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Distress Tolerance and Mental Health Outcomes

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Abstract

This literature review has compiled research on two related subjects: the construct of distress tolerance and the treatment of mental health issues for which low distress tolerance is an underlying factor. The purpose of this work is to not only examine a central mechanism in the onset and maintenance of select psychopathologies, but also to examine ways in which treatment focused on raising an individual's distress tolerance can help in symptom reduction. This review also proposes that a better understanding of stress and an individual's reaction to it can lead to both more effective treatment and towards the future fulfillment of two goals: the mitigation of the symptoms and effects of a mental health disorder, and the prevention of the onset of stress-related psychopathologies.

Introduction

There is considerable variability in each of our experience of and response to stress. Such variability may be conceptualized as an individual's level of distress tolerance—in layman's terms, one's "anxiety threshold." Distress tolerance may be defined as an individual's ability to experience and tolerate negative psychological states (Leyro, Zvolensky, & Bernstein, 2010; Simons & Gaher, 2005). Distress tolerance has long been a focus and interest of professionals in the field of psychology, in part because it is thought to be a major contributor to the development and maintenance of various psychopathologies, including substance abuse and personality disorders (Leyro et al., 2010). But what is the exact nature of the relationship between distress tolerance and the development of psychopathology? The importance of the relationship certainly cannot be denied: estimates of the prevalence of mental health disorders suggest that approximately 30% of adults in the United States suffer serious mental health issues that require treatment by a clinician (Comer, 2008). It is a generally accepted theory that personality has an effect on an individual's level of distress tolerance. The exact mechanisms behind this relationship are an area worthy of close study in order to apply the knowledge to teaching better stress-coping skills, the effects of which are unknown in

reducing the instance of severe mental health disorders.

This review has three goals, and in order to achieve them, the information in this review has been organized into three main sections. First, the construct of distress tolerance will be addressed: it will be defined, and related constructs will be described. Second, psychopathologies that may be conceptualized as related to distress tolerance will be addressed. For the purposes of brevity and clarity, three specific mental health disorders have been chosen for examination: Posttraumatic Stress Disorder (PTSD), Borderline Personality Disorder (BPD), and Substance Use Disorders. After a description of each disorder has been provided, the role of distress tolerance in each of those disorders will be reviewed and the implications for treatment will be discussed. Third, and finally, future issues and possible directions for research will be presented.

The Construct of Distress Tolerance

Despite widespread interest in distress tolerance, and particularly its relevance to mental health, there has been considerable debate among researchers over the proper way to define the nuances of this construct; some members of the field viewed the focus of distress tolerance as somatic, while others

believed the focus to be emotional (Leyro et al., 2010).

Distress tolerance is a variable construct reflecting the ability-or lack thereof-of an individual to both tolerate stressful states and to persist at completing goal-oriented tasks while experiencing distress (McHugh, et al., 2011). Distress tolerance can be broadly viewed as having two components. The first is an internal component, or the individual's perceived ability to withstand negative emotions and other aversive states, such as uncomfortable bodily sensations (Leyro et al., 2010). The second is an external component, which focuses on the individual's actual behavioral response to those emotions or states (Leyro et al., 2010). Viewed as a dimensional "trait," those higher in distress tolerance are more likely to be able to process and approach negative emotions and other aversive states, while those lower in distress tolerance are more likely to fear those emotions and respond maladaptively by attempting to avoid or escape negative emotions and aversive states (Leyro, et al., 2010). Distress tolerance is theorized as affecting an individual's perception of and response to both somatic and emotional states (Leyro et al., 2010).

At first glance, distress tolerance may seem to overlap with anxiety; one might say that those low in distress tolerance are "anxious" about negative emotions and aversive states, while those high in distress tolerance are not. However, research by Keough and colleagues (2010) demonstrated that while distress tolerance is uniquely associated with an increased vulnerability to panic, worry, have social anxiety, and to be obsessive compulsive, it is not inextricably linked with the anxiety disorders themselves. There is also a marked difference between anxiety sensitivity and distress tolerance in studies relating the two

constructs to substance abuse. For example, in one study, individuals with lower anxiety sensitivity were more likely to use marijuana in order to conform to their peers, while individuals with lower distress tolerance used marijuana in order to cope with negative emotions (Zvolensky, Marshall, Johnson, Hogan, Bernstein, & Bonn-Miller, 2009).

Distress Tolerance and Psychopathology

The construct of distress tolerance is highly relevant to our understanding of a range of psychopathologies and mental health disorders. To illustrate this concept, the following sections of this review will focus on Posttraumatic Stress Disorder, Borderline Personality Disorder, and Substance Use and Dependence and their individual relationships with distress tolerance.

Posttraumatic Stress Disorder

Posttraumatic Stress Disorder (PTSD) belongs to the category of stress disorders. In keeping with *DSM-IV-TR* diagnostic criteria for PTSD, clients who are determined to be suffering from the disorder must have experienced or observed a traumatic event in which the threat of death or grievous physical injury to their own person or to others was present, and the individual's response to that event must be discovered to have been one of devastating fear or powerlessness (APA, 2000). In the event that the client meets both of these criteria, the clinician will explore the existence of specific identifying symptoms which include but are not limited to: recurrent, intrusive, and distressing recollection of the trauma, acting or feeling as though the trauma is happening again, and intense psychological and physiological distress at exposure to either internal or

external cues that represent a characteristic of the traumatic event that occurred (APA, 2000). The individual must also be persistently avoiding stimuli associated with trauma, as well as conversations, thoughts, or activities that might remind the victim of the traumatic event (APA, 2000). The range of symptoms associated with PTSD contains both maladaptive physiological and psychological features. Individuals have difficulty with symptoms ranging from feeling detached from others to outward bursts of anger and hyper-vigilance (APA, 2000). The *DSM-IV-TR* asserts that symptoms must last for more than one month to receive a diagnosis of PTSD, and that the disturbance is such that it significantly impairs functioning in important areas of life (APA, 2000).

Low distress tolerance plays a significant role in the maintenance of the symptoms of PTSD, which has been characterized as a disorder of emotional and situational avoidance (Foa & Kozak, 1986). Trauma places enormous emotional demands upon its victims: not only are the symptoms perceived as threatening to the individual, but tolerating the psychopathological aftereffects of trauma requires tremendous emotional regulation (Keane & Barlow, 2002).

There is empirical evidence to suggest that low distress tolerance enhances and worsens PTSD symptoms. For example, the results of a study that examined a group of trauma-exposed nonclinical adults found that low distress tolerance was incrementally correlated with increasingly severe PTSD symptoms (Vujanovic, Bonn-Miller, Potter, Marshall, & Zvolensky, 2011). Specifically, evidence was found that suggests that one's perceived ability to withstand emotional distress may be related to the severity of PTSD symptoms (Marshall-Berenz,

Vujanovic, Bonn-Miller, Bernstein, & Zvolensky, 2010). Scores from the Distress Tolerance Scale (Simons & Gaher, 2005) were significantly related to PTSD symptom severity, even when variance caused by participant sex, number of traumatic events, and trait-level neuroticism were accounted for (Marshall-Berenz et al., 2010). The results of this study suggest that an individual's self-efficacy may at least in part explain their level of distress tolerance and their behavior in the face of a stressful event or emotion (Marshall-Berenz et al., 2010). In other words, an individual's perception of their own ability to manage stress often affects their actual behavior. Therefore, individuals who are not confident in their ability to tolerate stress may be more likely to attempt to avoid the aversive state or event, which would in turn feed a vicious cycle of negative reinforcement (Marshall-Berenz et al., 2010).

Consequently, therapies for PTSD have been specifically focused on reducing an individual's level of anxiety in order to better enable the person to cope with stress. Skills such as relaxation training and meditation have been taught to individuals with stress disorders to both support more efficient stress management and also to decrease the negative psychophysiological effects of stress (Kabat-Zinn, 1990; Stetter & Kupper, 2002). The use of antianxiety medications and antidepressants have also been effective in helping to control the tension, nightmares, and flashbacks often experienced by individuals with PTSD (Comer, 2008). Finally, exposure therapy, which has been suggested by some studies to be the most effective intervention for PTSD, has been utilized to help the individual not only recognize the cause of their anxieties, but also to "attack" them (Turner, Beidel, & Frueh, 2005; Wiederhold & Wiederhold, 2005). The recent research

on the role of distress tolerance in PTSD adds weight to the efficacy of these anxiety-reducing therapies and suggests that not only has a central underlying mechanism to the disorder been recognized and focused upon, but that clinicians are aware that assessing an individual's level of distress tolerance is key to understanding the severity of their PTSD symptoms.

Borderline Personality Disorder

Borderline Personality Disorder (BPD) is characterized by pervasive instability in mood, self-image, interpersonal relationships, and impulsivity (Leichsenring, Leibing, Kruse, & Leweke, 2011). Although the causes of the disorder are not clear, research suggests that stressful life events, such as divorce of parents, or physical or sexual abuse, can contribute to the onset of BPD (Leichsenring et al., 2011). High rates of comorbid mental disorders and suicide often accompany BPD, as well as other self-destructive behaviors like self-harm (Leichsenring et al., 2011). The *DSM-IV-TR* has determined that the symptoms of BPD include, but are not limited to: persistently unstable self-image, emotional instability caused by difficulty regulating emotions, and intense, unstable interpersonal relationships characterized by a cycle of extreme idealization and extreme devaluation (APA, 2000).

Marsha Linehan's research on BPD and subsequent development of Dialectical Behavior Therapy (DBT) for those patients is one of the strongest existing examples of a disorder characterized by distress tolerance and an effective therapy specifically grounded in adjusting an individual's ability to tolerate distress.

Linehan's work (1993) on BPD suggests that an underlying central mechanism of this

disorder is the persistent inability and unwillingness to tolerate emotional distress. Such a lack of distress tolerance leads to a destructive cyclical relationship in which the negative experiences that the individual has encountered brings about a reaction that leads to further dysfunction in interpersonal relationships, chronic frustration, and a marked difficulty coping with stressors (Linehan, 1987). There is empirical evidence to support this perspective. For example, a 2009 experiment adapted a measure of distress tolerance and examined its relationship with emotion dysregulation amongst a group of 35 outpatients receiving therapy: 17 of those subjects had BPD, while 18 did not (Gratz, Rosenthal, Tull, Lejuez, & Gunderson, 2009). The researchers specifically defined emotion dysregulation as the unwillingness to experience distress in order to pursue goal-oriented activities as well as the inability to engage in goal-oriented activities when experiencing distress (Gratz, et al. 2009). Although the BPD patients were less willing than their study counterparts to experience distress in order to engage in goal-oriented behavior, they did not show greater difficulty engaging in goal-oriented activities while experiencing distress (Gratz, et al. 2009). These results offer two important pieces of evidence: first, that low distress tolerance does indeed affect the manner in which individuals with BPD make decisions, and that those decisions are usually avoidant of stress and second, that individuals with BPD are capable of experiencing stress in order to pursue goal-directed behavior.

This last piece of evidence suggests that a therapy like DBT, which actively helps BPD patients learn how to cope with their intolerance of distress, is extremely useful in allowing individuals with low distress tolerance to more effectively manage the

experiences that might upset them (Linehan, 1993). DBT also focuses on the behavioral outcome of a negative response to stress by providing alternative methods to interpret and react to stressful situations (Linehan, 1993). It is this twofold model: helping to increase distress tolerance and creating more effective behavioral responses to stress that have made DBT a treatment of choice in treating BPD. Finally, the study from Gratz and colleagues (2009) demonstrates that a person's level of distress tolerance can change, which further supports the idea that including therapy geared towards accomplishing that change is an integral part of treatment in a disorder where distress tolerance plays a central role.

Substance Abuse and Dependence

Substance abuse and dependence have the same initial basis for diagnosis: both are defined by the *DSM-IV-TR* as a harmful pattern of substance use that leads to significant impairment (APA, 2000). Each has different features that result in the specific diagnosis. Substance abuse involves recurrent use of drugs that results in a failure to fulfill major obligations (e.g. at work, home, or school), recurrent drug-related legal problems, and recurrent use of the drug despite physically dangerous circumstances (APA, 2000). Substance dependence is hallmarked by persistent need for the drug or unsuccessful efforts to control use, considerable time spend obtaining, using, or recovering from the drug, the use of which has replaced important activities, and taking unintentionally larger doses of the drug over a longer period of time (APA, 2000). Both disorders involve the continuing use of the drug despite the pattern of use causing or increasing social problems (APA, 2000).

Substance abuse and dependence plays an interesting dual role in distress tolerance:

it is both an outcome, as a psychopathology that can develop from low distress tolerance, and a coping mechanism for individuals with low distress tolerance.

The use of and subsequent dependence on drugs is one method of emotional coping, and the rapid alleviation of negative psychological states is likely to be appealing to individuals low in distress tolerance (Simons & Gaher, 2005). Research has demonstrated that distress tolerance is negatively correlated with alcohol and marijuana use and that the relationship is incremental (Simons & Gaher, 2005; Zvolensky et al., 2009). In other words, individuals with low distress tolerance reported a stronger need to use drugs like alcohol or marijuana to tolerate negative emotional states, and that as distress tolerance decreased, substance use increased.

Research has also shown evidence of an association between distress tolerance and problems with substance use. When Simons and Gaher (2005) examined the relationship between distress tolerance and alcohol-related problems in a new study, they found a small but significant association between distress tolerance and alcohol-related problems (Simons & Gaher, 2005). There was no association between distress tolerance and the frequency with which an individual used alcohol, but there was a gender difference: distress tolerance predicted alcohol-related problems for men, but not for women (Simons & Gaher, 2005). In a related study, Howell and colleagues (2010) found that both low distress tolerance and a sensitivity to anxiety predicted problems with alcohol use; distress tolerance in particular was related to the use of alcohol as a coping mechanism. Daughters and colleagues (2008), found that substance users with Antisocial Personality Disorder

had lower levels of distress tolerance than substance users without the disorder, which further suggests that maladaptive behaviors like substance abuse stem from unhealthy attempts to avoid negative emotions and experiences, such as the difficulties associated with living with Antisocial Personality Disorder. These results strongly connect to the idea that individuals low in distress tolerance are likely to seek immediate rewards, such as dispelling negative emotions with illegal substances, and to continuously attempt to avoid unpleasant experiences (Leyro et al., 2010).

The construct of distress tolerance has relevance for the treatment of substance use and dependence. A key component underlying the maintenance of substance use and dependence is the individual's intolerance for emotional and somatic sensations (Baker, Piper, McCarthy, Majeskie, & Fiore, 2004). When applied to rehabilitation for drugs, the idea is sensible: withdrawal is a notoriously difficult and sickening experience, and learning how to endure life without drugs has been noted by researchers, former addicts, and popular media to be a trying task. Substance-abusing individuals low in distress tolerance, therefore, would be more likely than the individuals with the same issues high in distress tolerance to postpone entering a rehabilitation program, and less likely to complete the same program.

When this idea was studied, however, Daughters and colleagues (2005) could not find evidence to suggest a link between intolerance for uncomfortable physical sensations and dropout from long-term treatment programs. These results are surprising—a large percentage of individuals entering a drug rehabilitation program (of all types and durations) do not complete treatment (Crits-Christoph & Siqueland,

1996), and the dropout rate is staggeringly high for long-term residential programs (Substance Abuse and Mental Health Services Administration, 2002). Rather, it was an individual's ability to withstand negative emotional states that seemed to predict their length of survival in the program. Specifically, the study examined the likelihood of treatment dropout as predicted by a variety of self-report measures, including the Positive and Negative Affect Scale (PANAS), and performance on four stressful tasks, which included two psychological stressors (a mirror-tracing task and a paced auditory serial addition task), and two physical stressors (a breath holding task and a cold pressor task) (Daughters et al., 2005).

That the researchers chose to study both physical and psychological stressors is evidence of a well-thought-out study: individuals at a drug rehabilitation facility are likely to encounter both the physically exhausting effects of withdrawal as well as the psychologically stressful tasks of being without family and friends, and trying to remain sober (Daughters et al., 2005). Results demonstrated that it was the participants who were unwilling to finish the psychologically stressful tasks who departed early from the treatment program (Daughters et al., 2005). This result suggests that it is not the painful and nauseating physical symptoms of withdrawal, but rather the unpleasant mental state and high mental stress experienced by recovering addicts that cause an individual to leave a treatment program early.

The psychopathology behind substance use and dependence, although heavily researched, has found little conclusive evidence to suggest more effective therapies, particularly in comparison with the efficacy of the treatments for PTSD and BPD. More

research into the specific facets of distress tolerance and the role it plays in the onset and treatment of substance abuse and dependence is needed.

Directions for Future Research

This review examined both a central mechanism in the onset and maintenance of select psychopathologies and treatment methods that focused on raising an individual's distress tolerance to provide relief from symptoms. Not only were some of the ways in which distress tolerance affected an individual with a psychopathology revealed, but distress tolerance-oriented treatments were shown to be successful in achieving symptom reduction. Yet despite increased clinical and research attention to the role of distress tolerance in the development and treatment of psychopathology, important empirical questions remain.

The role of gender is an important area for future research. Several studies have suggested that there may be a gender-specific component to distress tolerance (e.g., Simons & Gaher, 2005; Daughters, Reynolds, MacPherson, Kahler, Danielson, Zvolensky, & Lejuez, 2009). For example, in a study of 823 college students, men reported greater distress tolerance than women (Simons & Gaher, 2005). However, research on a gender component in distress tolerance has been extremely limited, with a gender-specific result often only a byproduct, rather than the focus, of the study. Specifically examining gender in relation to distress tolerance could yield interesting results, as well as explain discrepancies in both the onset of certain psychopathologies—such as BPD, which is generally considered to be more prevalent in women—and also in the success of treatment. For instance, a gender component in

substance abuse and dependence has been acknowledged by several research studies (e.g., Greenfield, Back, Lawson, & Brady, 2010; Tuchman, 2010) and developing a further understanding of gender differences in distress tolerance could lead to improvements in treatment for both men and women.

Study results (e.g. Howell, Leyro, Hogan, Buckner, & Zvolensky, 2010; Simons & Gaher, 2005) have demonstrated a significant association between distress tolerance and substance abuse and dependence, a finding that could potentially be used to improve treatment outcomes of those with substance use issues. If drug rehabilitation programs were to incorporate a treatment for helping individuals raise their distress tolerance and cope with negative mental states and high stress in a healthy way in addition to treating physical withdrawal symptoms, then ideally, two positive results would emerge. Not only would the individual be clean of the drug they were previously using, but they would have learned how to cope with stress in a healthy way and possibly be less likely to return to their previous drug use in the event of a stressful situation or an unpleasant mental state.

Finally, a potential goal for researchers to reach would be to develop the understanding of distress tolerance such that it could be applied to identifying individuals who are at risk for developing a mental illness. This understanding could be supplemented by information such as family history: genetics have been seen to play a role in the development of disorders like depression (e.g. Gatt, Nemeroff, Schofield, Paul, Clark, Gordon, & Williams, 2010). Identifying at-risk persons could allow clinicians to provide skills for increasing distress tolerance that could prevent

symptoms from becoming severe to the point of being debilitating, or perhaps even partially derail the onset of the disorder completely. Although this goal is not yet within reach, the existing research on PTSD suggests that it is plausible: Vujanovic and colleagues (2011) had noted in their study that low distress tolerance was incrementally correlated with increasingly severe PTSD symptoms.

Conclusions

A conceptual and empirical focus on distress tolerance has significantly improved our clinical understanding and outlook of PTSD and BPD, with growing attention to substance use disorders as well. Review of the current research on distress tolerance suggests that the concept has not only been acknowledged as being significant in the onset and maintenance of mental health disorders, but that some promising and effective treatments that include raising an individual's level of distress tolerance are already in use. Furthermore, the current research revealed a detailed look at the way in which distress tolerance plays a role in a specific psychopathology. Yet a number of questions remain regarding the application of the study results to improve treatment in psychopathologies such as substance use disorders, the potential association of distress tolerance with other psychopathologies than the ones examined in this literature review, and finally, seeking a way to increase distress tolerance in an individual so that the impact of a mental health disorder in their life is significantly lowered.

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