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Dialectical Behavior Therapy Skills Training Core Mindfulness: Its Impact on Everyday Mindfulness, Goal-Directed, and Ineffective Behaviors

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Capstone Research Project

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Abstract

Individuals diagnosed with certain mental illnesses often engage in automatic thought patterns, which makes them more likely to behave in ineffective and harmful ways. Dialectical Behavior Therapy (DBT), with its emphasis on mindfulness, aims to help individuals break automatic thought patterns in order to engage in more goal directed behaviors. Previous studies have explored the effectives of the DBT program in its entirety however; only preliminary results have been published on the impact of mindfulness as it is taught through DBT. The purpose of this study was to examine the impact of core mindfulness as it is taught through a DBT skills training group on goal directed and ineffective behaviors. The study will be detailed through describing the participants, materials, and the procedure. Results were measured through pre, mid-way, and post-test administration of the Mindfulness Awareness Attention Survey (MAAS). The results indicate that for some participants, levels of mindfulness did increase after participating in the core mindfulness module of DBT skills training. Lastly, findings, implications, limitations, and recommendations for future research are explored.

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Dialectical Behavior Therapy Skills Training and Core Mindfulness: Its Impact on Goal Directed and Ineffective Behaviors

Clients with certain mental illnesses such as, Borderline Personality Disorder (BPD) often engage in automatic thought patterns making them more likely to choose harmful behaviors that result in negative consequences, instead of goal-directed behaviors. As a result, these choices can cause an increase in emotional dysregulation, and unhealthy behaviors and coping responses. Mindfulness is a fundamental skill taught in Dialectical Behavior Therapy (DBT) that aims to reduce automatic thoughts patterns that lead to harmful behaviors. According to Ryan and Deci (2000), mindfulness may be imperative in disengaging individuals from unhealthy behaviors and automatic thoughts patterns, which might increase behavioral and emotional regulation. Disengaging from unhealthy behaviors and increasing emotional and behavioral regulation is one of the main goals of DBT.

Currently, very little research exists regarding the effectiveness of the practice of mindfulness in DBT. This particular research study will look closely at the administration core mindfulness skills taught in three separate DBT skills training groups at Wayne Behavioral Health (WBHN). Each group participant has a primary diagnosis of BPD, however, many suffer from co-morbid mental illnesses. The main objectives of this research study are to assess whether participating in and completing the core mindfulness module increases the likelihood that participants of the group will choose effective goal directed behaviors rather than harmful behaviors, and be more mindful in their day-to-day experiences.

Review of the Literature

Mindfulness is a fundamental skill taught in Dialectical Behavior Therapy (DBT) that aims to reduce automatic thought patterns and harmful behaviors. According to Ryan and Deci

(2000), mindfulness may be imperative in disengaging individuals from unhealthy behaviors and automatic thought patterns, which might increase behavioral and emotional regulation. Disengaging from unhealthy behaviors and increasing emotional and behavioral regulation is one of the main goals of DBT. The purpose of reviewing the literature review is to explore aspects of mindfulness, provide a brief overview of DBT, core mindfulness skills taught as a part of the DBT skills training group, and research pertaining to the effectiveness of mindfulness taught through DBT. In addition, reviewing the literate will help to shed light on the impact of mindfulness skills taught through DBT, specifically its impact on goal directed, ineffective, and harmful behaviors.

Mindfulness

Mindfulness can be defined as "…an awareness of thoughts, feelings, behaviors, and behavioral urges" (Arnold, 2008, p. 1). Through mindfulness, individuals can heighten their attention of their present reality, and learn to understand themselves in the present moment (Brown & Ryan, 2003). The practice of mindfulness is derived from Zen spiritual practices and is known as a component of consciousness considered to enhance one's wellbeing. Individuals may find themselves going on about their lives without focusing on the here and now. Mindfulness is compromised when individuals act impulsively, without giving attention to their actions. This can be termed "mindlessness". This absence of *mindfulness* can be used as a defense mechanism.

Sometimes an individual may wish to avoid acknowledging feelings, thoughts, and behaviors out of fear of the consequences that might take place (Brown & Ryan, 2003). Through mindfully attending to one's current emotional state, identifying thoughts, and actions and reactions of others and one's self, effective solutions can be identified and implemented

(Feigenbaum, 2007). An overarching goal of DBT is to implement mindfulness in hopes that there will be fewer negative consequences in specific situations. For example, it is common for individuals diagnosed with BPD to engage in self-harm as a coping response. DBT aims to identify these harmful behaviors and replace them with healthier coping responses such as seeking support from others.

Dialectical Behavior Therapy

DBT was developed by Dr. Marsha Linehan, and was originally designed to treat individuals diagnosed with borderline personality disorder (BPD) (Linehan 1993a; Linehan, 1993b; Swales et al., 2000). BPD is categorized by widespread instability in emotional regulation, impulse control, self-image, and interpersonal relationships (McSherry et al., 2012). Linehan et al. (1993) have developed five areas of dysregulation out of the criteria listed in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. These five areas are as follows: 1) affective dysregulation, 2) behavioral dysregluation, 3) interpersonal dysregulation, 4) self-dysregulation, and 5) cognitive dysregulation. Linehan (1993) and Feigenbaum (2007) hypothesize that individuals suffering with BPD respond to stimuli with greater intensity and greater emotional arousal, leaving them more vulnerable to behavioral and cognitive dysregulation. A heightened sense of emotional arousal can often reduce the effectiveness of cognitive processes, which lead to difficulties in problem solving, identifying coping skills, and limited impairment in identifying possible consequences or outcomes. Since individuals suffering with BPD encounter difficulties with healthy coping skills, they often resort to self-harm, suicidal gestures or behaviors, substance abuse, and or dissociation as ways to cope with high emotional arousal and pain. The DBT model helps individuals to identify problematic

behaviors and helps them increase their ability to recognize, accept, and manage emotional and behavioral responses to stimuli (Feigenbaum, 2007).

DBT has a foundation in dialectics, which is grounded in philosophy and science. There are three tenets within dialectics. These include interconnectedness in the world, truth can be seen as a combination of different worldviews, and change is inevitable and constant (Feigenbaum, 2007). DBT is a structured form of psychotherapy that is designed to help individuals learn new skills that can eventually come naturally in times of need, and can be applied across circumstances. The entire DBT program must address five main functions, which include enhancing client capabilities, enhancing client motivation, enhancing generalization, structuring the environment, and enhancing therapist capabilities. The functions are addressed through the skills training group, which is devoted to 1) developing new capabilities, 2) individual therapy sessions to enhance capability and motivation, 2) telephone consultation to increase generalization, 3) case management which helps to structure the environment, 5) and consultation meetings to enhance therapists skills and motivation (Feigenbaum, 2007). The avenues of therapy work in combination to provide individuals an all-encompassing form of therapy.

Within the DBT model, there are two main assumptions. First, the model assumes that individuals suffering from BPD lack imperative self-regulation and interpersonal skills. Second, the use of behavioral or coping skills may be arrested by personal and or environmental circumstances. DBT emphasizes learning to identify stimuli, which trigger dysfunctional behaviors that have been previously learned and reinforced by events within the individual (i.e. reduces anxiety) or in the environment (Feigenbaum, 2007). Through DBT, individuals are taught skills that can help them act and react mindfully to stimuli in their environments.

Mindfulness is taught as the first fundamental skill and is a core component of the skills training group.

DBT Skills Training

While DBT is delivered through different avenues in the treatment setting, the skills training group is where individuals can learn and rehearse new skills. The skills training group consists of four modules: core mindfulness, emotional regulation, interpersonal effectiveness, and distress tolerance. The group in its entirety is approximately 26-32 weeks long and each group is one hour in duration (Linehan, 1993b). Group duration varies on a number of different aspects; the setting in which is it delivered and or taught, participant's retention of information, outside influences, etc.

Mindfulness as Part of DBT

The core mindfulness module is addressed first in the DBT skills training group. Mindfulness is taught as a skill of its own, which works to support other skills taught throughout the program. Learning to be more aware of emotions, cognitions, and internal states is a very valuable therapeutic tool of DBT (Arnold, 2003). Mindfulness is introduced by identifying the "states of mind". These are emotional mind, logical mind, and wise mind. They are presented on a vin-diagram, which is a diagram made from two overlapping circles. Where the two circles overlap, is where commonalities are present. On the DBT states of mind vin-diagram, wise mind is situated in the middle. On one side of the diagram is the "logical mind", which is used to process facts and concrete tasks. On the other side is "emotional mind", which is the state of mind where individuals feel the true depth of their emotions and act based on these emotions. This would include acting impulsively out of anger without giving thought to the possible consequences. "Wise mind" is the ideal state of mind where an individual can act effectively and

make decisions (Arnold, 2003). Wise mind is a place of middle ground and balance; therefore, it shares the space between “logical mind” and “emotional mind”. This is where individuals are truly mindful. They are aware of their feelings and thoughts, and can choose to act in a way that respects their own feelings and goals. Individuals can acknowledge their feelings and choose to behave in a way that would not create negative consequences (Arnold, 2003). Individuals are taught to strive to make decisions in “wise mind”, in order to decrease the possibility of negative consequences that may arise from ineffective behaviors and decisions.

According to Linehan (1993b), “The goal is to develop a lifestyle of participating with awareness; an assumption of DBT is that participation without awareness is characteristic of impulsive and mood dependent behaviors.” Within the core mindfulness module, mindfulness is divided into “what” and “how” skills. The “what” skills include observing, describing, and participating. DBT group members are first asked to observe their thoughts, feelings, and senses. Second, DBT group members are asked to describe their experience by putting it into words. The last skill is to participate, which involves becoming one with their experience. Individuals are asked to get in touch with the moment and let go of any ruminating thoughts. These skills are to be practiced until they become second nature, and individuals can operate from “wise mind” more often than not. By practicing these skills, the goal is that individuals will be able to change harmful situations, change harmful reactions to situations, and accept themselves and situations as they are (Linehan, 1993b). The “how” skills teach individuals how to practice mindfulness non-judgmentally, one-mindfully, and effectively. Individuals are asked to take a non-judgmental stance, focus on only the facts, and accept the moment. One-mindfully means that individuals are to focus on one thing at a time and to concentrate their mind. Lastly, by practicing effectively, individuals are taught to focus on what works, how to act skillfully, and

keep an eye on their objectives. Individuals are also asked to let go of any vengeance and useless anger that may be prohibiting them from acting effectively (Linehan, 1993b). The “how” skills teach individuals how to operate from a more mindful state of mind in situations where they can choose to act effectively or ineffectively. Mindfulness seems to be beneficial in the course of DBT, but its effects have been only partially researched.

DBT Effectiveness: Review of Current Literature

Mindfulness in DBT for Borderline Personality Disorder

In the current literature, there has been little research that specifically explores how mindfulness skills taught in DBT improves the day to day functioning of individuals engaged in DBT treatment. Perroud et al. (2012) have published preliminary results of their findings on mindfulness skills in BPD patients while receiving DBT. Feliu-Solet et al. (2013) have also published preliminary findings on mindfulness training in DBT and its effects of emotional reactivity.

Perroud et al. (2012) used the Kentucky Inventory of Mindfulness Skills (KIMS) in order to measure mindfulness. The KIMS addresses the dimensions of observing, describing, acting with awareness, and accepting without judgment. Overall, DBT was associated with an increase in mindfulness skills over time, and increases in “accepting without judgment” correlated with an improvement in BPD symptoms. This suggests that there was a change in how individuals chose to understand and respond in certain situations. Feliu-Soler et al. (2013) found an improvement in symptoms based on self-report when pre and post-tests were compared. These symptoms included emotional depression, anxiety, and rumination. They also suggest that the amount of mindfulness that participants engaged in did in fact impact the degree of improvement in symptoms (Feliu-Soler et al., 2013).

Perroud et al. (2012) hypothesized that increasing mindfulness and emphasizing "accepting without judgment" in DBT skills training, helped participants to be non-judgmental in their emotional experiences. As a result, participants were less overwhelmed by extreme negative emotions (Perroud et al., 2012). Lastly, Feliu-Soler et al. (2013) reported inconsistent findings regarding the effects of mindfulness on emotional regulation. They hypothesize that mindfulness may be more useful in regulating an individuals' emotional reactions instead of an individual's emotions (Feliu-Soler et al., 2013). Both studies were consistent in reporting that mindfulness plays a key role in reactions and behaviors that can result from the experience of emotions.

The Use of DBT for Other Populations

DBT has also been reported to be effective with populations of people suffering from a wide range of mental illnesses with similar symptoms and behaviors as those suffering from BPD. These populations include individuals with BPD and co-morbid substance abuse, bipolar disorders, personality disorder not otherwise specified, binge-eating disorder, female juvenile offenders, individuals suffering from Attention Deficit Hyperactivity Disorder (ADHD), adults suffering from chronic depression, suicidal behaviors in adolescents, and crisis settings (Feigenbaum, 2007). Research regarding these specific populations explores the effectives of DBT as an entire treatment program, and does not focus specifically on the effectives of mindfulness skills.

Lynch et al. (2003) and Telch, Agras, and Linehan (2001) have investigated the efficacy of the DBT program with different populations. Telch, Agras, and Linehan (2001) focused on adults suffering from Binge Eating Disorder (BED), while Lynch et al. (2003) focused on adults with chronic depression. In both studies, researchers found that the DBT program had been successful in helping clients to change ineffective behaviors and in decreasing symptoms of BED

and chronic depression (Lynch et al., 2003; Telch et al., 2003). Telch, Agras, and Linehan (2003) hypothesized that for those participants suffering from BED, DBT helped them to control and manage urges and actions as they were occurring in the moment rather than emotions. Because of engagement in DBT group program, participants learned to control and manage behaviors that were harmful to their health and that exacerbated the symptoms of their mental illness. For those suffering from chronic depression, participants showed improvements in vulnerability to depression and improvements in coping responses to stressful life experiences (Lynch et al., 2003). This suggests that there was a behavioral shift in coping responses from ineffective to more effective and goal directed behaviors with those participants involved in the DBT skills training group.

The Implementation of DBT Skills Training Program in Mental Health Clinics

Based on the successfulness of DBT with multiple mental illnesses, mental health clinics have begun to implement the DBT skills training program to treat individuals with a number of mental illnesses. Often times, clients are referred to the group not based on diagnosis, but on whether their primary therapist believes that the group would help manage symptoms and behaviors, especially for those clients who struggle with emotional dysregulation, self-harm, and addictive behaviors. Participants in the group suffer from mental illnesses ranging from substance use disorders, depression, bipolar disorder, personality disorders including BPD, mood disorders, posttraumatic stress disorder, depression, and anxiety. The skills training group aims to help these clients learn the skills of mindfulness, emotion regulation, interpersonal effectiveness, and distress tolerance. Participants learn and practice new skills so that they can apply these skills in outside settings. The group aims to help participants learn behaviors that are more effective in order to function at a higher level outside of treatment.

Conclusion

While there is very little research on how the practice of mindfulness helps individuals who suffer from mental illness, it has been shown to improve some symptoms and it can be very beneficial for individuals once they have completed therapy. Whether mindfulness is taught through DBT to individuals suffering from BPD or to a number of different illnesses, there is potential for the benefits of mindfulness to be widespread in many areas of daily living. The full effects and benefits of mindfulness are yet to be explored.

This literature review found that DBT has been effective in helping individuals to change harmful and ineffective behaviors to more goal directed behaviors. Questions remain regarding the role that mindfulness plays within the change of ineffective behaviors to goal directed behaviors. The purpose of the proposed study is to focus solely on the mindfulness module and to research whether mindfulness does in fact help individuals choose goal directed behaviors instead of ineffective and harmful behaviors.

Method

Participants

The maximum number of individuals eligible to participate in the study was 35. This was the total number of clients attending DBT skills training groups at Wayne Behavioral Health Network (WBHN). Adults (18 women, 3 men, age range 18 to 65 years) were recruited via verbal presentation by the researcher. Out of the 35 individuals attending a DBT skills training group, 21 of those individuals agreed to participate in the study. The original number of participants was 21 however; some participants left the group during the study and could no longer participate in the study. Six participants were no longer included in the study due to high absentee rates. Two participants successfully completed the DBT skills training group during the

process of the study. Two of the participants did not answer all of the questions on the third survey and their information was discarded from the study. The final number of participants who completed all of the distributed surveys was thirteen.

Recruitment

In order to be included in this study, participants had to be enrolled in and actively attending a DBT skills training group operating at WBHN. All participants had a primary diagnosis of BPD and were referred to the DBT skills training group by their primary therapist. None of the clients participating in the DBT skills training groups were mandated to attend the group. All willing participants who agreed to participate in the study signed an informed consent before the initial survey was given. Participants were told that they could discontinue their participation at any time during the study. There were no fees, extra credit, or others items that participants obtained through attending the group and answering the surveys.

Materials and Instruments

In order to measure one's level of mindfulness, goal directed, and ineffective behaviors, the Mindfulness Attention Awareness Scale (MAAS) was used. This survey is free to use and score. The MAAS is a single-dimension measure of trait mindfulness and consists of 15 questions. Participants are asked to rate their everyday mindfulness using a six point Likert scale (1-6, "Almost Always", "Very Frequently", "Somewhat Frequently", "Somewhat Infrequently", "Very Infrequently", and "Almost Never"). An example question is "I find it difficult to stay focused on what's happening in the present." Scoring of the MAAS includes scoring all of the items with a number one through six. The average of the responses is then computed. The minimum score is one and the highest score is six. Higher scores indicate a higher level of every-day mindfulness. The MAAS has an internal consistency of .80 to .90. It is also described as

having high test-retest reliability, discriminant and convergent validity, and criterion validity (Brown & Ryan, 2003).

Procedure

The researcher first began by bringing the proposed study to the program supervisor of the Adult Clinic of WBHN. The researcher was instructed to complete the Institutional Review Board (IRB) research proposal. Upon completing the IRB proposal, the researcher provided copies of the proposal to the program supervisor and the director of WBHN. The director of WBHN asked for clarification and edits to be made to the proposal, which was completed by the primary researcher. Once the director and program supervisor approved the proposal, the researcher submitted the IRB proposal to the IRB at the College of Brockport. The study was approved by the IRB on May 11, 2015.

The researcher introduced herself to three different DBT skills training groups at WBHN, and inquired if members were interested in participating in the study. Through her work at WBHN as intern, the primary researcher was granted access to the groups in order to explain the nature and purpose of the proposed study. Surveys and informed consents were distributed and collected by group facilitators, and not by the primary investigator. This was done in hopes that the absence of the primary researcher would not impact the participants' responses on the MAAS. Participants were asked to complete each of the surveys at the beginning of each group session on the day that they were distributed. Informed consents were also signed at the same time as the first distribution of the MAAS. Time to complete each survey was approximately five minutes. Participants were asked to respond honestly and to utilize self-reflection while responding to the survey questions.

A master list was kept of all participants who consented to the study. On the master list, each participant was given a number. Each survey given contained a number listed in the bottom left corner, which indicated the number a certain participant was given. Numbers were used instead of the names of the participants in order to protect their anonymity. Facilitators of the group were given the master list and were aware of the number each participant was given. The primary researcher asked facilitators to distribute the surveys so that each participant received the survey that corresponded to their number on the master list. This was done in order to match pre and post-tests. All of the surveys and the master list were kept in a locked filing cabinet, inside a locked office. Only the primary researcher had access to the master list and surveys once they were collected.

The original proposal stated that surveys were to be distributed four separate times; at the beginning of the module, halfway through the module, once the module was completed, and two weeks after the module had been completed. Surveys were distributed three separate times throughout the study: at the beginning of the module, when the module was completed, and three weeks post module completion. This change was due to differences in the pace of each of the groups (i.e. time it took facilitators to cover material, time it took groups the process information, and attendance of group participants). This modification to the study was also approved by the IRB. The researcher finished collecting data by November of 2015. The averages for pre, post and follow-up tests are included in the tables below. Averages of the MAAS were compared within and across groups in order to identify which participants showed a gradual increase in their averages and participants who did not.

Averages obtained from each distribution of the MAAS in each of the three groups

Group 1	MAAS avg #1	MAAS avg #2	MAAS avg #3

Participant Number			
1	2.86	3.2	2.43
5	2.2	3.133	2.8
6	3.066	3.266	4.133
7	1.133	N/A	N/A
8	3.533	3.266	2.933
9	3.4	3.866	3.533
10	4	4.133	4
11	3.266	3.8	N/A
12	4.933	5.066	5.933
23	2.133	2.2	1.533

Group #2	MAAS avg #1	MAAS avg #2	MAAS avg #3
Participant			
13	3.33	N/A	N/A
14	3.4	3.466	4.4
15	3.133	3.266	2.93
19	1.933	N/A	N/A

Group #3	MAAS avg #1	MAAS avg #2	MAAS avg #3
Participant			
20	2.4	3.866	2.8
21	3.66	3.533	N/A

22	2.66	3.533	4.866
24	3.4	4.866	N/A
25	4.133	4.33	N/A
26	3.2	2.933	3.533
27	4.066	4.33	N/A

Results

Thirteen out of the original 21 participants completed each of the three surveys, resulting in a sample size of 13. This omitted seven of the original 21 participants from the final analysis of the results. Omitted scores are not highlighted in the chart above, and non-completion of a survey is indicated by “N/A”.

Results were found by calculating the average of the scores on each of the three surveys. Four of the 13 participants showed a gradual increase in their averages between pre and post, and follow-up tests. These are highlighted in green in the tables above. Eight of the 13 participants showed an increase between their averages in the pre and post-test, however, these same participants showed a decrease in the averages between the post-test and follow-up test. These are highlighted in yellow. One participant out of the 13 showed a decrease between the pre and post-test, but then an increase between the post and follow-up test. This is highlighted in blue.

As indicated by the data above, it is suggested that only four of the participants showed a gradual increase in mindfulness skills. This supports the hypothesis that scores will gradually increase, and participating in core mindfulness training has an impact on everyday mindfulness, goal-directed, and ineffective behaviors. However, eight of the participants only showed an increase between the pre and post-test, and not between the post and follow-up test. This does

not support the hypothesis that mindfulness scores will gradually increase over the course of the distribution of the three surveys. A conclusion could be made for some participants that participating in the more mindfulness module of DBT skills training helped to increase their levels of everyday mindfulness.

Discussion

Upon analyzing the results, this current study was able to address some of the questions posed by the researcher. The researcher hypothesized that participating in the core mindfulness module of DBT skills training would increase one's level of mindfulness measured on the MAAS scale. The researcher did in fact find a gradual increase in the MAAS averages for four of the participants. For these four participants, MAAS averages increased between all three of the MAAS distributions. The researcher was able to add to the current research on mindfulness conducted by Perroud et al. (2012) and Feliu-Soler et al. (2013). Nine of the 13 participants did show increases in MAAS averages at some point throughout the MAAS distributions. These findings are explored further in the following sections.

Implications

Although the results did not demonstrate statistical significance, the raw data yielded is promising regarding the impact of core mindfulness training on everyday mindfulness levels. The researcher suggests that findings may have been significant if the study had included a greater number of participants. The study only included a total number of 13 participants, which made it difficult to produce significant data. Had the study included more participants, findings may have indicated that core mindfulness gradually increased in a majority of the participants. This would have allowed the researcher to generalize the findings. Only four of the 13 participants showed a gradual increase in their MAAS averages over the course of the study.

This is consistent with the findings of Perroud et al. (2012) and Feliu-Soler et al. (2013) in their suggestion that mindfulness helped change how individuals responded to situations. Both studies were consistent in reporting that mindfulness may play a key role in the reactions individuals have towards certain situations. However, eight of the 13 participants showed an increase in their MAAS averages between the pre and post-tests but a decrease in averages between the post and follow-up tests. It is unclear why these individuals did not have a gradual increase during the study, and what external variables may have contributed to this. Some external variables that could have impacted participants' MAAS averages may have been individual differences among participants such as mood, physiological issues, medical issues, and state of mind at the time the MAAS was distributed.

Another implication to the study could be the amount of time already spent by an individual in a DBT skills training program. A full DBT skills training program suggests the completion of two full 26-week cycles. Perroud et al. (2012) reported that DBT was associated with an increase in mindfulness skills over time, and increases in "accepting without judgment" correlated with an improvement in BPD symptoms. In the current study, some participants who participated in this study had already spent some length of time engaged in DBT skills training. The amount of time spent in DBT skills training may have impacted MAAS averages. It is difficult to determine if individuals who spent more time in DBT skills training were the ones who's scores gradually increased. This is difficult to determine because this variable was not accounted for during the time of the study. Before the study began, the researcher did not identify which participants had participated in DBT skills training for a longer duration of time. It is possible that participants who showed a more significant increase in MAAS averages were the ones who had spent the most time in DBT skills training.

Limitations

One limitation of this study is the small sample size. At the time that the study was proposed, there were 35 individuals enrolled in DBT skills training groups at WBHN. The maximum number of participants was 35. Out of the 35 individuals, 21 of them agreed to participate in the study. Of those 21 participants, only 13 of them completed all three of the distributed surveys. The remaining seven participants left the DBT skills training group during the study either due to successful completion or by choice and treatment non-compliance. This small number of participants makes it difficult to generalize the study. Without generalizability, it cannot be said that the results can apply to the larger population. Replicating the study and increasing the sample size could address the limitations presented by a small sample size. The researcher suggests that sample size could be increased by including other DBT skills training groups that are in operation at multiple agencies in the surrounding area.

Another limitation of this study is that each participant was also receiving individual therapy provided by his or her primary therapist. It may be that during individual therapy sessions, some participants practiced mindfulness skills with their primary therapists while others did not. This could have impacted the continuation of the use of mindfulness skills outside of the group setting because some participants may have received more mindfulness skills training in their individual sessions than others. An increase in mindfulness training outside of the group could have impacted the averages of the MAAS for these participants.

In addition, the amount of time that the researcher allotted for this study is a limitation. If the researcher had spanned the study over the recommended two 26-week cycles, changes in core mindfulness skills could have been observed over a greater length of time. The researcher

would have been able to collect a greater number of MAAS scales by increasing the number of times the MAAS was distributed.

An additional limitation is that this study only included three out of five total DBT skills training groups at WBHN. The two DBT skills training groups that were not included in this study address DBT and co-morbid substance abuse. Including these two additional groups at the agency may have increased the sample size and thus increased the ability to generalize the findings across populations.

Another limitation of this study is the presentation of new material to participants once the core mindfulness module was completed. During the three weeks before the follow-up survey was distributed, the three groups surveyed had moved on to another module within DBT skills training and started to cover new material. The presentation of a new module may have impacted the results of the follow-up survey by bringing to the forefront the issues that other modules addressed. The groups surveyed would have moved on to one of the remaining three modules within DBT skills training. These modules are interpersonal effectiveness, distress tolerance, and emotion regulation.

An additional limitation is that the original proposed study stated that there were to be four distributions of the MAAS. Due to each group moving at a different pace, the MAAS was distributed three separate times. If the MAAS was distributed four times like the original study had proposed, there would have been four MAAS averages for each participant instead of three. Having four MAAS averages for each participant may have shown more variation in decreases and increases than did the amount that was collected with the use of three distributions of the MAAS.

Also, this study only compared overall averages on pre, post, and follow-up MAAS surveys. Each individual question and how each participant chose to answer that question were not examined. Therefore, each question was not examined in its own light and thus, it cannot be concluded that there was a significant change between each question on all three of the distributed MAAS surveys. It cannot be concluded that the participation in core mindfulness had an impact on every ineffective behavior on the MAAS. An example of an ineffective behavior on the MAAS would be, "I find myself preoccupied with the future or past." It would be difficult to determine the level of ineffectiveness of each ineffective behavior questioned on the MAAS, because one might say that the level of ineffectiveness is subjective. For example, the amount of time someone spends preoccupied with the future or past may vary between participants.

Lastly, there was not a control group included in this study. This produces an inability to determine if results would have been similar if the control group did not receive core mindfulness training. By including a control group in the study, it would have shown the differences in the MAAS averages between those who received core mindfulness skills training and those who did not.

Moving Forward

The current study adds to the literature conducted by Perroud et al. (2012) and Feliu-Soler et al. (2013), regarding the impact of core mindfulness skills training on one's level of everyday mindfulness and ineffective behaviors. DBT skills training should continue to be implemented for individuals whom it is intended for: individuals diagnosed with BPD and those referred to DBT skills training groups. Previous research has shown the effectiveness of DBT skills training, which has included all four modules. More recent studies have reported that significant benefits lie within the core mindfulness module.

For future research that attempts to explore core mindfulness skills taught through DBT skills training, the researcher recommends having a larger sample size. This study only involved 13 participants, while the researcher hoped for a total of 35 participants. Through data analysis following the study, the researcher identified that significant statistical results could have been yielded with a greater sample size. In order to achieve greater sample size, recruitment could have been expanded to include the additional two DBT skills training groups that address BPD and co-morbid substance abuse at the agency. In order to recruit participants from the groups that address the diagnoses of BPD and co-morbid substance abuse, the researcher could explain why mindfulness is important, the goals of the study, and how many individuals agreed to participate in the study. The researcher of this study found that participants who were committed to the DBT skills training process were more likely to engage in the study.

A control group with similar demographics to the experimental group would also be beneficial when considering future research. Future researchers could distribute the MAAS to individuals with a primary diagnosis of BPD who are not receiving DBT skills training at the time or those who had never received DBT skills training. This would help to determine the role that DBT core mindfulness played in the changes among MAAS averages.

The researcher also recommends recruiting participants who will not complete DBT skills training during the study. In this current study, the completion of DBT skills training by some participants caused their withdrawal from the study, which resulted in a decreased sample size. It is recommended that future researchers look into individuals just beginning DBT skills training for the first time. In order to successfully complete DBT skills training, an individual must complete two 26-week cycles of DBT skills training. By comparing MAAS averages of

participants who have had no prior DBT skills training, researchers may find greater differences in MAAS averages as compared those who have not completed any DBT skills training.

The current study only investigated short-term results of core mindfulness in DBT skills training. However, a follow-up MAAS was distributed three weeks after the completion of the core mindfulness module. Furthermore, it is recommended that future research analyze core mindfulness skills after the completion of the first and second full 26-week cycle of DBT skills training. This would add to current literature that addressed core mindfulness conducted by Perroud et al. (2012) and Feliu-Soler et al. (2013). Changes in core mindfulness could be observed over the entire DBT skills training program

References

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Arnold, T. G., (2008, January 23). Core mindfulness: dialectical behavior therapy (DBT). Retrieved from http://www.goodtherapy.org/blog/dialtectical-behavior-therapy-dbt-core-mindfulness/

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*, 822-848.

Feigenbaum, J. (2007). Dialectical behavioural therapy: an increasing evidence base. *Journal of Mental Health, 16*, 51-68.

Feliu-Soler, A., Pascual, J. C., Borras, X., Portella, M. J., Martin-Blanco, A., Armario, A., Alvarez, E., Perez, V., & Soler, J. (2013). Effects of dialectical behaviour therapy-mindfulness training on emotional reactivity on borderline personality disorder: preliminary results. *Clinical Psychology and Psychotherapy*. doi: 10.1002/cpp.1837

Linehan, M. M. (1993a). Cognitive Behaviour Therapy of Borderline Personality Disorder. New York: Guilford Press.

Linehan, M. M. (1993b). Skills Training Manual for Treating Borderline Personality Disorder. New York: Guilford Press.

Lynch, T., Morse, J. Q., Mendelson, T., & Robbins, C. J. (2003). Dialectical behavior therapy for depressed older adults. *American Journal of Geriatrtic Psychiatry, 11*, 33-45.

McSherry, P., O'Connor, C., Hevey, D., & Gibbons, P. (2012). Service user experience of adapted dialectical behaviour therapy in a community adult mental health setting. Journal of Mental Health, 21, 539-547. doi: 10.3109/09638237.2011.651660

Perroud, N., Nicastro, R., Jermann, F., & Huguelet, P. (2012). Mindfulness skills in borderline personality disorder patients during dialectical behaviour therapy: preliminary results. *International Journal of Psychiatry in Clinical Practice, 16*, 189-196.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68-78.

Swales, M., Heard, H. L., & Williams, M. G. (2000). Linehan's dialectical behaviour therapy (DBT) for borderline personality disorder: overview and adaptation. *Journal of Mental Health, 9*, 7-23.

Telch, C. F, Argas, W. S., & Linehan, M. M. (2001). Dialectical behavior therapy for binge eating disorder. Journal of Consulting and Clinical Psychology, 69, 1061-1065. doi: 10.1037//0022-006X.69.6.1061

Wupperman, P., Neumann, C. S., Whitman, J. B., & Axelrod, S. R. (2009). The role of mindfulness in borderline personality disorder features. *Journal of Nervous and Mental Disease, 197*, 766-771.