Implementation and Evaluation of Course-based Training for Dialectical Behavior Therapy Skills in a Turkish University

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Abstract

The main objective of this study was to implement group skills training based upon Dialectical Behavior Therapy (DBT) in a Turkish university, then evaluate its potential in reducing emotional distress (i.e., depression, anxiety, stress) and improving mindfulness and emotion regulation. It also examined the predictors of emotional well-being at the end of the intervention period. A total of 69 senior psychology students underwent a 14-week modified DBT skills training course in three separate groups in a classroom environment. Participants completed questionnaires related to mindfulness, emotion regulation, and emotional distress at the beginning and end of the intervention. The end results demonstrated significant reductions in anxiety and stress, and significant increases in mindfulness and emotion regulation. There was a significant positive association between baseline and post-intervention levels of emotional distress. Better emotional regulation predicted lower emotional distress at the end of the training. Participants with higher emotion regulation difficulties at baseline were more likely to benefit from the intervention. This study contributed further evidence to the potential of DBT skills training as an evidence-based approach to address the emotional well-being of university students. It also provided initial data for how the DBT skills training might work as a well-being approach in a nonclinical setting. Larger-scale controlled studies, including students from diverse backgrounds, are required to generalize the findings of the study.

Keywords: Dialectical behavior therapy skills training, university students, well-being, emotion regulation, mindfulness, emotional distress

Improving resilience and preventing the mental health problems of university students is a significant public health issue. Research focused on age-of-onset distributions consistently indicates that young people are at a greater risk for developing mental health problems (Kessler et al., 2007; Kessler et al., 2005). Furthermore, in a more recent study conducted on 13,984 respondents from 19 colleges across eight countries, approximately one-third of the students reported at least one DSM-IV diagnosis for mood, anxiety, or substance disorders (Auerbach et al., 2018). The onset and persistence of depression and anxiety coincided with the years at university, with prevalence rates of 21.2% and 18.6%, respectively (Bruffaerts et al., 2019). The mental health disparity for age was further pronounced during the COVID-19 pandemic, which indicates elevated rates for depression and anxiety in this population (Kessler et al., 2022; Kohls et al., 2021). Yet, in a cross-cultural sample, only 24.6% of first-year university students were willing to seek treatment for emotional problems and they reported that stigma was a significant barrier to seeking professional support (Ebert et al., 2019).

Students need to develop strategies to adapt to several changes during the transition to university,

including their environment, financial status, social relations, and academic life. These changes involve a range of challenges, including homesickness, loneliness, confusion, the fear of rejection, the lack of confidence, disappointment, worry, depression, anxiety, and stress (Brown, 2018). Social life and close relationships are critical for overall role impairment during the university years (Alonso et al., 2018). Furthermore, students report increased levels of emotional distress, with especially pronounced rates for anxiety and stress throughout their education (Bewick et al., 2010). Therefore, it is vital to provide them with the skills needed to manage their interpersonal relationships, regulate challenging emotions, and tolerate distress.

There have been recent attempts to design and implement the course-based delivery of positive psychological skills in university campuses to promote the mental health and well-being of university students (Chugani et al., 2020). Although such course-based approaches might reduce the stigma that is attached to help-seeking behaviors and teach skills to enhance well-being and resilience, there is currently a lack of evidence for their impact on university students. To address this gap, a course-based intervention, which utilized Dialectical Behavior Therapy group skills training, was implemented at a Turkish university to examine its potential for the improvement of the emotional well-being of university students.

Dialectical Behavior Therapy

Dialectical Behavior Therapy (DBT) is a cognitive-behavioral treatment approach that is efficacious in treating people with dysregulated emotions and behavior (Linehan, 1993, 2015a, 2015b). Initially developed for people with borderline personality disorder and chronically suicidal behavior (Linehan, 1993), DBT was successfully adapted for transdiagnostic samples, proving to be effective for people with eating disorders (Safer et al., 2010), depression (Lynch et al., 2003), post-traumatic stress disorder (Bohus et al., 2013), and substance dependence (Linehan et al., 2002).

The primary rationale of DBT is to teach how to regulate emotions. It adopts a dialectical philosophy that synthesizes the cognitive-behavioral concepts of change with the Zen/contemplative practices of acceptance in order to address the dysregulation of one's emotions (Linehan, 1993, 2015a, 2015b). The treatment combines individual psychotherapy, group skills training, telephone coaching, and therapist consultation meetings (Linehan, 1993, 2015b). In standard DBT, all of the treatment components are provided. The treatment is organized in stages. Therapists are instructed to prioritize target behaviors in a hierarchical order of severity. These target behaviors range from imminent life interfering behaviors (Stage 1), emotional suffering (Stage 2), common problems in living (Stage 3), and incompleteness (Stage 4) (Linehan & Wilks, 2015). While severe to moderate dysfunction constitutes the treatment objectives of Stages 1 and 2, minor dysfunction and well-being are the focus of therapy in Stages 3 and 4 (Linehan & Wilks, 2015).

DBT Group Skills Training

Group skills training is part of the standard DBT program, which synthesizes cognitive-behavioral change strategies with mindfulness-based acceptance strategies in order to improve skills related to the management of interpersonal relationships, difficult emotions, and distress (Linehan, 2015a, 2015b). DBT group skills training addresses four aspects of emotion dysregulation in separate skills modules that are integrated under change skills (i.e., interpersonal effectiveness, emotion regulation) and acceptance skills (i.e., mindfulness, distress tolerance) (Linehan, 2015a, 2015b). Mindfulness is the core skill. Its concepts are integrated into the other skills taught in the training. Mindfulness teaches how to be aware of the present moment, without judgement, and encourages effective participation in the moment-to-moment experience. The distress tolerance skills address the strategies to temporarily tolerate events and circumstances that are associated with high impulsivity and maladaptive behaviors. Interpersonal effectiveness skills teach how to manage interpersonal conflicts, maintain relationships, and balance acceptance and change in relationships. The goal of emotion regulation

skills is to reduce emotional suffering and better manage the control of emotions.

Mindfulness skills play a central role in the regulation of emotions, and they are the core skills taught in DBT group skills training (Linehan, 2015a, 2015b). Lynch et al. (2006) listed three change processes that mindfulness may facilitate for emotion regulation in DBT. First, the acceptance-based behavioral exposure enhances new learning in response to emotional stimuli, which results in reductions in ineffective action tendencies and maladaptive cognitive interpretations (Lynch et al., 2006). Second, absolute beliefs that connect specific thoughts to certain outcomes are diminished by introducing the meta-cognitive awareness that thoughts are just thoughts and they may not necessarily reflect the truth (Lynch et al., 2006). And, third, mindfulness helps detach from emotional stimuli by teaching better control of attention (Lynch et al., 2006).

There has been increasing interest in the administration of DBT skills training as a stand-alone approach in clinical settings, and there is accumulating evidence to indicate its effectiveness on symptom reduction, interpersonal functioning, and emotional well-being in transdiagnostic samples, including people with borderline personality disorder, eating disorders, substance use disorders, and mood disorders (Valentine et al., 2015). A recent meta-analysis demonstrated that stand-alone DBT group skills training was associated with overall symptom reduction and improved emotion regulation in people with common mental health problems (Delaquis et al., 2022). The implementation of the skills was a significant mechanism for change (Mehlum, 2021). Also, improved mindfulness and emotion regulation skills were critical in predicting treatment gains (Mehlum, 2021).

Currently, the evidence for the feasibility and potential of DBT skills as a well-being approach in nonclinical settings, particularly with university students, is limited. Yet, DBT skills correspond to the positive psychological skills necessary for successful management of the challenges of university life. Mindfulness and its relationship to emotional well-being is well documented in the literature (Sedlmeier et al., 2012). Social life and close relationships are critical elements within overall role impairment during university years (Alonso et al., 2018). Thus, it is of utmost importance to provide students with effective interpersonal skills to manage their relationships. University students report increased levels of emotional distress – especially pronounced rates of anxiety and stress – over the course of their university education (Bewick et al., 2010). Therefore, skills necessary to regulate challenging emotions and tolerate distress may contribute to their well-being during their university years and to their hardiness and resilience for the subsequent developmental stages in their lives.

DBT in University Settings

The DBT group skills training was mostly utilized as a treatment approach that was connected to the counseling centers in university settings. The treatment delivery included adaptations of the standard DBT program or the implementation of modified versions. Studies that investigated the effects of the standard DBT program were conducted with students with borderline personality disorder. They indicated the feasibility (Engle et al., 2013) and efficacy (Pistorello et al., 2012) of the intervention in this setting. Brief forms of group skills training were feasible and associated with improved outcomes when offered as an adjunct to individual psychotherapy (Chugani, 2017; Chugani et al., 2013; Meaney-Tavares & Hasking, 2013; Panepinto et al., 2015). Studies also demonstrated the efficacy of DBT skills training as a stand-alone treatment in treatment-seeking students with attention deficit hyperactivity disorder (Fleming et al., 2015) and significant psychopathology (Uliaszek et al., 2016).

The evidence for the potential of DBT group skills training to improve the emotional well-being and resilience of university students is currently scarce. In one study, a modified eight-week DBT group skills training was associated with reduced stress and improvements in resilience, self-compassion, well-being, and mindfulness in senior nursing students (Beanlands et al., 2019). In another study, undergraduate students with emotion-regulation difficulties reported

improvements in emotion regulation, affect, and academic performance following brief forms of DBT skills training (Rizvi & Steffel, 2014). A course-based DBT-infused skills training was introduced in a recent study protocol and the findings from the quasi-experimental examination of the effectiveness of the intervention as a well-being and resilience approach is yet to be published (Chugani et al., 2020).

Two studies were conducted with Turkish university students and they provided preliminary evidence for the feasibility and potential of DBT skills training in this population. In a pilot randomized controlled trial, students with emotion dysregulation who enrolled in a modified eight-week DBT skills training reported improvements in emotion regulation compared to a wait-list control condition at the end of the intervention period (Gülgez & Gündüz, 2015). Another study demonstrated that a modified eight-week DBT skills training was associated with reductions in psychological distress in students with adjustment-related problems (Üstündağ-Budak et al., 2019).

Current Study

Building on these previous findings, a course-based DBT group skills training program was implemented at a state university in Turkey. The first aim was to examine whether the intervention was associated with reductions in emotional distress (e.g., depression, anxiety, stress) and improvements in mindfulness and emotion regulation among senior psychology students. This study expanded upon previous findings by recruiting a larger sample of Turkish university students and by developing course-based content that was delivered over 14 weeks. Also, it provided initial data on the potential of the course-based delivery of DBT group skills training as a well-being approach to university students.

The second aim of this study was to investigate the predictors of emotional well-being at the end of the intervention period. Specifically, the roles of mindfulness and emotion regulation were examined because they are suggested to be the primary mechanisms of change in DBT (Linehan, 1993) and the available research demonstrated

their significant roles in the explanations for the treatment gains in clinical samples. By examining the roles of mindfulness and emotion regulation in a sample of university students, this study provided initial data on how DBT skills training might work to enhance emotional well-being in a nonclinical setting.

Method

Participants

Participants (N=69) were senior undergraduate students of psychology at Bursa Uludağ University who underwent a modified 14-week DBT skills training in three separate groups in a classroom environment. The training was delivered as an elective course. Students were informed about the study at the outset of the class. Those who volunteered to participate gave informed consent. The first group consisted of 24 participants, the second group consisted of 20 participants, and the third group consisted of 25 participants. The Research Ethics Committee of Bursa Uludağ University approved this study.

Procedure

The participants were enrolled in a modified 14-week DBT group skills training. Group sessions were two-and-a-half hours long every week and included a small break. The training was delivered by the author, who received intensive DBT skills training by the Linehan Institute (Behavioral Tech, LLC), the official training company, and who attended consultation meetings for the program implementation. The participants completed the study questionnaires (see measures below) at the beginning and the end of the training. The questionnaires were randomly ordered to reduce response bias.

Training

Adaptations of the standard DBT skills training may be utilized depending on the needs of the population and the resources available in the setting (Linehan, 2015b). In the current study, a

modified program was used. It consisted of mindfulness as the acceptance-based skill and interpersonal effectiveness and emotion regulation as the change-based skills. Mindfulness skills were chosen because they are the core skills taught and integrated with other skills in the training (Linehan, 2015a, 2015b). The dysregulation of emotions was directly addressed with strategies taught as emotion regulation skills; thus, they were also included. Problems related to interpersonal interactions in social and cultural activities and difficulties with opposite-sex friendships were frequently reported among Turkish university students (Özkan & Yılmaz, 2010; Yavuzer et al., 2005). Therefore, interpersonal effectiveness skills were preferred over distress tolerance skills to fit the 14-week training period. The handouts and worksheets (Linehan, 2015a) were chosen based on the content taught in the DBT Skills Training Manual (Linehan, 2015b). The material was similar to a previous DBT skills training intervention, which was shown to be feasible among Turkish university students (Üstündağ-Budak et al., 2019).

The order of the skills included mindfulness, interpersonal effectiveness, and emotion regulation, respectively. Session 1 aimed to generate participants' enthusiasm for learning new skills and using them daily. The rules of the training were also clarified in this session. Sessions 2-5 were dedicated to mindfulness skills, which introduced the core mindfulness skills of "wise mind", "what" skills, and "how" skills. The core interpersonal effectiveness skills were delivered during Sessions 6-10 and included strategies for obtaining objectives while maintaining relationships and self-respect. Emotion regulation skills were provided between Sessions 11-14 and focused on understanding and describing emotions and their functions, and the skills to regulate emotions. The content and examples were adjusted to reflect the challenges of university life, including interpersonal relationships and emotional difficulties. Homework assignments were scheduled in between the sessions to increase the practice of the skills learned and enhance their generalizability to everyday life.

Measures

Depression Anxiety Stress Scale – 42

The Depression Anxiety Stress Scale is a 42-item questionnaire designed to assess the negative affective states of depression, anxiety, and stress (Lovibond & Lovibond, 1995). Respondents indicate how each item applied to them over the previous week on a 4-point Likert scale. Each subscale consists of 14 items. Higher scores indicate the increasing severity of negative emotional states. A composite measure is obtained by averaging the scores or summing the subscale scores. Cut-off scores are provided for each subscale to indicate the degree of the severity of the problem. Scores ranging between 0-9 for depression, 0-7 for anxiety, and 0-14 for stress are in the normal/functional range. Scores above these ranges define "mild" to "extremely severe" cases. The three-factor structure of the scale was supported with sufficient convergent and discriminant validity (Antony et al., 1998; Crawford & Henry, 2003; Lovibond & Lovibond, 1995). The internal consistencies of the subscale scores were high (Cronbach's alphas .91, .84, and .90 for depression, anxiety, and stress, respectively) (Lovibond & Lovibond, 1995).

Studies that examined the psychometric properties of the Turkish version of the Depression Anxiety Stress Scale supported the three-factor structure of the scale and indicated sufficient internal consistency (Bilgel & Bayram, 2010; Hekimoglu et al., 2012; Uncu et al., 2007). It exhibited adequate convergent validity with the measures of anxiety and depression, and it could discriminate between clinical and nonclinical populations (Bilgel & Bayram, 2010; Hekimoglu et al., 2012). Bilgel and Bayram (2010) determined the cut-off scores for the depression and anxiety subscales in a sample of Turkish university students using receiver operating characteristics. Similar to the original suggestions, the cut-off scores with the highest specificity and sensitivity were determined to be 9 for depression and 7 for anxiety. In the current study, the total and subscale scores were used to evaluate participants' emotional distress. The internal consistencies of the total and subscale scores ranged between .75 and .94.

Difficulties in Emotion Regulation Scale

The Difficulties in Emotion Regulation Scale is a 36-item instrument designed to measure clinically relevant difficulties in emotion regulation (Gratz & Roemer, 2004). The respondents indicate how frequently they engage in several dimensions of emotion regulation when they experience negative affect on a 5-point Likert scale (1 = almost never, 5 = almost always). Higher scores indicate greater difficulty in regulating emotions. The scale's psychometric properties were investigated in two undergraduate samples in the original study and they revealed six subscales to measure distinct and related dimensions of emotion regulation (Gratz & Roemer 2004). These included the lack of emotional awareness (e.g., "When I'm upset, I acknowledge my emotions"); the lack of emotional clarity (e.g., "I have difficulty making sense out of my feelings"); the nonacceptance of emotional responses (e.g., "When I'm upset, I feel guilty for feeling that way"); difficulties engaging in goal-directed behavior (e.g., "When I'm upset, I have difficulty concentrating"); impulse control difficulties (e.g., "When I'm upset, I lose control over my behaviors"); and limited access to emotion regulation strategies (e.g., "When I'm upset, I believe that I'll end up feeling very depressed"). The internal consistency of the total scale score was high (Cronbach's apha = .93), and the Cronbach's alphas ranged between .80 to .89 for the subscale scores. In a small subsample, the scale also had good test-retest reliability (intraclass correlation = .88). It yielded significant correlations in the expected direction for the measures of experiential avoidance, emotional expressiveness, and expectancies for negative mood regulation.

The psychometric properties of the Turkish version of the Difficulties in Emotion Regulation Scale were examined in a sample of university students, and the original 6-factor solution was retained (Ruganci & Gencoz, 2010). The Cronbach's alpha coefficient of the total scale score was .94, and the Cronbach's alpha coefficients of the subscale scores ranged between .75 and .90. The test-retest reliability was .83. The total and subscale scores were significantly correlated with a measure of general psychological distress, indicating the convergent validity of the scale. Besides, it could discriminate the respondents scoring high versus low on psychological distress. In the current study, the total scale score was used as a general indication for the emotion regulation difficulties of the participants. The internal consistency of the total scale score was adequate: .92 (baseline) and .93 (post-intervention).

Mindfulness Attention Awareness Scale

The Mindfulness Attention Awareness Scale is a 15-item questionnaire designed to measure mindfulness as an individual disposition (Brown & Ryan, 2003). Mindfulness is conceptualized as a state of consciousness. The Mindfulness Attention Awareness Scale focuses specifically on the "present-centered attention-awareness" of this consciousness state (Brown & Ryan, 2003). As such, mindfulness is considered to differ between persons based on the respective inherent capacity and it varies on an intra-individual basis. The respondents indicate the frequency that they experience this consciousness state on a 6-point Likert scale (1 = almost always, 6 = almost never), where higher scores reflect more mindfulness. The psychometric properties of the scale were examined in a sample of university students and yielded a single-factor solution with an average factor loading of .52. In a separate sample using confirmatory factor analysis, the single-factor solution of the scale had a good fit, and all items of the scale were significantly related to the latent structure. The test-retest reliability (intraclass correlation = .88) was satisfactory. The scale had adequate convergent and discriminant validity and it was significantly associated with measures of well-being.

The psychometric properties of the Turkish version of the Mindfulness Attention Awareness Scale were examined among community samples of adults (Catak, 2012). The Cronbach's alpha coefficient of the total scale score was .85, and the single-factor structure of the scale was acceptable with factor loadings .30 and above. The test-retest reliability yielded a correlation coefficient of .83. It was negatively associated with measures of thought suppression, emotional suppression, and impulsivity, but positively correlated with

measures of well-being. The scale had adequate internal consistency in the current study: .83 (baseline) and .88 (post-intervention).

Statistical Analysis

Descriptive statistics were reported for emotional distress (i.e., total and subscale scores of the Depression Anxiety Stress Scale), mindfulness (i.e., Mindfulness Attention Awareness Scale), and emotion regulation difficulties (i.e., total score of the Difficulties in Emotion Regulation Scale) at pre- and post-training, including means and standard deviations. Paired-sample t-test statistics were used to assess the changes in the study variables. The effect sizes for paired comparisons were calculated using the Cohen's d statistic. The associations between pre- and post-test scores were examined using Pearson correlation coefficients. A hierarchical linear regression analysis was conducted to determine whether higher mindfulness and emotion regulation scores predicted lower emotional distress at post-intervention. The analysis controlled for baseline levels of emotional distress, mindfulness, and emotion regulation difficulties to account for the initial differences between the participants. By controlling the baseline levels of the outcome and predictor variables, the model estimated the changes from the baseline to the end of the intervention period. The analyses were run using the IBM SPSS Statistics (Version 28). A two-tailed $\alpha = 0.05$ was applied to statistical testing.

Results

The sample included 69 participants, and the majority of the participants were female (N = 62; 89.9%). The mean age was 22.8 (SD = 1.81; range = 21–36). Table 1 shows the paired-sample t-test statistics for the study variables. The results indicated significant reductions in the anxiety and stress subscales of the Depression Anxiety Stress Scale from baseline to post-intervention. However, reductions in the depression subscale score and total scale score were not significant. The Difficulties in Emotion Regulation Scale total score was significantly lower and indicated better emotion regulation by the end of the intervention. There was also a statistically significant increase in mindfulness with a medium effect size as measured by the Mindfulness Attention Awareness Scale.

Table 1

Descriptive Statistics and Paired-sample t-tests Pre- and Post-DBT Group Skills Training

	Pre-DBT GST		Post-DBT GST		t	df	p	Cohen's d
	Mean	SD	Mean	SD				
DASS	32.63	13.75	28.84	16.39	1.70	63	.09	.21
Depression	8.84	5.97	8.36	7.43	0.47	66	.64	.06
Anxiety	**8.36**	**4.58**	**7.07**	**4.63**	**2.18**	**66**	**.03**	**.27**
Stress	**15.92**	**5.89**	**13.56**	**6.34**	**2.57**	**65**	**.01**	**.32**
MAAS	**53.80**	**10.17**	**60.18**	**10.69**	**-4.89**	**65**	**< .001**	**.60**
DERS	**91.78**	**18.36**	**83.98**	**17.36**	**2.93**	**63**	**.005**	**.37**

Table 2 shows the Pearson correlation coefficients between the study variables at pre- and post-DBT group skills training. The results demonstrated that the initial level of emotional distress was positively associated with emotional distress at the end of the intervention period. In other words, those who reported higher emotional distress at baseline were more likely to report emotional distress at post-intervention as well. Baseline and post-intervention mindfulness scores were positively correlated. Similarly, there was a significant positive association between emotion regulation difficulties at pre- and post-training evaluations. Thus, the participants with higher mindfulness and emotion regulation skills at baseline were also more likely to report higher skills at the end of the intervention period.

At baseline, mindfulness and emotion regulation were negatively correlated, indicating that participants who were less skilled in mindfulness were more likely to have emotion regulation difficulties. Also, there was a positive association between emotion regulation difficulties and emotional distress. At post-intervention, there were significant associations between mindfulness, emotion regulation difficulties, and emotional distress. Accordingly, higher mindfulness was negatively associated with emotion regulation difficulties. In addition, participants with higher mindfulness and better emotion regulation were more likely to report lower emotional distress.

Table 2. *Pearson Correlations between the Study Variables Pre and Post Group Skills Training*

Variables	1	2	3	4	5	6
1. Pre-DASS	1					
2. Post-DASS	.32*	1				
3. Pre-MAAS	-.07	.03	1			
4. Post-MAAS	.12	-.37**	.48**	1		
5. Pre-DERS	.44**	-.03	-.39**	-.07	1	
6. Post-DERS	.22	.55**	-.15	-.49**	.29*	1

Note. DASS = Depression Anxiety Stress Scale total score; MAAS = Mindfulness Attention Awareness Scale; DERS = Difficulties in Emotion Regulation Scale. * $p < .05$; ** $p < .01$

Table 3 presents the results of the hierarchical linear regression analysis to predict reductions in emotional distress at the end of the intervention period. The first block included the baseline levels of the outcome (i.e., Depression Anxiety Stress Scale total score) and predictor variables (i.e., Difficulties in Emotion Regulation Scale total

score, Mindfulness Attention Awareness Scale score). The results revealed that the baseline emotional distress, emotion regulation difficulties, and mindfulness scores contributed significantly to the model ($R^2 = .22$, F (3, 54) = 5.18, p = .003). Introducing the post-intervention levels of mindfulness and emotion regulation contributed

an additional 29% variance in Block 2 (F (2, 52) = 14.89, p < .001). The final model was statistically significant (R^2 = .51, F (5, 52) = 10.66, p < .001).

The results demonstrated that higher emotional distress at baseline was predictive of post-intervention emotional distress in both stages of the analyses. Higher reported emotion regulation at the end of intervention predicted reductions in emotional distress. Also, participants with higher emotion regulation difficulties at baseline were more likely to report lower emotional distress at the end of the intervention period. No other variables were significantly associated with emotional well-being.

Table 3. *Hierarchical Linear Regression Analysis Predicting DASS scores at Post-DBT Group Skills Training*

	b	95% CI[a]	β	T	*p*
Block 1					
Pre-DASS	**0.68**	**.33; 1.03**	**.52**	**3.93**	**<.001**
Pre-MAAS	-0.16	-.58; .26	-.1	-0.75	.457
Pre-DERS	-0.19	-.46; .08	-.2	-1.4	.167
Block 2					
Pre-DASS	**0.62**	**.33; .91**	**.47**	**4.25**	**<.001**
Pre-MAAS	0.14	-.27;.55	.08	0.67	.504
Pre-DERS	**-0.29**	**-.52; -.06**	**-.30**	**-2.49**	**.016**
Post-MAAS	-0.40	-.82; .02	-.27	-1.92	.061
Post-DERS	**0.38**	**.14; .62**	**.41**	**3.19**	**.002**

Note. DASS = Depression Anxiety Stress Scale total score; MAAS = Mindfulness Attention Awareness Scale; DERS = Difficulties in Emotion Regulation Scale. [a] 95% confidence interval for b. Significant p values are shown in bold.

Discussion

The current study examined the changes in emotional distress, mindfulness, and emotion regulation following a course-based DBT group skills training program at a Turkish university. It contributed to previous findings by examining a larger sample of students and by providing initial data for the predictors of emotional well-being when the intervention was delivered in a nonclinical setting among university students.

The findings showed that the DBT group skills training was associated with increased emotion regulation by the end of the intervention period.

Furthermore, higher reported emotion regulation was predictive of lower emotional distress in post-intervention assessments. Emotion regulation is the primary mechanism of change for the theoretical conceptualization of DBT, and the main objective of DBT is to teach clients to regulate their emotions (Linehan, 1993, 2015a, 2015b). DBT skills are critical to this end because they directly address the lack of skills related to the regulation of emotions. Previous research supported the idea that emotion regulation was crucial for symptom improvement, interpersonal functioning, and emotional well-being in clinical samples following DBT skills training (Delaquis

et al., 2022; Valentine et al., 2015). The current study expanded on that and showed that emotion regulation could explain improvements in emotional well-being following a course-based DBT skills training program in a sample of university students with mild psychological distress.

There was a significant increase in mindfulness from baseline to the end of the intervention period in the current study. The effect size that assessed the magnitude of change for mindfulness was medium and indicated that the intervention resulted in significant improvements in the participants' capacity to pay attention and be receptive to inner and outer experiences. Significant associations between mindfulness and emotion regulation were also observed in pre- and post-intervention assessments, demonstrating that these concepts are connected. However, mindfulness did not significantly predict emotional well-being at the end of the intervention in the hierarchical linear regression analysis.

Emotions are viewed as consisting of actions and action tendencies in DBT. A failure in their regulation – up and down control of emotions – is connected to maladaptive behaviors and mental illnesses (Linehan, 1993). Mindfulness skills are critical for the cultivation of emotion regulation and they are the core skills taught in the DBT group skills training program (Linehan, 2015a, 2015b). Following these theoretical assumptions, it can be argued that the predictive role of mindfulness on the reduction of emotional distress might have been attenuated because it is more closely connected to the cultivation of skills to regulate emotions in the DBT skills training. In the present study, the assessments were conducted at the beginning and at the end of the intervention period. Therefore, it was not possible to examine whether the changes in mindfulness skills preceeded the changes in emotion regulation. Multiple assessments that measure mindfulness and emotion regulation skills over the course of the training may provide more insights into the temporal relationships between these variables.

At the same time, mindfulness involves several facets, including observing, describing, acting with awareness, non-judging inner experience, and non-reactivity to inner experience (Baer et al.,

2006). In the current study, mindfulness was assessed only as a single dimension with the Mindfulness Attention Awareness Scale, which identified it as present-centered attention-awareness. It is possible that other facets of mindfulness that are not examined in the current study might explain improvements in emotional well-being. This suggestion is supported by previous research that showed a close connection between mindfulness and emotional well-being in nonclinical samples (Sedlmeier et al., 2012) and by studies that demonstrated mindfulness as a critical predictor of emotional well-being and symptom reduction in clinical samples following DBT (O'Toole et al., 2012, Perroud et al., 2012). Therefore, future research studies could investigate the specific associations between the various facets of mindfulness and how they are associated with emotional well-being following the course-based delivery of DBT group skills training in university students.

There were significant reductions in negative affective states of anxiety and stress at the end of the intervention period. The participants' anxiety and stress scores were in the mild range of severity at baseline and significantly reduced to the normal range at post-intervention. A substantial portion of Turkish university students report mental health problems (Üner et al., 2008), including symptoms of depression (27.1%), anxiety (47.1%) and stress (27%) (Bayram & Bilgel, 2008). Despite the prevalence of mental health problems, they are reluctant to seek psychological help and turn mostly to family and friends for support (Erkan et al., 2012; Kızıldağ et al., 2013; Topkaya & Meydan, 2013; Türküm et al., 2004). Furthermore, similar to studies conducted in other countries, Turkish students tend to view psychological problems as part of university life and believe that they should be managed individually (Kacur & Atak, 2011; Koydemir et al., 2010). The current findings are encouraging because they indicate the feasibility and potential of DBT group skills training in reducing university students' anxiety and stress symptoms, and they are consistent with previous research that showed improved outcomes in university settings following DBT skills training (Beanlands et al., 2019; Gülgez & Gündüz, 2015; Rizvi & Steffel, 2014; Üstündağ-Budak et al., 2019).

Nevertheless, the DBT group skills training was not significantly associated with reductions in depression symptoms. Although the changes in the total scale score on the Depression Anxiety Stress Scale was in the expected direction, the observed reduction was not statistically significant by the end of the intervention period. The treatment outcome is closely associated with the baseline severity of the outcome measures in the intervention studies (Nunes et al., 2011). The current intervention was delivered in a nonclinical setting, and the total scale and depression subscale scores of the Depression Anxiety Stress Scale was already in the normal range at baseline. Furthermore, the mean depression subscale score was lower than that reported in a previous representative sample of Turkish university students (Bilgel & Bayram, 2010). One possible explanation for the insignificant findings might be related to the relatively small sample size. Given that the majority of the participants were on the functional range regarding their total emotional distress and depression scores, the power to detect changes might have been limited. Yet, it should be noted that a previous study with senior nursing students was also unable to find significant reductions in total and depression subscale scores on the Depression Anxiety and Stress Scale following DBT group skills training (Beanlands et al., 2019). Hence, further research to ascertain the effects of DBT group skills training on depression symptoms is required when it is delivered as a well-being approach to university students.

Baseline emotion regulation difficulties were predictive of lower reported emotional distress at the end of the intervention period. This finding indicates that students who reported difficulties in regulating their emotions at baseline were more likely to benefit from the intervention. The results also demonstrated that emotion regulation was a significant predictor of gains attained at the end of the training because students with better emotion regulation were less likely to report emotional distress in post-intervention assessments. Linehan (1993) proposes a biosocial theoretical framework to explain the transaction between biological vulnerability and an invalidating environment that leads to dysregulation in emotions (Linehan, 1993). Biological vulnerability is associated with high sensitivity to emotional stimuli, intense emotional experiences, and difficulty in returning to the emotional baseline (Linehan, 1993). An invalidating environment involves social, familial, and cultural experiences that punish or trivialize the emotional experiences and hinder the opportunity for learning the necessary skills to regulate emotions (Linehan, 1993). The present findings, which demonstrated emotion regulation difficulties at baseline and improvements in emotion regulation at post-intervention as significant predictors of emotional well-being, might point to the validity of the intervention strategy of DBT. In other words, the current findings suggest that the DBT group skills training might function in a similar way to its theoretical propositions when it is delivered as a well-being approach in a nonclinical setting. Although further research would be required to generalize this interpretation, the main rationale of DBT, which specifically addresses emotion regulation, could be a viable route to foster emotional well-being and prevent emotional problems among university students.

Implications

Participants who experienced higher levels of emotional distress at baseline were more likely to report emotional distress at the end of the intervention period. This finding aligns well with the assumption that providing support to university students in Turkey is significant and timely. Also, the intervention was associated with significant benefits in emotional well-being for participants who already represented mild emotional distress and emotion regulation difficulties at baseline, which could have some practical implications for the prevention programs that intend to utilize DBT group skills training in university settings. The prevention approaches are mainly classified into three categories based on their target group: universal, selected, and indicated (Barnett et al., 2021; Harrer et al., 2019; Rith-Najarian et al., 2019). Accordingly, the universal strategies address the whole population or the target group without selection criteria. The selected approaches are delivered to individuals who are identified to have a higher risk than average for developing a particular condition. The indicated strategies are offered to high-risk

individuals who are vulnerable to developing a mental illness or who already present subthreshold symptoms and signs. The current findings show the potential of the intervention on mild emotional distress and emotion regulation difficulties and they might suggest that the DBT group skills training could be most beneficial when offered as a selected prevention intervention for university students. For students who might already show symptoms of mood or anxiety disorders, more intensive interventions that are connected to student counseling centers might be more suitable. Given the lack of available resources on the promotion of mental health on university campuses in Turkey (Güneri, 2006), developing prevention strategies that target at-risk individuals might reduce the burden and facilitate the detection of individuals who might need more intensive treatment approaches.

Limitations

A number of limitations restrict the generalizability of the current findings, including the single group pre-post design, the lack of a control group, and the relatively small sample size. Although the DBT skills training was associated with reductions in anxiety and stress and improvements in mindfulness and emotion regulation, which all indicate the intervention's potential, the lack of a comparison group limits the generalizability of this interpretation. Future research is required to conduct larger-scale controlled studies, including students from diverse backgrounds. The assessments were based on self-reports. Thus, the response characteristics of the participants could not be controlled. Participants were undergraduate students of psychology who were self-selected volunteer participants, and the generalization of these findings to other populations is limited. The use of DBT skills was not assessed during the training period. Therefore, it cannot be concluded that improved mental health status is directly related to the increased use of skills among participants. Furthermore, other mechanisms not measured in the current study, such as different facets of mindfulness might also be associated with changes in mental health status. Future studies are needed to determine the cost-effectiveness of the course-based delivery of DBT

skills. Also, its impact on other outcomes, including students' academic success and psychosocial functioning, needs to be examined.

Conclusion

This study showed that a course-based DBT group skills training was associated with significant improvements related to mindfulness, emotion regulation, anxiety, and stress in university students. These findings provide support for the potential of the DBT skills training as an evidence-based approach to address the emotional well-being of university students. Implementing such courses in the curricula or as part of continuous education centers might help improve mental health at university campuses. These findings might inform the ongoing international collaborations (e.g., World Mental Health International College Student Initiative, e.g., Cuijpers et al., 2019) that examine successful intervention strategies at the international level to improve university students' well-being. Given that university students report stigma-related barriers to seeking help (Ebert et al., 2019; Kacur & Atak, 2011; Koydemir et al., 2010), the online adaptation of DBT group skills training could reduce the barriers to seeking help in this population and facilitate the dissemination of the intervention strategy.

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Declaration of competing interest

There are no known conflicts of interest to disclose.

Author note

There are no known conflicts of interest to disclose.

References

[1] Alonso, J., Mortier, P., Auerbach, R. P., Bruffaerts, R., Vilagut, G., Cuijpers, P., Demyttenaere, K., Ebert, D. D., Ennis, E., Gutiérrez-García, R. A., Green, J. G., Hasking, P., Lochner, C., Nock, M. K., Pinder-Amaker, S., Sampson, N. A., Zaslavsky, A. M., & Kessler, R. C. (2018). Severe role impairment associated with mental disorders: Results of the WHO World Mental Health Surveys International College Student Project. *Depression and Anxiety*, *35*(9), 802-814. https://doi.org/10.1002/da.22778

[2] Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment*, *10*(2), 176-181. https://doi.org/10.1037/1040-3590.10.2.176

[3] Auerbach, R. P., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., Demyttenaere, K., Ebert, D. D., Green, J. G., Hasking, P., Murray, E., Nock, M. K., Pinder-Amaker, S., Sampson, N. A., Stein, D. J., Vilagut, G., Zaslavsky, A. M., & Kessler, R. C. (2018). WHO World Mental Health Surveys International College Student Project: Prevalence and distribution of mental disorders. *Journal of Abnormal Psychology*, *127*(7), 623-638. https://doi.org/10.1037/abn0000362

[4] Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, *13*(1), 27-45. https://doi.org/10.1177/1073191105283504

[5] Barnett, P., Arundell, L.-L., Saunders, R., Matthews, H., & Pilling, S. (2021). The efficacy of psychological interventions for the prevention and treatment of mental health disorders in university students: A systematic review and meta-analysis. *Journal of Affective Disorders*, *280*, 381-406. https://doi.org/https://doi.org/10.1016/j.jad.2020.10.060

[6] Bayram, N., & Bilgel, N. (2008). The prevalence and socio-demographic correlations of depression, anxiety and stress among a group of university students. *Social Psychiatry and Psychiatric Epidemiology*, *43*(8), 667-672. https://doi.org/10.1007/s00127-008-0345-x

[7] Beanlands, H., McCay, E., Fredericks, S., Newman, K., Rose, D., Santa Mina, E., Schindel Martin, L., Schwind, J., Sidani, S., Aiello, A., & Wang, A. (2019). Decreasing stress and supporting emotional well-being among senior nursing students: A pilot test of an evidence-based intervention. *Nurse Education Today*, *76*, 222-227. https://doi.org/10.1016/j.nedt.2019.02.009

[8] Bewick, B., Koutsopoulou, G., Miles, J., Slaa, E., & Barkham, M. (2010). Changes in undergraduate students' psychological well-being as they progress through university. *Studies in Higher Education*, *35*(6), 633-645. https://doi.org/10.1080/03075070903216643

[9] Bilgel, N., & Bayram, N. (2010). Turkish version of the Depression Anxiety Stress Scale (DASS-42): Psychometric properties. *Noropsikiyatri Arsivi-Archives of Neuropsychiatry*, *47*(2), 118-126. https://doi.org/10.4274/npa.5344

[10] Bohus, M., Dyer, A. S., Priebe, K., Kruger, A., Kleindienst, N., Schmahl, C., Niedtfeld, I., & Steil, R. (2013). Dialectical behaviour therapy for post-traumatic stress disorder after childhood sexual abuse in patients with and without borderline personality disorder: A randomised controlled trial. *Psychotherapy and Psychosomatics*, *82*(4), 221-233. https://doi.org/10.1159/000348451

[11] Brown, J. S. L. (2018). Student mental health: Some answers and more questions. *Journal of Mental Health*, *27*(3), 193-196. https://doi.org/10.1080/09638237.2018.1470319

[12] 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*(4), 822-848. https://doi.org/10.1037/0022-3514.84.4.822

[13] Bruffaerts, R., Mortier, P., Auerbach, R. P., Alonso, J., Hermosillo De la Torre, A. E., Cuijpers, P., Demyttenaere, K., Ebert, D. D., Green, J. G., Hasking, P., Stein, D. J., Ennis, E., Nock, M. K., Pinder-Amaker, S., Sampson, N. A., Vilagut, G., Zaslavsky, A. M., Kessler, R. C., & Collaborators, W. W.-I. (2019). Life-time and 12-month treatment for mental disorders and suicidal thoughts and behaviors among first year college students. *International Journal of Methods in Psychiatric Research*, *28*(2), e1764. https://doi.org/https://doi.org/10.1002/mpr.1764

[14] Catak, P. D. (2012). The Turkish version of Mindful Attention Awareness Scale: Preliminary findings. *Mindfulness*, *3*(1), 1-9. https://doi.org/10.1007/s12671-011-0072-3

[15] Chugani, C. D. (2017). Adapting dialectical behavior therapy for college counseling centers. *Journal of College Counseling*, *20*(1), 67-80. https://doi.org/10.1002/jocc.12059

[16] Chugani, C. D., Fuhrman, B., Abebe, K. Z., Talis, J., Miller, E., & Coulter, R. W. S. (2020). Wellness and resilience for college and beyond: Protocol for a quasi-experimental pilot study investigating a dialectical behaviour therapy skill-infused college course. *BMJ Open*, *10*(6), e036833. https://doi.org/10.1136/bmjopen-2020-036833

[17] Chugani, C. D., Ghali, M. N., & Brunner, J. (2013). Effectiveness of short term dialectical behavior therapy skills training in college students with cluster B personality disorders. *Journal of College Student Psychotherapy*, *27*(4), 323-336. https://doi.org/10.1080/87568225.2013.824337

[18] Crawford, J. R., & Henry, J. D. (2003). The Depression Anxiety Stress Scales (DASS): Normative data and latent structure in a large nonclinical sample. *British Journal of Clinical Psychology*, *42*(Pt 2), 111-131. https://doi.org/10.1348/014466503321903544

[19] Cuijpers, P., Auerbach, R. P., Benjet, C., Bruffaerts, R., Ebert, D., Karyotaki, E., & Kessler, R. C. (2019). The World Health Organization World Mental Health International College Student Initiative: An overview. *International Journal of Methods in Psychiatric Research*, *28*(2), e1761. https://doi.org/https://doi.org/10.1002/mpr.1761

[20] Delaquis, C. P., Joyce, K. M., Zalewski, M., Katz, L. Y., Sulymka, J., Agostinho, T., & Roos, L. E. (2022). Dialectical behaviour therapy skills training groups for common mental health disorders: A systematic review and meta-analysis. *Journal of Affective Disorders, 300*, 305-313. https://doi.org/https://doi.org/10.1016/j.jad.2021.12.062

[21] Ebert, D. D., Mortier, P., Kaehlke, F., Bruffaerts, R., Baumeister, H., Auerbach, R. P., Alonso, J., Vilagut, G., Martínez, K. U., Lochner, C., Cuijpers, P., Kuechler, A.-M., Green, J., Hasking, P., Lapsley, C., Sampson, N. A., Kessler, R. C., & On behalf of the, W. H. O. W. M. H. I. C. S. I. c. (2019). Barriers of mental health treatment utilization among first-year college students: First cross-national results from the WHO World Mental Health International College Student Initiative. *International Journal of Methods in Psychiatric Research*, *28*(2), e1782. https://doi.org/https://doi.org/10.1002/mpr.1782

[22] Engle, E., Gadischkie, S., Roy, N., & Nunziato, D. (2013). Dialectical behavior therapy for a college population: Applications at Sarah Lawrence College and beyond. *Journal of College Student Psychotherapy*, *27*(1), 11-30. https://doi.org/10.1080/87568225.2013.739014

[23] Erkan, S., Özbay, Y., Cihangir-Çankaya, Z., & Terzi, Ş. (2012). Üniversite öğrencilerinin yaşadıkları problemler ve psikolojik yardım arama gönüllükleri. *Eğitim ve Bilim*, *37*(164), 94-108.

[24] Fleming, A. P., McMahon, R. J., Moran, L. R., Peterson, A. P., & Dreessen, A. (2015). Pilot randomized controlled trial of dialectical behavior therapy group skills training for ADHD among college students.

Journal of Attention Disorders, *19*(3), 260-271.
https://doi.org/10.1177/1087054714535951

[25] Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment, 26*(1), 41-54. https://doi.org/10.1023/B:JOBA.0000007455.08539.94

[26] Gülgez, Ö., & Gündüz, B. (2015). Diyalektik davranış terapisi temelli duygu düzenleme programının üniversite öğrencilerinin duygu düzenleme güçlüklerini azaltmadaki etkisi. *Çukurova Üniversitesi Eğitim Fakültesi Dergisi*, *44*(2), 191-208.

[27] Güneri, O. Y. (2006). Counseling services in Turkish universities. *International Journal of Mental Health, 35*(1), 26-38. https://doi.org/10.2753/IMH0020-7411350102

[28] Harrer, M., Adam, S. H., Baumeister, H., Cuijpers, P., Karyotaki, E., Auerbach, R. P., Kessler, R. C., Bruffaerts, R., Berking, M., & Ebert, D. D. (2019). Internet interventions for mental health in university students: A systematic review and meta-analysis. *International Journal of Methods in Psychiatric Research*, *28*(2), e1759. https://doi.org/https://doi.org/10.1002/mpr.1759

[29] Hekimoglu, L., Altun, Z. O., Kaya, E. Z., Bayram, N., & Bilgel, N. (2012). Psychometric properties of the Turkish version of the 42 item Depression Anxiety Stress Scale (DASS-42) in a clinical sample. *International Journal of Psychiatry in Medicine*, *44*(3), 183-198. https://doi.org/10.2190/PM.44.3.a

[30] Kacur, M., & Atak, M. (2011). Üniversite öğrencilerinin sorun alanları ve sorunlarla başetme yolları: Erciyes Üniversitesi örneği. *Sosyal Bilimler Enstitüsü Dergisi*, *31*(2), 273-297.

[31] Kessler, R. C., Angermeyer, M., Anthony, J. C., R, D. E. G., Demyttenaere, K., Gasquet, I., . . . Ustün, T. B. (2007). Lifetime prevalence and age-of-onset distributions of mental disorders in the World Health Organization's World Mental Health Survey Initiative. *World Psychiatry, 6*(3), 168-176.

[32] Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry, 62*(6), 593-602.
https://doi.org/10.1001/archpsyc.62.6.593

[33] Kessler, R. C., Chiu, W. T., Hwang, I. H., Puac-Polanco, V., Sampson, N. A., Ziobrowski, H. N., & Zaslavsky, A. M. (2022). Changes in prevalence of mental illness among US adults during compared with before the COVID-19 pandemic. *Psychiatric Clinics of North America, 45*(1), 1-28.
https://doi.org/10.1016/j.psc.2021.11.013

[34] Kızıldağ , S., Zorbaz, S. D., Gençtanırım, D., & Arıcı, F. (2013). Hacettepe Üniversitesi öğrencilerinin psikolojik danışma yardımı almaya ve bu yardımın sunulduğu birimlere ilişkin görüşleri. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, *8*, 185-196.

[35] Kohls, E., Baldofski, S., Moeller, R., Klemm, S.-L., & Rummel-Kluge, C. (2021). Mental health, social and emotional well-being, and perceived burdens of university students during Covid-19 pandemic lockdown in Germany. *Frontiers in Psychiatry, 12*.
https://doi.org/10.3389/fpsyt.2021.643957.

[36] Koydemir, S., Erel, Ö., Yumurtacı, D., & Şahin, G. N. (2010). Psychological help-seeking attitudes and barriers to help-seeking in young people in Turkey. *International Journal for the Advancement of Counselling*, *32*(4), 274-289. https://doi.org/10.1007/s10447-010-9106-0

[37] Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. Guilford Press.

[38] Linehan, M. M. (2015a). *DBT® skills training handouts and worksheets, 2nd ed*. Guilford Press.

[39] Linehan, M. M. (2015b). *DBT® skills training manual, 2nd ed*. Guilford Press.

[40] Linehan, M. M., Dimeff, L. A., Reynolds, S. K., Comtois, K. A., Welch, S. S., Heagerty, P., & Kivlahan, D. R. (2002). Dialectical behavior therapy versus comprehensive

validation therapy plus 12-step for the treatment of opioid dependent women meeting criteria for borderline personality disorder. *Drug and Alcohol Dependence*, *67*(1), 13-26. https://doi.org/10.1016/s0376-8716(02)00011-x

[41] Linehan, M. M., & Wilks, C. R. (2015). The course and evolution of dialectical behavior therapy. *American Journal of Psychotherapy*, *69*(2), 97-110. https://doi.org/10.1176/appi.psychotherapy.2015.69.2.97

[42] Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, *33*(3), 335-343. https://doi.org/10.1016/0005-7967(94)00075-u

[43] Lynch, T. R., Chapman, A. L., Rosenthal, M. Z., Kuo, J. R., & Linehan, M. M. (2006). Mechanisms of change in dialectical behavior therapy: Theoretical and empirical observations. *Journal of Clinical Psychology*, *62*(4), 459-480. https://doi.org/10.1002/jclp.20243

[44] Lynch, T. R., Morse, J. Q., Mendelson, T., & Robins, C. J. (2003). Dialectical behavior therapy for depressed older adults - A randomized pilot study. *American Journal of Geriatric Psychiatry*, *11*(1), 33-45. https://doi.org/10.1176/appi.ajgp.11.1.33

[45] Meaney-Tavares, R., & Hasking, P. (2013). Coping and regulating emotions: a pilot study of a modified dialectical behavior therapy group delivered in a college counseling service. *Journal of American College Health*, *61*(5), 303-309. https://doi.org/10.1080/07448481.2013.791827

[46] Mehlum, L. (2021). Mechanisms of change in dialectical behaviour therapy for people with borderline personality disorder. *Current Opinion in Psychology, 37*, 89-93. https://doi.org/https://doi.org/10.1016/j.copsyc.2020.08.017

[47] Nunes, E. V., Pavlicova, M., Hu, M. C., Campbell, A. N., Miele, G., Hien, D., & Klein, D. F. (2011). Baseline matters: The importance of covariation for baseline severity in the analysis of clinical trials. *American Journal of Drug and Alcohol Abuse*, *37*(5), 446-452. https://doi.org/10.3109/00952990.2011.596980

[48] O'Toole, S. K., Diddy, E., & Kent, M. (2012). Mindfulness and emotional well-being in women with borderline personality disorder. *Mindfulness*, *3*(2), 117-123. https://doi.org/10.1007/s12671-011-0085-y

[49] Özkan, S., & Yılmaz, E. (2010). Üniversite öğrencilerinin üniversite yaşamına uyum durumları (Bandırma örnegi). *Fırat Sağlık Hizmetleri Dergisi*, *5*(13), 153-171.

[50] Panepinto, A. R., Uschold, C. C., Olandese, M., & Linn, B. K. (2015). Beyond borderline personality disorder: Dialectical behavior therapy in a college counseling center. *Journal of College Student Psychotherapy*, *29*(3), 211-226. https://doi.org/10.1080/87568225.2015.1045782

[51] Perroud, N., Nicastro, R., Jermann, F., & Huguelet, P. (2012). Mindfulness skills in borderline personality disorder patients during dialectical behavior therapy: Preliminary results. *International Journal of Psychiatry in Clinical Practice*, *16*(3), 189-196. https://doi.org/10.3109/13651501.2012.674531

[52] Pistorello, J., Fruzzetti, A. E., Maclane, C., Gallop, R., & Iverson, K. M. (2012). Dialectical behavior therapy (DBT) applied to college students: A randomized clinical trial. *Journal of Consulting and Clinical Psychology*, *80*(6), 982-994. https://doi.org/10.1037/a0029096

[53] Rith-Najarian, L. R., Boustani, M. M., & Chorpita, B. F. (2019). A systematic review of prevention programs targeting depression, anxiety, and stress in university students. *Journal of Affective Disorders*, *257*, 568-584. https://doi.org/https://doi.org/10.1016/j.jad.2019.06.035

[54] Rizvi, S. L., & Steffel, L. M. (2014). A pilot study of 2 brief forms of dialectical behavior therapy skills training for emotion dysregulation in college students. *Journal of American College Health*, *62*(6), 434-439.

https://doi.org/10.1080/07448481.2014.907 298

[55] Ruganci, R. N., & Gencoz, T. (2010). Psychometric properties of a Turkish version of the Difficulties in Emotion Regulation Scale. *Journal of Clinical Psychology*, *66*(4), 442-455. https://doi.org/10.1002/jclp.20665

[56] Safer, D. L., Robinson, A. H., & Jo, B. (2010). Outcome from a randomized controlled trial of group therapy for binge eating disorder: Comparing dialectical behavior therapy adapted for binge eating to an active comparison group therapy. *Behavior Therapy*, *41*(1), 106-120. https://doi.org/10.1016/j.beth.2009.01.006

[57] Sedlmeier, P., Eberth, J., Schwarz, M., Zimmermann, D., Haarig, F., Jaeger, S., & Kunze, S. (2012). The psychological effects of meditation: A meta-analysis. *Psychological Bulletin*, *138*(6), 1139-1171. https://doi.org/10.1037/a0028168

[58] Topkaya, N., & Meydan, B. (2013). Üniversite öğrencilerinin problem yaşadıkları alanlar, yardım kaynakları ve psikolojik yardım alma niyetleri. *Trakya Üniversitesi Eğitim Fakültesi Dergisi*, *3*(1), 25-37.

[59] Türküm, A. S., Kızıltaş, A., & Sarıyer, A. (2004). Anadolu Üniversitesi psikolojik danışma ve rehberlik merkezinin hedef kitlesinin psikolojik ihtiyaçlarına ilişkin ön çalışma. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, *3*(21), 15-27.

[60] Uliaszek, A. A., Rashid, T., Williams, G. E., & Gulamani, T. (2016). Group therapy for university students: A randomized control trial of dialectical behavior therapy and positive psychotherapy. *Behaviour Research and Therapy*, *77*, 78-85. https://doi.org/10.1016/j.brat.2015.12.003

[61] Uncu, Y., Bayram, N., & Bilgel, N. (2007). Job related affective well-being among primary health care physicians. *European Journal of Public Health*, *17*(5), 514-519. https://doi.org/10.1093/eurpub/ckl264

[62] Üner, S., Özcebe, H., Telatar, T. G., & Tezcan, S. (2008). Assessment of mental health of university students with GHQ-12. *Turkish Journal of Medical Sciences*, *38*, 437-446.

[63] Üstündağ-Budak, A. M., Özeke-Kocabaş, E., & Ivanoff, A. (2019). Dialectical behaviour therapy skills training to improve Turkish college students' psychological well-being: A pilot feasibility study. *International Journal for the Advancement of Counselling*, *41*(4), 580-597. https://doi.org/10.1007/s10447-019-09379-5

[64] Valentine, S. E., Bankoff, S. M., Poulin, R. M., Reidler, E. B., & Pantalone, D. W. (2015). The use of dialectical behavior therapy skills training as stand-alone treatment: A systematic review of the treatment outcome literature. *Journal of Clinical Psycholology, 71*(1), 1-20. https://doi.org/10.1002/jclp.22114

[65] Yavuzer, H., Meşeci, F., Demir, İ., & Sertelin, Ç. (2005). Günümüz üniversite gençliğinin sorunları. *Hasan Ali Yücel Eğitim Fakültesi Dergisi*, *1*, 79-91.