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| Extended Abstract |

Effectiveness of dialectical behavior therapy-online group skills training during the pandemic: A pilot study

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Keywords
dialectical behavior therapy, anxiety, depression, stress, pandemic, therapy effectiveness

Abstract
Dialectical Behavior Therapy (DBT) was developed by Linehan for clients with borderline personality disorder. It is based on behaviorist approach, Zen Buddhism, and dialectical philosophy. There are four components: individual session, group skills training, telephone coaching, and consultation team. DBT group skill training consists of four modules in total, including mindfulness, interpersonal effectiveness, stress tolerance, and emotion regulation skills. Many studies have been conducted on the effectiveness of DBT and DBT group skills training. In this study, the effectiveness of 8-week DBT group skill training in university students on depression, anxiety, and stress levels during the pandemic was investigated. In addition, the improvements in emotion regulation, mindfulness, and interpersonal effectiveness skills were observed. A total of 17 women, who were undergraduate students between the ages of 18-24, participated in the study. An online self-evaluation form was sent to the participants and feedback was given to the applicants by phone call. Sociodemographic Information Form, the Five Facet Mindfulness Questionnaire-Short Form, Difficulties in Emotion Regulation Scale-Brief Form, Interpersonal Competence Questionnaire-Short Form, and Depression Anxiety Stress Scale were sent online to the selected participants before participating in the group skill training, after the 4th session, and at the end of the 8th week. According to the results, DBT group skill training was found to be helpful in reducing depression, anxiety, and stress levels. In addition, an increase was observed in emotion regulation and interpersonal competence skills.

Dialectic Behavioral Therapy (DBT) was developed as a holistic treatment aiming to prevent self-harming and suicidal attempts in clients with borderline personality disorder. It is fundamentally based on behavioral therapy principles, mindfulness, and dialectic philosophy. DBT, in its behavioral dimension, focuses on preventing behaviors that threaten life, hinder treatment, and distort life quality, as well as rectifying the lack of skills. It draws on Zen Buddhist philosophy in its mindfulness dimension and highlights the importance of acceptance for change in its dialectic philosophy dimension (Dimeff & Koerner, 2007; Linehan, 1993). DBT consists four components. These are DBT group skills training (DBT-GST), individual psychotherapy, phone calls where the therapist is available for 7/24 when needed, and weekly consultation team meetings (Linehan, 1993).

From DBT perspective, certain change and acceptance strategies can be adopted to address depression, anxiety, and relationship problems. Various behavioral interventions such as operant conditioning techniques, counter action, problem solving, cognitive restructuring, pros and cons lists, check lists, and role playing can be applied in terms of change strategies; and various skills such as mindfulness, radical acceptance techniques, and validation techniques can be taught in terms of acceptance strategies (Dimeff & Koerner, 2007; Linehan, 1993). Mindfulness and distress tolerance rather reflect acceptance, whereas emotion regulation and interpersonal effectiveness skills rather reflect change (Choudhary & Thapa, 2012; Fruzzetti & Levensky, 2000; Linehan, 1993, 2015; Marra, 2005). When targeted problematic behaviors emerge in the course of therapy, this situation is han-

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dled by the therapist and the client with chain analysis technique in order to decrease anxiety, depression, and interpersonal relationship problems. Diary cards are employed to help clients use the skills they acquired in daily life, reinforce these skills, and track targeted problematic behaviors. In this way, it is aimed to support valid reactions and behaviors of the client in their interpersonal relationships and decrease the symptoms of anxiety and depression (Choudhary & Thapa, 2012; Fruzzetti & Levensky, 2000; Linehan, 1993, 2015; Marra, 2005).

This study investigates the effectiveness of DBT-GST in decreasing the levels of depression, anxiety, and stress in university students, which is one of the groups that are most effected by the uncertainty, systemic changes and limitations brought by the pandemic. Online DBT-GST sessions were conducted during 8 weeks. The current study is expected to make a contribution to the literature because it was conducted online and during the pandemic period. In addition, the procedure and results of this study are expected to provide a guidance for the future studies for there are relatively fewer studies related to DBT compared to other therapy models in the literature. The hypotheses of the current study are as follows:

H1: Participants with lower scores for emotion regulation, mindfulness, and interpersonal relationship skills are expected to have higher scores for depression, anxiety, and stress in the pandemic period.

H2: University students who attended BDT-GST for 8 weeks are expected to display a significant decrease in depression, anxiety, and stress scores in the pandemic period.

H3: University students who attended BDT-GST for 8 weeks are expected to display a significant increase in emotion regulation, mindfulness, and interpersonal effectiveness scores.

METHODS

Participants

The criteria for participating in the study are set to be being an undergraduate student; having trouble with handling depression, anxiety, and stress, and problems with interpersonal relationships; and being able to attend training and assessment sessions regularly. The criteria to be excluded from the study are set to be having active suicidal ideas or displaying suicidal behaviors; the existence of a risk for psychosis or mania; abusing substances; and not being able to meet the regular requirements of the program. 17 university students from various universities and departments, all of whom were females and aged 18 to 24 (M = 21.24; SD = 1.39), participated in the study. Fourteen participants expressed having life changing experiences during the pandemic period such as loss of a family member, moving out to a new place, termination of a friendship or a romantic relationship, shutdown of attended university etc.

Data Collection Tools

Pre-assessment Form Prepared by the researchers to make a preliminary assessment regarding the suitability of individuals to participate in the study.

Phone Calls Conducted by the researchers to determine if the individuals who are thought to be suitable to participate in the study meet the inclusion or exclusion criteria.

Other data collection tools are Sociodemographic Information Form, Five Facet Mindfulness Questionnaire-Short Form, Difficulties in Emotion Regulation Scale-Short Form, Interpersonal Competence Questionnaire-Short Form, and Depression Anxiety Stress Scale.

Procedure

This study was conducted by six PhD students in clinical psychology and one supervisor between October 2020-January 2021. It was designed as quasi-experimental study as it included only an experimental group without a control or comparison group.

Participants are contacted through an online distributed poster. Candidates who wished to participate in the experiment filled an online pre-assessment form. Sixty-six individual who filled the form were assessed with regards to their application motivations, and 37 individuals who were thought to be suitable for the study were interviewed by two researchers on a phone call. Based on the criteria such as the suitability of candidates, the time of day they prefer, and the necessity to assign people who know each other to different groups, 30 individuals were selected, and 22 of these individuals were included in the study. Later on, 3 researchers started 2 different training groups. Online Dialectic Behavioral Therapy Group Skills Training program was conducted for 8 weeks as each week included 1 session and each session lasted for 3 hours. Two sessions were allocated to each module in the following order: mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness. Each session started and ended with mindfulness exercises, and included homework check, handling new topics and new homework assignment respectively. The rule that participants who misses two or more sessions would be considered as dropouts was determined and conveyed to participants at the beginning of the study, and 5 persons dropped out accordingly. Pre-measurement was conducted at the beginning of the 1st session, mid-measurement at the end of the 4th session and post-measurement at the end of the 8th session. Twenty-two individuals attended the first measurement, 20 individuals attended the mid-measurement, and 17 individuals attended the last measurement.

Table 1. Spearman Rank Correlation Analysis Results of the Scales Used in the Study

	Stress Total Score	Depression Total Score	Anxiety Total Score
Act Aware	-0.324	-0.423	-0.343
Nonjudge	-0.198	-0.104	-0.226
Nonreact	-0.210	-0.366	-0.389
Observe	-0.191	-0.423	-0.112
Describe	-0.458	-0.739**	-0.200
Mindfulness Total Score	-0.584*	-0.692**	-0.524*
Clarity	0.403	0.741**	0.341
Goals	0.693**	0.609*	0.605*
Impulse	0.585*	0.886***	0.673**
Strategies	0.599*	0.882***	0.737**
Non-acceptance	0.553*	0.766***	0.777***
Difficulties in Emotion Regulation Total Score	0.665**	0.901***	0.728**
Initiating Relationships	-0.115	-0.566*	-0.115
Emotional Support	-0.158	-0.540*	0.140
Asserting Influence	0.140	-0.068	-0.179
Self-Disclosure	0.196	-0.046	0.265
Conflict Management	-0.124	-0.430	-0.151
Interpersonal Competence Total Score	0.054	-0.372	-0.009
Stress Total Score	-	0.633**	0.590*
Depression Total Score	-	-	0.646**

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

RESULTS

Spearman Rank Correlation test was employed to examine the relationships between stress, depression, anxiety, mindfulness, difficulty in emotion regulation, and interpersonal effectiveness scores (see Table 1). A linear, negative, and strong significant relationship was found between stress and total mindfulness scores (r = -0.584; $p < 0.05$); whereas a linear, positive, and strong significant relationship was found between stress and DERS-16 scores (r = 0.665; $p < 0.01$). There appeared to be no significant relationship between stress scores and interpersonal effectiveness scores (r = 0.054; $p > 0.05$). There was a linear, negative, and strong significant relationship between depression and total mindfulness scores (r = -0.692, $p < 0.01$); and a linear, positive, and very strong relationship between depression and DERS-16 scores (r = 0.901; $p < 0.001$). There was no significant relationship between depression and interpersonal effectiveness scores (r = -0.372; $p > 0.05$). A linear, negative, and strong relationship between anxiety and total mindfulness scores (r = -524; $p < 0.05$); and a linear, positive, and very strong relationship between anxiety and DERS-16 scores (r = 0.728; $p < 0.01$) was observed. No significant relationship was observed between anxiety and interpersonal effectiveness scores (r = -0.009; $p > 0.05$). Lastly, linear, positive, and strong significant relationships were observed between stress and depression scores (r = 0.633; $p < 0.01$); stress and anxiety scores (r = 0.590; $p < 0.01$), and depression and anxiety scores (r = 0.646; $p < 0.01$).

Friedman Test was employed to see if group skills training produced any difference in stress, depression, anxiety, mindfulness, difficulty in emotion regulation, and interpersonal effectiveness scores. Significant differences were observed between pre-intervention ($Me_{Pre\text{-}test}$ = 9), mid-intervention ($Me_{Mid\text{-}test}$ = 7), and post-intervention ($Me_{Post\text{-}test}$ = 4) stress scores (χ^2 = 16.754; $p < 0.001$); pre-intervention ($Me_{Pre\text{-}test}$ = 8), mid-intervention ($Me_{Mid\text{-}test}$ = 5), and post-intervention ($Me_{Post\text{-}test}$ = 3) depression scores (χ^2 = 9.175; $p < 0.05$); and pre-intervention ($Me_{Pre\text{-}test}$ = 7), mid-intervention ($Me_{Mid\text{-}test}$ = 5), and post-intervention ($Me_{Post\text{-}test}$ = 3) anxiety scores (χ^2 = 8.169; $p < 0.05$). In addition, significant differences were observed in pre-intervention ($Me_{Pre\text{-}test}$ = 51) and mid-intervention ($Me_{Mid\text{-}test}$ = 44) total DERS-16 scores, compared to post-intervention scores ($Me_{Post\text{-}test}$ = 30) (χ^2 = 6.677; $p < 0.05$); pre-intervention ($Me_{Pre\text{-}test}$ = 81) and mid-intervention ($Me_{Mid\text{-}test}$ = 87) interpersonal effectiveness scores, compared to post-intervention scores ($Me_{Post\text{-}test}$ = 92) (χ^2 = 7.969; $p < 0.05$); and pre-intervention ($Me_{Pre\text{-}test}$ = 64) and mid-intervention ($Me_{Mid\text{-}test}$ = 64) total mindfulness scores, compared to post-intervention scores ($Me_{Post\text{-}test}$ = 70) (χ^2 = 10.394; $p < 0.01$).

DISCUSSION

This study included an 8-week online intervention of one of the four fundamental components of DBT, namely Dialectic Behavioral Skills Training, in 2 groups of university students who were psychologically affected by the Covid-19 period.

Examining the findings related to the first hypothesis of the study, it is observed that participants with lower mindfulness and higher emotion regulation difficulties scores had higher stress scores; and participants who scored lower in certain sub-dimensions of mindfulness and interpersonal effectiveness, and higher in emotion regulation difficulties had higher depression and anxiety scores. Accordingly, it can be

said that mindfulness, emotion regulation, and interpersonal effectiveness skills can play a protective role against depression, anxiety, and stress during the pandemic period.

In addition to alterations in depression, anxiety, and stress scores, changes in emotion regulation, mindfulness, and interpersonal effectiveness skills were monitored with the measurements taken before (at the beginning of the 1st session), during (at the end of the 4th session) and after (at the end of the 8th session) the skills training. The results suggests that 8-week online DBT skills training significantly helped individuals to handle anxiety, depression, and stress. This finding is in accordance with the results of several studies on the effect of DBT skills training on depression (Lin et al., 2019; Üstündağ-Budak et al., 2019), anxiety (Kazemi et al., 2020; Kia et al., 2020), and stress (Beanlands et al., 2019; Wilks et al., 2017). Another finding of this study indicates a significant increase in emotion regulation skills and observing this increase along with the decrease in anxiety and depression scores is in consistence with the theoretical perspective of DBT and the results of parallel studies in the literature (Chugani et al., 2013; Martin et al., 2017; Rizvi & Steffel, 2014).

The findings related to interpersonal relationship skills show that skills of both receiving support from and giving support to the group increased after 8-week online skills training. The fact that interpersonal skills training was held in the last two weeks of the program is consisted with the finding that the increase in interpersonal effectiveness scores was observed not in the mid-measurement, which was taken at the end of the 4th session, but in the post-measurement, which was taken at the end of the 8th session. A similar increase in interpersonal effectiveness was reported by Accardo (2020), who conducted research on the improvement of social skills in university students with an 8-week DBT-GST intervention.

The differences in mindfulness scores show that both the total score and scores of sub-test measuring act aware and non-judge increased, and this is in accordance with the literature (Mitchell et al., 2019; Zeifman et al., 2020). However, no significant increase was observed in non-judge, observe, and describe. It is possible that a longer skills training period than 8 weeks is required for the acquisition of these skills.

The design of the study brought certain limitations along. The fact that there was no comparison or control groups, and no follow-up efforts were undertaken in the study is one of the most important limitations. A longer training period than 8 weeks with more training sessions can offer a better opportunity for participants to acquire and practice relevant skills. In addition, the fact that there was more dropouts from the Friday training group suggests that training days and hours should be determined more carefully. That all participants in this study were university students raises a question whether online skills training would be as effective in other groups. Furthermore, as all participants were females, the results of this study should be tested with male participants, as well. Further studies including more participants with more homogenous demographic features can help overcoming these limitations and generalizing the results.

Examining the findings altogether, it can be concluded that DBT skills training is an intervention that can be implemented online and offer effective results for university students in handling anxiety, depression, and stress in the pandemic period.

DECLARATIONS

Compliance with Ethical Standards This study was designed and conducted in accordance with the ethical regulations published by the American Psychological Association and the Turkish Psychological Association and was found ethically appropriate by the decision of the Fatih Sultan Mehmet Vakıf University Ethics Committee dated 20/11/2020-40.

Conflict of Interest There were no conflicts of interest between the authors during the preparation of the study, data collection, interpretation of the results, and writing of the article.

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