

The Use of Dialectical Behavior Therapy in Post-Disaster Psychotherapy

Ursula Martin

106 West Boulevard, East Rockaway, N.Y. 11518, USA

ABSTRACT: *Hurricane Sandy struck in 2012, propelling serious emotional, financial, and practical problems at millions of people. Many of them experienced ongoing feelings of stress and anxiety following the disaster. 22 individuals with anxiety issues post-disaster were treated with Dialectical Behavior Therapy techniques, and compared to control subjects who received no treatment. The Beck Anxiety Inventory was administered to assess anxiety levels pre and post-treatment. Results indicated that Dialectical Behavior Therapy (DBT) is useful in reducing anxiety levels triggered by natural disaster. This study substantiates earlier studies which demonstrate the effectiveness of DBT, and provides new data on its use with a new sample: post-hurricane survivors. Discovering techniques which can support emotional recovery is useful for individuals, communities, and relief organizations which establish policies and programs. Practical implications of this research include the need for resources to help survivors cope with emotional issues in the wake of disasters. This study yields significant information which can assist survivors of future natural disasters.*

INTRODUCTION

Hurricane Sandy devastated the eastern coast of the United States in 2012, crashing with winds of 80 mph and floods of up to 13 feet. An estimated 100 people were killed. Streets were flooded, trees were torn apart, and beach boardwalks were hurled upside down and shredded. More than eight million homes lost electricity and heat, many for more than a month. The disaster resulted in billions of dollars in damages to homes, buildings, and businesses (Sharp, 2012).

Ongoing emotional distress occurs in the wake of a disaster; this is known as a “normal response to an abnormal event.” (Mental Health Association of Nebraska, 2012). More than half of the residents in one disaster experienced anxiety and depression. Follow-up 18 months later revealed that more than one third of the affected residents reported having these feelings (Roorda, Van Stiphout & Huijsman-Rubingh, 2004). In another study of the same disaster, 30 months post-disaster, the incidence of psychological problems in survivors was 30% greater than control subjects. An individual's reaction to emotional trauma is complex and difficult to predict (McFarlane & Yehuda, 1995). Their emotional and physical proximity to actual danger, degree of perceived personal control, and the source of the trauma (e.g., natural disaster) also impact the reaction to trauma (McFarlane & De Girolamo, 1996).

Acierno et al., (2007) found that significant numbers of individuals are negatively emotionally affected by hurricanes. In their sample of those affected by hurricanes, greater than fifteen percent met full criteria for at least one psychological disorder, and more than 100,000 adults met criteria for hurricane-specific PTSD. Abramson, Stehling-Ariza, Garfield, and Redlener (2008) reported that more than half of 1077 individuals affected by a hurricane reported significant psychological distress six months post-disaster and at follow-up the next year. In a study of psychologists working with disaster victims, Madrid and Grant (2008) reported intense trauma and widespread generalized anxiety experienced by those affected by hurricanes. They concluded that it is essential for mental health needs to be included in planning for disaster preparation and recovery.

Dialectical Behavior Therapy (DBT) has been used to reduce

symptoms of stress and personality issues in various populations (Linehan, 1987, Verheul et al., 2003). It includes behavioral analysis, skills training, and homework exercises for distress tolerance, mindfulness, emotion regulation, and interpersonal effectiveness. It is useful in helping individuals to cope with intense emotions and crises (Linehan, 1993). The current study evaluates the use of Dialectical Behavior Therapy in individuals following Hurricane Sandy. It was hypothesized that the BAI scores would be reduced after treatment, reflecting a reduction in anxiety levels. The participants were diagnosed using the diagnostic criteria in the DSM-IV-TR manual. The study obtained ethical approval, participants gave informed consent, and identifying participant data remains confidential.

METHOD

The participants in this study were 22 adults residing in the north-eastern United States, who had sustained flood damage to their homes during Hurricane Sandy. The sample was self-selected (the individuals sought psychotherapy for post-disaster stress) during the time frame 6-12 months post-disaster. Subjects were male and female adults ranging in age from 32-61 who gave informed consent and reported anxiety related to the hurricane. They were seen for individual Dialectical Behavior Therapy psychotherapy sessions by the author of the study, and the Beck Anxiety Inventory was self-administered in the initial session, and again during the final session. They were encouraged to attend weekly sessions for six months. BAI mean scores were calculated, and a Student's t- test analysis was performed to examine differences between mean scores of subjects pre and post-treatment. Dialectical Behavior Therapy skills (including distress tolerance, interpersonal effectiveness, mindfulness, and emotion regulation) were taught to clients in session, and they were encouraged to practice these skills outside of session to cope with stress. Subjects received weekly sessions during which Dialectical Behavior Therapy exercises were discussed, homework exercises were reviewed, and progress was monitored. A control group was formed with 22 subjects in the same geographical area, in a similar age range, who were impacted by flood damage to their homes and reported anxiety related to the hurricane. These individuals were asked to complete the BAI upon initial contact six months post-hurricane, and at follow-up six months later. The control subjects included were

*Correspondence regarding this article should be directed to: ursulam@hotmail.com

those who scored an anxiety level of 29 or higher on the initial BAI, and did not receive psychotherapy services in the interim.

The Beck Anxiety Inventory (BAI), created by Aaron Beck and colleagues, is a 21-question multiple-choice scale which assesses the severity of an individual's anxiety. It measures anxiety symptoms in adults and can be completed within ten minutes. This scale can be used for screening for anxiety or for measuring improvements of anxiety symptoms subsequent to treatment. Respondents are asked to rate anxiety symptoms (including heart pounding/racing, fear of losing control, inability to relax) on a scale ranging from zero to three. The total score has a minimum of zero and a maximum of 63 (Beck & Steer, 1993). Research on the Beck Anxiety Inventory has provided support for concurrent validity and reliability. The scale showed high internal consistency ($\alpha = 0.92$) and test-retest reliability over one week of 0.75. In addition, the BAI was correlated with the revised Hamilton Anxiety Rating Scale, ($r = 0.51$) (Beck, Epstein, Brown, & Steer, 1988). The Inventory was also validated in other studies (Fydrich, Dowdall, & Chambless, 1992, Steer, Ranierik, Beck, & Clark, 1993).

RESULTS

Of the 22 participants who received Dialectical Behavior Therapy, 14 (64%) were female and eight (36%) were male. Mean age was 49.6 years ($SD = 8.4$), with an age range from 32 to 61. Mean number of sessions attended was 24, and the presenting problems included anxiety, irritability, and sad mood related to the disaster. Results from the Beck Anxiety Inventory demonstrated that 95% of individuals reported a lower level of anxiety at the end of treatment. Student's *t*-test revealed that individuals scored significantly higher on the BAI pre-treatment than post-treatment. Higher BAI scores indicate higher anxiety levels; scores between 22-35 are termed moderate anxiety.

Among participants ($n = 22$), there was a statistically significant difference between the pre ($M = 33.90$, $SD = 5.17$) and post-treatment scores ($M = 19.22$, $SD = 2.68$), $t(21) = 25.69$, $p \leq 0.05$, $CI 95\%$. Therefore, the null hypothesis that there is no difference in anxiety levels pre and post-DBT treatment can be rejected. Control subjects ($n = 22$) had an average initial BAI score similar to those of treatment subjects ($M = 35.36$, $SD = 5.28$), and their BAI scores six months later (after receiving no treatment) was not significantly lower ($M = 30.40$, $SD = 2.48$).

DISCUSSION

Results of this study show that individuals report significantly reduced levels of disaster-related anxiety following Dialectical Behavior Therapy. These results suggest that this is an effective mode of treatment for individuals post-disaster. Data corroborates the results of other studies which demonstrated the positive impacts of DBT with various other populations (Linehan, 1987, Verheul et al., 2003). Comparison between treatment subjects and controls indicate that those who experienced anxiety post-disaster and did not receive treatment continued to report relatively high anxiety six months later.

Paranjothy et al., (2011) note that the mental health impact of flooding is a growing public health concern. Graham (2012) described the emotional aftermath of Hurricane Sandy, which left millions feeling frightened and frigid. Feelings people experienced include hopelessness, anger, and anxiety. Ruggiero et al., (2012) evaluated the effects of hurricanes and found that post-disaster psychological symptom estimates were 15% for anxiety and stress. Statistical analyses suggested that indicators of hurricane exposure severity such as lack of electricity, food, money, or transportation were most significantly correlated with mental health problems. It was concluded that the "contribution of factors such as loss of housing,

financial means, clothing, food, and water to the development and/or maintenance of negative mental health consequences highlights the importance of systemic post-disaster intervention resources targeted to meet basic needs in the post-disaster period" (p.30).

Evidently, disasters have profound impacts on the psychological health of survivors. "Stress and strong emotions are common after a storm like Hurricane Sandy. Many people experience fear, anxiety, anger, and sadness; other reactions may include changes in eating or sleeping habits, and increased alcohol or drug use". (Substance Abuse and Mental Health Services Association, 2012). In accordance with previous research studies on disasters (Graham, 2012, Carroll, Morbey, Balogh & Araoz, 2009), it was found that many survivors of Hurricane Sandy experienced psychological symptoms. Participants in the present study reported that their anxiety symptoms were associated with the hurricane. Onset of symptoms occurred after the hurricane, and the content of their anxiety-provoking thoughts were disaster-related. These results are significant due to the enormous number of areas affected, and the impact which these symptoms have on individuals. These symptoms affect quality of life, and can potentially reduce survivor's abilities to cope with various associated tasks (filing insurance claims and appeals, applications for governmental assistance, purchasing new possessions, and home repairs which are extensive and expensive).

Typically, post-disaster survivors face a range of ongoing stressors that increase their stress levels. Relocation, loss of employment, legal procedures, and financial loss are some of the common burdens. Following a 2005 hurricane in the southern United States, many lives were disrupted for lengthy periods because of relocation, lack of housing, and loss of basic infrastructure (Bryant, 2009). The present study illustrates that the use of DBT can help survivors cope with the emotions and behaviors related to these burdens. One participant noted: "I still think about the hurricane, but now when I get upset I can do exercises and write about how I feel". Another stated: "I can keep calm on the inside with the skills I learned, no matter what's going on outside of me". The skills bring relief, and the idea of having the skills themselves may be empowering for individuals.

Potential limitations of this study include a relatively small sample size. A larger sample size might have yielded different results. Regarding the timeframe during which the research was conducted, it is possible that participant's needs and symptoms would differ earlier and later than the 6-12 month post-disaster period of the current study. During the first several months after the storm, they were attending to construction recovery and seeking practical help for storm-related needs. It may be that the passage of time (as people emotionally recover after the hurricane) helped to lower stress levels by the end of the research study, in addition to the benefits of therapy lowering stress levels, as control subjects also reported an average reduction in BAI scores of 5 points over six months. Future research can compare larger treatment and control groups to address this question.

Practical implications of this study include the need for programs to help survivors cope with emotional issues post-disaster. To reduce psychological symptoms when facing future events, communities can plan resources for psychological assistance, including DBT after the disaster. As Roorda, Van Stiphout, & Huijsman-Rubingh (2004) and Goldmann & Galea (2014) note, disasters affect large groups of people in terms of psychological health, and aftercare services for disaster victims must be designed to address their psychological needs. Dialectical Behavior Therapy is a practical and effective mode of treatment (Linehan, 1987, Linehan et al., 1999). The results of this study indicate that it is an approach that is also useful for disaster survivors.

Clearly there is sufficient data available demonstrating that the psychological effects of disasters needs to be a high priority for

policymakers. Several variables can be quantitatively examined. These include the specific treatments which help people recover, and can be incorporated into the design and delivery of public mental health programs to address survivor's needs after flooding. Information from the present study can be useful in clinical and administrative arenas as well. Healthcare agencies and individual clinicians need to be educated about the major distress that flooding and its after-effects can cause, in addition to the treatments which enable survivors to improve mental health (Appendix 1).

REFERENCES

- Abramson, D., Stehling-Ariza, T., Garfield, R., & Redlener, I. (2008). Prevalence and predictors of mental health distress post-Katrina: Findings from the Gulf Coast Child and Family Health Study. *Disaster Medicine and Public Health Preparedness*, 2(2), 77-86.
- Acierno, R., Ruggiero, K., Galea, S., Resnick, H., Koenen, K., & Roitzsch, J. (2007). Psychological sequelae resulting from the 2004 Florida hurricanes: implications for post-disaster intervention. *American Journal of Public Health*, 97(1).
- Beck A., Epstein N., Brown G., & Steer R. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology*, 56, 893-897.
- Beck A., & Steer, R. (1993). *Beck Anxiety Inventory Manual*. San Antonio, TX: Harcourt Brace and Company.
- Bryant, R. (2009). *The impact of Natural disasters on mental health*. In Psych Australian Psychological Society. Retrieved from: <http://www.psychology.org.au/inpsych/>
- Carroll, B., Morbey, H., Balogh, R., & Araoz, G. (2009). Flooded homes, broken bonds: the meaning of home, psychological processes and their impact on psychological health in a disaster. *Health and Place*, 15 (2), 540-547.
- Fydrich, T., Dowdall, D., & Chambless, D. (1992). Reliability and validity of the Beck Anxiety Inventory. *Journal of Anxiety Disorders* 6, 55-61.
- Goldmann, E. & Galea, S. (2014). Mental health consequences of disasters. *Annual Review of Public Health*, 35, 169-183.
- Graham, J. (2012, November 10). The emotional aftermath of Hurricane Sandy. *New York Times*, p. 15.
- Linehan, M. (1993). *Skills Training Manual for Treating Borderline Personality Disorder*. New York, NY: Guilford Press.
- Linehan, M. (1987). Dialectical Behavior Therapy for borderline personality disorder: Theory and method. *Bulletin of the Menninger Clinic*, May, 51(3), 261-276.
- Linehan, M., Schmidt, H., Dimeff, L., Craft, J., Kanter, J., & Comtois, K. (1999). Dialectical behavior therapy for patients with borderline personality disorder and drug-dependence. *American Journal of Addiction*, 8 (4), 279-292.
- McFarlane A., & Yehuda, R. (1995). Conflict Between Current Knowledge About Posttraumatic Stress Disorder & its Original Conceptual Basis. *American Journal of Psychiatry*, 152(12), 1705-1713.
- McFarlane, A., & De Girolamo, G. (1996). The nature of traumatic stressors and the epidemiology of posttraumatic reactions. In B. A. Van der Kolk, A. C. McFarlane, & L. Weisaeth (Eds.), *Traumatic stress: The overwhelming experience on mind, body, and society* (pp. 129-154). New York: Guilford.
- Madrid, P. & Grant, R. (2008). Meeting Mental Health Needs Following a Natural Disaster: Lessons From Hurricane Katrina. *Professional Psychology: Research and Practice*, 39(1), 86-92.
- Mental Health Association of Nebraska. (2012, December 5). Psychological First Aid: Mental Health Care after Hurricane Sandy. Retrieved from <http://www.mha-ne.org>.
- Paranjothy, S., Gallacher, J., Amlot, R., Rubin G., Page L., Baxter T., et al. (2011). Psychosocial impact of the summer 2007 flood in England. *BMC Public Health*, 11, 145.
- Ruggiero, K., Gros, K., McCauley, J., Resnick, H., Morgan, M., Kilpatrick, D., et al. (2012). Mental health outcomes among adults in Galveston and Chambers Counties after Hurricane Ike. *Disaster Medicine and Public Health Preparedness*, 6, 26-32.
- Roorda, J., Van Stiphout, W., & Huijsman-Rubingh, R. (2004). Post-disaster health effects: strategies for investigation and data-collection. Experiences from the Enschede firework disaster. *Journal of Epidemiology and Community Health*, 58, 982-987.
- Sharp, T. (2012, November 27). About the Frankenstorm. Retrieved from <http://www.livescience.com>.
- Steer, R., Ranieri, W., Beck, A., & Clark, D. (1993). Further evidence for the validity of the Beck Anxiety Inventory with psychiatric outpatients. *Journal of Anxiety Disorders*, 7, 195-205.
- Substance Abuse and Mental Health Services Association. (2012). Retrieved September 10, 2014, from <http://www.samhsa.gov>.
- Verheul, R., Van den Bosch, L., Koeter, M., De Ridder, M., Stijnen, T., & Van den Brink, W. (2003). Dialectical behavior therapy for women with borderline personality 12-month, randomised clinical trial in the Netherlands. *British Journal of Psychiatry*, 18(2), 135-140.