimer, Straße 20 i, 18147 Rostock, Germany.
  E-mail address: Thomas.hacker@med.uni-rostock.de (T. Hacker).

1. Introduction

Within the last decade third wave treatment approaches (Hayes, 2004a) have widened the spectrum of evidence-based psychological treatments, particularly in relation to mental health conditions deemed longstanding, complex or treatment resistant. 'Third wave' therapies have gained currency as an alternative to more established models of cognitive behavioural therapy (CBT) (e.g. Beck, 1963) via a relatively greater emphasis on context and experiential facets of psychological experience.

Third wave cognitive behavioural therapies include among others Dialectical Behavioural Therapy (DBT, Linehan, 1993 Mindfulness Based Cognitive Therapy (Segal et al., 2012), Compassion Focused Therapy (Gilbert, 2004), and Acceptance and Commitment Therapy (ACT, Hayes, et al., 1999). The third wave therapies also make explicit attempts to balance a coherent theoretical underpinning with a commitment to empirical testing.

Controlled trials have suggested efficacy for ACT in the treatment of depression, mixed depression and anxiety, physical health problems and psychotic disorders. Meta-analyses of randomized controlled trials of ACT have suggested a moderate to large effect size on primary outcomes measures after treatment and at follow-up (Hayes et al., 2006; Öst, 2008; Powers, Zum Vorde Sive Vording and Emmelkamp, 2009, Ruiz, 2010, 2012). A recent meta-analysis of ACT by Ruiz (2012) concluded that ACT outperformed CBT (Hedges $g=0.4$). However, the debate regarding the differential efficacy of ACT compared to other evidence-based psychological interventions is ongoing (e.g. Hofmann and Asmundson, 2008, 2010; Ost, 2009). The proliferation of third wave approaches raises questions for clinicians and policy makers (and clients/service users) regarding which therapeutic intervention is of optimal benefit for a given disorder or difficulty. This is especially important to the development of clear guidelines for the evidence-based practice of psychological interventions.

Existing evidence from systematic and meta-analytic reviews provide qualified support for the effectiveness of ACT as a psychological intervention when compared with no intervention (Ruiz, 2012; Powers et al., 2009). However, the data with regards to ACT in comparison to other psychological therapies are more equivocal. Therefore, clinicians, health service commissioners and policy makers at present must judge whether the evidence base for ACT is sufficient to make a confident recommendation regarding its efficacy. Borrowing from public health research (Muellerleile and Mullen, 2006; Wetterslev, Thorlund and Gluud, 2008), a novel statistical approach to this question is the appraisal of the sufficiency of the available cumulative knowledge. Where the total cumulative knowledge is still emerging, meta-analytic findings are at risk of false positives or false negatives due to methodological weaknesses such as power, random errors or systematic error (e.g. Kuppens et al., 2011). Sequential meta-analysis (SMA; Pogue and Yusuf, 1997) uses group sequential boundaries based on the alpha spending function to measure the accumulation of knowledge across studies, enabling decisions on the sufficiency of knowledge to recommend treatment to be made

based on statistical properties. This approach, commonly used in the evaluation of medical interventions (e.g. Devereaux et al., 2005; Wetterslev et al., 2008) is under-utilised in the evaluation of psychological therapies. Although of potential benefit to evaluation of all evidence based psychological therapies we choose in this review to focus on ACT as an example of an emerging psychological therapy with a commitment to evidence-based practice.

In view of the above, our primary aim was to quantitatively review outcomes of ACT interventions for anxiety and depression using two complementary statistical approaches. Firstly, using cumulative meta-analytic techniques (CMA), we reviewed the evidence for ACT as a psychological intervention for anxiety and depression in group and pre-post comparisons. Secondly, we reviewed the evidence for the same conditions using sequential meta-analytic techniques (SMA). Use of SMA enabled us to make an estimate of the sufficiency of the evidence base for ACT. Secondary aims were to investigate the efficacy of ACT when compared against active treatments and when anxiety or depression were predetermined target outcomes. Regarding the primary aims we hypothesise that there is sufficient evidence to suggest that ACT is efficacious in the treatment of anxiety and depression. With regards to SMAs, to the best of our knowledge, this is the first time that a sequential meta-analytic approach has been used to appraise the sufficiency of evidence of ACT. Therefore no specific hypotheses were made.

2. Method

Our quantitative review followed two stages. Firstly the literature was systematically searched to identify the study sample and to extract data. Secondly, the data was analysed using meta-analytic techniques. This stage incorporated conventional cumulative meta-analyses for ACT for anxiety or depression in group and pre-post comparisons, sequential meta-analyses for these conditions and lastly, subgroup analyses in which ACT was compared with active treatments and in conditions were anxiety or depression were predetermined treatment outcomes.

2.1. Literature search

2.1.1. Eligibility criteria

A systematic literature search was conducted to identify potential studies, following PRISMA guidelines (Moher, Schulz and Altman, 2008). Studies were included if they (1) investigated a manualised ACT approach, (2) used a randomised control design, (3) assessed anxiety or depressive symptoms using standardised outcome measures.

Studies were excluded if they (1) were not published in English, (2) did not include a standardised measure of anxiety or depression, (3) did not use an RCT methodology, or 4) were not published in a peer-reviewed publication, e.g. conference abstracts, book chapters, dissertations.