

Development and Validation of a Brief Measure of Therapeutically-Induced Change

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Background: A premise of cognitive behavioural treatment is that individuals make cognitive, behavioural and situational changes prompted by interventions and that these changes bring about improvements in targeted outcomes. **Aims:** The present project set out to provide reliability and validity information for a brief measure of therapeutically induced change. **Methods:** A total of 281 participants, comprising three samples who took part in three different intervention studies, completed items relating to cognitive, behavioural and situational changes and completed measures relating to the intervention in which they participated. **Results:** The internal consistency of the scale assessing therapeutically induced change was high in the three samples. The scale showed evidence of validity through association with (1) more involvement in an intervention (2) reporting that an intervention was meaningful (3) being instructed to incorporate insights gained from an intervention into one's daily life (4) greater decreases in psychological distress and negative affect from pre-intervention to post-intervention, and (5) greater increases in positive affect from pre-intervention to post-intervention. **Conclusions:** The therapeutically-induced change scale may have utility as a process measure in various interventions.

Keywords: Cognitive-behavioural, intervention, treatment, therapy, change process.

Introduction

An aim of many cognitive behavioural intervention approaches is to induce changes in individuals' thinking, behaviours, and choice of situations in order to bring about improvements in an outcome (Beck, 1995; Dobson and Dobson, 2009). Changes in the outcome targeted by cognitive behavioural approaches, such as psychological distress or pain, generally assess the effectiveness of cognitive behavioural interventions. Some therapeutic process variables, such as compliance with homework assignments, may mediate the impact of an intervention on the outcome variable. Process variables previously studied include level of client engagement in treatment, changes in cognition, and self-efficacy for overcoming a problem. Cognitive behavioural theory (Beck, 1995; Dobson and Dobson, 2009) postulates that changes made in thoughts, behaviours and situational choices are important process variables. A brief, reliable and valid measure of overall changes made in thoughts, behaviours

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and situational choices in response to interventions would be useful for both researchers and practitioners. The present paper describes the development of such a brief measure of intervention-related overall cognitive, behavioural, and situation change and presents preliminary reliability and validity information for the scale.

Method

Scale development

Items were derived from literature on cognitive behavioural theory and therapy. The following three items assessed core dimensions of cognitive behavioural approaches to inducing change: “To what extent did [*insert name of intervention*] lead you to change your thinking (your attitudes, how you think, what you believe)?”; “To what extent did [*intervention*] lead you to change what you did or how you acted or behaved?”; and “To what extent did [*intervention*] lead you to change some situation?” Respondents rated each item on a 7-point scale where 1 = not at all, 2 = slightly, 3 = between slightly and moderately, 4 = moderately, 5 = between moderately and very much, 6 = very much, and 7 = extremely.

Participants, procedure and measures

Sample One. One hundred and nine participants (mean age 43.62, $SD = 13.16$) who participated in a study (Green and Malouff, 2007) focusing on the effect of bibliotherapy through use of self-help books rated the three items in relation to the self-help book they had used. Participants also rated to what extent they had involved themselves in the bibliotherapy and how much improvement had resulted from the bibliotherapy.

Sample Two. In this study 188 participants (average age 45.02, $SD = 15.46$) who took part in an intervention study examining the effect of expressive writing (Schutte, Searle, Meade and Dark, in press) rated the three items in relation to the effect of the expressive writing. Participants also rated how meaningful the writing was to them. In this study, half of the participants were randomly assigned to a condition explicitly instructing participants to try to incorporate insights gained from the expressive writing into their daily lives. Participants reported their positive and negative affect on the Positive and Negative Affect Schedules before and after the intervention.

Sample Three. The participants in this sample suffered from tinnitus (Malouff, Noble, Schutte and Bhullar, 2010). The 54 participants in an intervention group (average age 59.07, $SD = 12.05$) rated the three items in relation to the effect of using exercises described in a cognitive behaviourally-based book. The participants completed pre- and post-intervention the GHQ-12, a measure of general psychological distress, as well as the three items before.

Results

Internal consistency

The three items were summed to create the Therapeutically-Induced Change Scale. Internal consistency of the scale, as assessed by Cronbach’s alpha, was .87 for the participants in the

Table 1. Means and standard deviations for the Therapeutically-Induced Change Scale

Sample	Total sample			Women			Men		
	Mean	SD	N	Mean	SD	n	Mean	SD	n
Bibliotherapy	12.03	4.17	109	12.28	4.19	90	10.90	3.97	19
Expressive writing	9.70	4.63	188	10.16	4.69	141	8.32	4.20	47
Tinnitus	7.91	4.47	54	7.77	4.78	26	8.04	4.26	28

bibliotherapy study, .90 for the participants in the expressive writing study, and also .90 for the participants in the tinnitus study.

Descriptive information for the Therapeutically-Induced Change Scale

Table 1 shows total means and standard deviations for the scale for three samples and scores for men and women. There was no significant difference between the scores of men and women in the bibliotherapy sample or the tinnitus sample. Women scored significantly higher than men in the expressive writing sample, $t(186) = 2.39, p = .018$.

Age was not related to scores on the scale in the bibliotherapy study sample, $r(106) = .13, p = .19$ nor in the tinnitus study sample, $r(53) = -.05, p = .71$. In the expressive writing sample, younger participants scored higher on the scale than older participants, $r(187) = -.25, p = .001$.

Validity

The more participants in the bibliotherapy study reported involving themselves in the strategies described in the bibliotherapy book, the higher they scored on the scale, $r(85) = .74, p = .001$. The more meaningful participants in the expressive writing study reported their writing to be, the higher they scored on the scale, $r(187) = .60, p = .001$.

In the expressive writing study, one of the writing instruction conditions directed participants to incorporate what they gained from the writing into their daily lives. The participants who received these instructions scored significantly higher ($M = 10.58, SD = 4.59$) on the scale than those not given these instructions ($M = 8.87, SD = 4.53$), $t(186) = 2.58, p = .01$.

For participants in the bibliotherapy study, the higher their scale score, the greater the improvement in the problem for which they used a self-help book, $r(84) = .73, p = .001$. The higher participants in the intervention condition of the tinnitus study scored on the scale, the greater their reduction in psychological distress from pre-test to post-test, $r(53) = .39, p = .004$. The higher participants in the expressive writing study scored on the scale, the greater their increase in positive affect from pre-test to post-test $r(185) = .22, p = .003$ and the greater their reduction in negative affect $r(184) = .24, p = .001$.

Discussion

The three-item measure of therapeutically induced change showed high internal consistency and evidence of validity. Higher scores on the scale were associated with (1) more involvement

in an intervention (2) reporting that an intervention was meaningful (3) being instructed to incorporate insights gained from an intervention into one's daily life (4) greater decreases in psychological distress and negative affect from pre-intervention to post-intervention, and (5) greater increases in positive affect from pre-intervention to post-intervention. The measure may have potential for use in treatment studies and clinical practice.

Future research might explore the utility of the Therapeutically-Induced Change Scale in assessing cognitive, behavioural and situational changes made as a result of an intervention for different types of treatments, with different populations, and for different types of target outcomes. Future research might also explore the usefulness of the scale as a brief assessment given by practitioners to clients to chart the extent to which clients make changes in their daily lives.

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