



## The impact of psychological distress tolerance in the treatment of depression



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### ABSTRACT

Distress tolerance refers to the perceived ability to experience and withstand negative emotional states. Minimal research has investigated distress tolerance in the context of mood disorders despite poor emotional coping featuring in theoretical models of depression. The aims of the current investigation were to identify the relationship between psychological distress tolerance and depression, and to evaluate the impact of distress tolerance on treatment adherence and outcome following an internet-based cognitive behavioural therapy (iCBT) program for depression (the Sadness Program). Study 1 included 75 patients prescribed the Sadness Program by their primary care practitioner. Study 2 included 34 patients diagnosed with a major depressive episode participating in a randomized trial. Results of both studies indicated a significant inverse relationship between distress tolerance (DTS) and both depression severity (PHQ9) and psychological distress (K10). Results of intent-to-treat (ITT) marginal model analyses demonstrated that the Sadness Program was effective in reducing depression symptoms and psychological distress (Cohen's  $d_s > 1$ ), and in increasing distress tolerance (Cohen's  $d_s > .28$ ). However, patients who entered treatment with lower distress tolerance scores evidenced higher baseline and post-treatment scores on the outcome measures following iCBT. Collectively the findings suggest that distress tolerance is an important variable to consider in the context of treatments for depression. Clinical implications, future directions, and limitations are discussed.

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Distress tolerance is a psychological construct relating to an individual's perceived ability to experience and withstand negative emotional states (Leyro, Zvolensky, & Bernstein, 2010). The construct of distress tolerance is gaining interest in psychology, across disorders from substance abuse to anxiety and mood disorders and has theoretical implications for psychopathology generally. It has been proposed that individuals low in distress tolerance will attempt to minimize exposure to distressing situations, often engaging in avoidant behaviours (McHugh & Otto, 2011) or by restricting or limiting their expression of emotions and affectivity (Leyro et al., 2010). The consequent rapid alleviation of distress and decreased experience of negative affect leads to negative reinforcement and continued engagement in such behaviours. The means to escape distress may be in the form of both behavioural and cognitive or experiential avoidance. Experiential

avoidance is most commonly defined as the tendency to engage in behaviours that alter the frequency, duration, or form of unwanted internal experiences that encompass physiological sensations, thoughts, feelings, and memories (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Simons and Gaher (2005) provide a useful multi-dimensional conceptualization of psychological distress tolerance that incorporates 1) ability to tolerate aversive experiences, 2) appraisals of the acceptability of aversive experiences, 3) efficient regulation of emotions, and 4) level of psychological absorption or depletion of attentional resources when distressed. The clinical picture of an individual low in distress tolerance is someone who reports that the experience of distress is unbearable, shameful, or unacceptable, who has a weak perceived ability to cope, who makes efforts to avoid experiencing negative emotions or makes efforts to quickly alleviate negative emotions when they do arise, and finally, someone who becomes consumed or absorbed by aversive experiences to the detriment of their functioning (Simons & Gaher, 2005).

The concept of distress tolerance has most notably been developed within the framework of the biosocial model of borderline personality disorder (BPD) which proposes that an unwillingness to

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tolerate emotional distress is a core mechanism in BPD (Linehan, 1993). Research has demonstrated a relationship between low distress tolerance and a range of other maladaptive behaviours, including deliberate self-harm, disordered eating, drug and alcohol use, gambling, and compulsive buying (Anestis, Selby, Fink, & Joiner, 2007; Brown, Lejuez, Kahler, Strong, & Zvolensky, 2005; Buckner, Keough, & Schmidt, 2007; Chapman, Gratz, & Brown, 2006; Daughters, Lejuez, Kahler, Strong, & Brown, 2005; Daughters et al., 2005; Williams, 2012; Zvolensky et al., 2009). In addition to being linked to various maladaptive behaviours, research has demonstrated that individuals low in distress tolerance employ maladaptive coping strategies in response to anxiety-provoking and distressing situations (Keough, Riccardi, Timpano, Mitchell, & Schmidt, 2010; McHugh & Otto, 2011; Potter, Vujanovic, Marshall-Berenz, Bernstein, & Bonn-Miller, 2011; Zvolensky et al., 2009). Minimal research has focused on low distress tolerance in the context of mood disorders despite poor emotional coping featuring heavily in theoretical models of depression (Campbell-Sills & Barlow, 2007, pp. 542–559; Gross & Munoz, 1995) and evidence that the related concept of experiential avoidance is associated with a range of psychological problems including depression (Hayes et al., 2004). It has been proposed that individuals who are intolerant of distress and who subsequently engage in maladaptive coping strategies may have a propensity to experience depression (Campbell-Sills & Barlow, 2007, pp. 542–559; Gross & Munoz, 1995). The converse hypothesis has also been proposed; that individuals experiencing depression may be more likely to seek out maladaptive behaviours as a means of coping with perceived distress (Gross & Munoz, 1995). To our knowledge, only one study (Ellis, Vanderlind, & Beevers, 2013) has investigated the specific construct of psychological distress tolerance in major depression. Ellis et al. measured distress tolerance *behaviourally* as an individual's ability to pursue a goal while experiencing negative emotions. The authors defined distress tolerance as task persistence during a computerized mirror tracing task known to elicit frustration and anger and evaluated the impact of cognitive reappraisal and acceptance strategies on a number of variables including task persistence. The Authors reported no differential impact of emotion regulation strategies, but did report that depressed participants terminated the task sooner than their non-depressed counterparts. While demonstrating an important relationship between depression and behavioural distress tolerance, this study did not include a measure of psychological distress tolerance, therefore the findings are limited to the behavioural domain.

The current investigation was conducted with the aim to address the gap in the literature regarding the relationship between psychological distress tolerance and depression. Two studies were conducted focusing on psychological distress tolerance based on the multi-dimensional conceptualization put forward by Simons and Gaher (2005). In both studies, the relationship between distress tolerance and depression severity was explored in the context of a treatment program for depressed patients. Cognitive behavioural therapy (CBT) is recommended as a first-line treatment of choice for depression (NICE, 2009) and meta-analyses of randomized controlled trials (RCTs) of internet-based CBT programs (iCBT) for depression provide evidence that iCBT is comparable to best-practice face-to-face CBT (Andersson & Cuijpers, 2009; Andrews, Cuijpers, Craske, McEvoy, & Titov, 2010; Cuijpers et al., 2011). In iCBT it is important that patients complete homework tasks and activities to reinforce learning of the program material, therefore requiring patient initiative and motivation. Homework tasks typically require patients to challenge their thoughts and behaviours, and engage in activities, such as exposure, that can be quite distressing. Considering the behaviours commonly exhibited by those with low distress tolerance, it is reasonable to propose that such patients may be less likely to engage in distressing aspects of

the treatment program, and therefore receive less benefit as evidenced by a poorer treatment response. Further, as avoidant coping is antithetical to the principles and skills underpinning CBT, it is likely that patients exhibiting low distress tolerance are less likely to fully engage with, and respond well to treatments that include exposure as a core therapeutic component. A secondary aim of the current investigation was to evaluate these proposals in the context of a validated iCBT program for depression (the Sadness Program: <https://thiswayup.org.au/clinic/courses/courses-we-offer/depression/>).

### **Study 1: the impact of distress tolerance on treatment outcomes for depression in primary care**

Study 1 aimed to identify the relationship between the different psychological domains of distress tolerance and depression, and to evaluate the impact of distress tolerance on treatment adherence and outcome following an iCBT program for depression (the Sadness Program). Based on existing theoretical proposals (Campbell-Sills & Barlow, 2007, pp. 542–559; Gross & Munoz, 1995), it was hypothesized that there would be an inverse correlation between distress tolerance (DTS) and depression severity (PHQ9), and general psychological distress (K10) at baseline. Further, it was predicted that patients reporting lower distress tolerance at baseline would be less likely to adhere to the program and therefore evidence a smaller reduction in primary outcome scores (PHQ9, K10) following iCBT treatment.

### **Methods**

Study 1 was conducted as part of the Quality Assurance activities of the Clinical Research Unit for Anxiety and Depression (CRUFAD) at St. Vincent's Hospital, Sydney. Prior to enrolment in any of the CRUFAD's/This Way Up programs, all individuals are informed that data will be collected and used for research purposes as per the following: *'By participating in THIS WAY UP Clinic, you acknowledge that your data will be pooled, analysed and periodically published in scientific articles to enhance scientific knowledge in anxiety and depression. In any publication, information will be provided in such a way that you cannot be identified'*. All patients provided electronic informed consent that their pooled data could be used for research purposes.

### *Procedure*

Patients were provided with a prescription from a GP or clinician registered with CRUFAD in order to enrol in the Sadness Program. As routine practice, prescribing clinicians were advised that patients are unlikely to benefit if they have very severe depression, persistent suicidal thoughts, drug or alcohol dependence, schizophrenia, bipolar disorder, or are taking atypical antipsychotics or benzodiazepines. Clinical responsibility was maintained by the prescribing clinician who received automatic updates via email regarding each patient's progress. The prescribing clinician also received an email alert if a patient's scores on the K10 indicated elevated distress or the patient endorsed suicidality on the PHQ9. The Sadness Program was developed so that a patient cannot advance to the subsequent lesson without first completing the preceding lesson, downloading the associated homework components, and then waiting 5 days (to ensure sufficient time to review the materials and to complete the homework tasks). All patients have 10 weeks to complete the program and are encouraged to progress through each lesson at a pace of 1 lesson per every 1–2 weeks. Patient progress is tracked automatically through the CRUFAD Clinic system. The program consists of six online lessons representing best practice CBT as well as regular homework assignments and access to supplementary resources. Each lesson was

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