



Contents lists available at ScienceDirect

Behaviour Research and Therapy

journal homepage: www.elsevier.com/locate/brat

Departing from the essential features of a high quality systematic review of psychotherapy: A response to Öst (2014) and recommendations for improvement



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ARTICLE INFO

Article history:

Received 5 September 2016

Received in revised form

12 February 2017

Accepted 24 May 2017

Available online 29 May 2017

Keywords:

Treatment efficacy

Randomized clinical trials

Acceptance and commitment therapy

Cognitive behavior therapy

Research methodology

Empirically based treatments

ABSTRACT

Öst's (2014) systematic review and meta-analysis of Acceptance and Commitment Therapy (ACT) has received wide attention. On the basis of his review, Öst argued that ACT research was not increasing in its quality and that, in contradiction to the views of Division 12 of the American Psychological Association (APA), ACT is "not yet well-established for any disorder" (2014, p. 105). We conducted a careful examination of the methods, approach, and data used in the meta-analysis. Based in part on examinations by the authors of the studies involved, which were then independently checked, 91 factual or interpretive errors were documented, touching upon 80% of the studies reviewed. Comparisons of Öst's quality ratings with independent teams rating the same studies with the same scale suggest that Öst's ratings were unreliable. In all of these areas (factual errors; interpretive errors; quality ratings) mistakes and differences were not random: Öst's data were dominantly more negative toward ACT. The seriousness, range, and distribution of errors, and a wider pattern of misinterpreting the purpose of studies and ignoring positive results, suggest that Öst's review should be set aside in future considerations of the evidence base for ACT. We argue that future published reviews and meta-analyses should rely upon diverse groups of scholars rather than a single individual; that resulting raw data should be made available for inspection and independent analysis; that well-crafted committees rather than individuals should design, apply and interpret quality criteria; that the intent of transdiagnostic studies need to be more seriously considered as the field shifts away from a purely syndromal approach; and that data that demonstrate theoretically consistent mediating processes should be given greater weight in evaluating specific interventions. Finally, in order to examine substantive progress since Öst's review, recent outcome and process evidence was briefly examined.

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1. Introduction

The evidence base for the efficacy of Acceptance and Commitment Therapy (ACT) is substantial. ACT is currently listed on the APA Division 12 website as having strong research support for chronic pain and modest research support for depression, mixed

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anxiety, obsessive compulsive disorder, and psychosis. The website of the Association for Contextual Behavioral Science (https://contextualscience.org/ACT_Randomized_Controlled_Trials) currently lists 171 randomized trials and several dozens more are as of yet uncatalogued because they exist only in non-English versions. Entering even a short list of ACT relevant subject terms in the Web of Science leads to the identification of well over 1000 articles.

Such a large body of extant research, about 80% which has been produced in the last five years, has led to a series of efforts to summarize and evaluate the ACT and acceptance-based behavior therapy literature and to consider its implications. At least 14 meta-analyses of ACT have appeared since 2009 (see https://contextualscience.org/state_of_the_act_evidence). A recent meta-analysis in the area of anxiety and depression using sequential meta-analytic techniques (Hacker, Stone, & MacBeth, 2016) found that ACT had reached “sufficiency” (i.e. a point at which further research is unlikely to reveal different conclusions) for a large within-treatment effect and a moderate between-group comparison effect in most areas at posttreatment but not superiority over existing evidence-based methods. A-Tjak et al. (2015) and Powers, Zum Vorde Sive Vording, and Emmelkamp (2009) conducted independent meta-analyses and found similar results across a wider range of mental health problems with ACT outperforming control conditions at posttreatment and follow-up for primary outcomes, but with no significant difference from traditional cognitive behavioral therapy (CBT) more generally. Ruiz (2012), in a meta-analysis focused specifically on comparing ACT to CBT, found that ACT outperformed CBT overall, for depression and for quality of life in the studies analyzed. A recent targeted meta-analysis of studies of substance use disorders (Lee, An, Levin, & Twohig, 2015) found that ACT was statistically superior to active treatment comparisons including CBT, but not when CBT alone was considered. Meta-analyses have also shown that the treatment components of the psychological flexibility model (e.g. acceptance, mindfulness, values) underpinning ACT produce positive and sometimes additive effects (Levin, Hildebrandt, Lillis, & Hayes, 2012).

Against this backdrop, a review by Öst (2014) stands out for its conclusions regarding ACT research. Öst (2014) concluded that the average quality of research in ACT was not improving based on a methodological scale that he developed. In contrast to these conclusions, A-Tjak et al.'s (2015) meta-analysis found that ACT research was improving methodologically according to the same scale. In a recent commentary comparing Öst (2014) with A-Tjak et al.'s (2015) analysis, Hertenstein and Nissen (2015, p. 250) suggest: “It is apparent that the two meta-analyses reach strikingly contrasting conclusions, calling for a critical investigation of the potential reasons for this difference.” That is the purpose of the present article.

Gaudio's (2009a) re-visiting of Öst's (2008) original meta-analysis demonstrates that *average* methodological scores alone do not say much about a research program. The primary question is whether enough high quality studies are available to establish robust scientific conclusions. Methodological ratings thus become most relevant in weighing the additive effects of several studies and their strengths and weaknesses. Such a use of methodological analysis requires very careful attention to the small details. Study-by-study, the ratings need to be relevant, reliable, and examined in detail, rather than in a global or “all-or-none” fashion.

An interest in such details is important in part because Öst (2014) argued broadly that the degree of research evidence for ACT has been systematically over-estimated by the Society of Clinical Psychology (Division 12 of the American Psychological Association) across all disorders it has reviewed. Öst (2014, p. 105) concluded: “ACT is not yet well-established for any disorder.” Web of Science shows that the 2014 meta-analysis has already been

cited 56 times (the 2008 review has been cited 203 times). Its conclusion stands in juxtaposition to meta-analyses concluding sufficiency has been reached in some key areas (Hacker et al., 2016), the inclusion of ACT on the Substance Abuse and Mental Health Services Administration's National Registry of Evidence-based Practices and Procedures, and the decision by the U.S. Veterans Administration to deploy ACT as an evidence-based method, and to inclusion on the Division 12 evidence-based therapy list itself for multiple specific conditions.

Scholarly criticism is important in science. Indeed, the society of professionals who are primarily responsible for developing ACT, the Association for Contextual Behavioral Science (ACBS; www.contextualscience.org), has several times had Öst speak about his concerns at ACBS conferences, resulting in useful debate and discussion of the issues. Unfortunately, an examination of the Öst (2014) review suggests that there may have been departures from standard practice for systematic reviews as we detail below. These departures from standard practice appear to have contributed to errors across all sections of Öst's review, and to a variety of conclusions that seem to be objectively unjustified in light of the evidence.

In preparing this response, we first asked all lead study authors to comment on their own studies. We then checked the original papers to verify and confirm possible errors in Öst's (2014) analysis. In most cases the author claims were included in this response. The authors reported errors for 48/60 (80%) of the studies. There were 50 errors in Öst's (2014) Table 1 alone (6.4% of the total figures reported; see Appendix A) which summarized the methodological specifics of the studies. These were all errors of fact, not interpretation. We have only included errors where the correct facts were reported in the original paper: statements that were shown to be incorrect by additional information that was not in the original manuscript, were counted as being accurately reported. While many of these errors might seem minor if they were just reported in Öst's (2014) Table 1, the majority of them were against ACT and it seems likely that these errors were also reflected in his meta-analysis and estimates of effect sizes. For example, Öst claimed there was no follow-up data for five studies that in fact did report follow-up data. Presumably, this also meant that incorrect figures were used in the effect size calculations for the meta-analysis (we will explain below why we are using the word “presumably”). The situation appears to be worse for the more interpretive sections of the review such as Öst's (2014) Tables 11 and 12 (see Appendix B) where we estimate approximately 12% of the reported figures are incorrect. In this area, we found that all of the errors of interpretation were against ACT.

The present article argues that the pattern and magnitude of errors are serious enough that both the content of Öst's (2014) review and the process used to create it should now be set aside in making decisions regarding the treatment efficacy of ACT and in planning further examinations of this literature. The present paper will also briefly discuss the issues surrounding the development of useful criteria for assessing quality of research across different psychotherapeutic traditions, and will note additional criteria that we believe have been minimized or left out. Finally, we will summarize briefly the current state of the evidence for three disorders that have been most intensively studied.

Providing evidence of error is inherently very detailed work. While we will try to be succinct, in order to evaluate the correctness of our conclusions the reader will need to tolerate exposure to details that are important primarily when viewed as an overall pattern. Our intention here is to provide sufficient evidence of the problems so that readers can make their own scientific judgment of the 2014 review and so that future recommendations can be made.

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