



Effect of Mindfulness-based Cognitive Therapy on Subjective Well-being and Psychological Distress of Kerman University of Medical Sciences Students

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Abstract

Background: Mental health is a significant component of academic achievement, while psychological distress can reduce academic performance.

Objectives: The present study aimed to investigate the effect of Mindfulness-based Cognitive Therapy (MBCT) on subjective well-being and psychological distress of Kerman University of Medical Sciences students.

Methods: In this quasi-experimental study, the study population included all Kerman University of Medical Sciences students in 2020. The study sample consisted of 30 university students randomly divided into two groups: Control (n = 15) and experimental (n = 15), using convenience sampling. The experimental group received eight 90-minute MBCT sessions biweekly. The research tools included the Subjective Well-being Scale (SWS) and the Depression, Anxiety, and Stress Scale (DASS-21). The data were analyzed with SPSS version 22.

Results: The mean posttest scores of emotional, psychological, and social well-being were 3.56 ± 0.31 , 4.46 ± 0.32 , and 5.70 ± 0.42 in the experimental group and 2.64 ± 0.40 , 4.00 ± 0.37 , and 3.11 ± 0.35 in the control group, respectively. Moreover, the mean posttest scores for depression, anxiety, and stress were 1.64 ± 0.16 , 1.19 ± 0.41 , and 1.67 ± 0.15 in the experimental group and 3.10 ± 0.24 , 3.55 ± 0.52 , and 3.01 ± 0.24 in the control group, respectively. Mindfulness-based cognitive therapy significantly improved the posttest scores of subjective well-being subscales (emotional, psychological, and social well-being). Moreover, depression, anxiety, and stress decreased significantly in the experimental group ($P < 0.001$).

Conclusions: Mindfulness-based cognitive therapy effectively reduced psychological distress and improved subjective well-being in university students.

Keywords: Mindfulness, Cognitive, Subjective Well-being, Psychological Distress, Medical Students

1. Background

Human success and progress depend on rich, dynamic, and effective thoughts (1). Mental health strongly correlates with academic achievement; therefore, students need mental health and academic success to develop such constructive competencies and academic and social achievement (2, 3). Some factors, including subjective well-being, influence students' mental health. In fact, the identification and examination of factors contributing to well-being are the top priorities of the education system, and well-being promotion is a principal task of educational managers and experts (4, 5).

According to novel approaches to health, the absence of illness does not ensure a sense of health; instead, health is also characterized by life satisfaction, positive mood, and

effective communication with others (6, 7). Influenced by positive psychology concepts, health researchers have adopted a different theoretical and research approach to explaining and studying well-being and have conceptualized this concept in the form of subjective well-being (8, 9). That is why mental health approaches and methods, including examining subjective well-being, have recently gained momentum (10).

As the capacity of discovering all ones' aptitude, subjective well-being is the outcome of a balance between positive and negative affects, job satisfaction, and overall life satisfaction (11). Those with high well-being experience more positive emotions have a positive attitude towards themselves and current and future events, positively evaluate these components, and describe them as pleasant.

On the other hand, those with low well-being experience more negative emotions towards these components (12). Overall, well-being indicates integrity in one's life, emotional balance, and overall life satisfaction. People with optimal well-being have more pleasant experiences and suffer fewer unpleasant feelings (13, 14).

Students' performance is also affected by psychological distress (15). According to Tang et al. (16), by disrupting cognitive processing, psychological distress can harm self-efficacy and self-esteem and even lead to suicidal ideation. Psychological distress is a specific emotional state and condition experienced temporarily or constantly in response to specific stressors and harmful demands. It encompasses unpleasant depressive and anxious mental states, with physiological and emotional symptoms that reduce distress tolerance and increase maladjusted behaviors (17, 18).

Some studies have mentioned specific mechanisms to change the level of psychological distress (19). Mindfulness is a widely discussed trait pertaining to well-being promotion and distress alleviation, defined as a unique state of awareness providing interaction with the present moment and living in the moment (20, 21). The elements of mindfulness, ie, awareness and non-judgmental acceptance, are an antidote to common psychological distresses. In studies examining the effects of mindfulness-based interventions on cognitive-emotional processes, individuals experiencing distress have stated the effectiveness of mindfulness through alleviating rumination, enhancing mental clarity, and promoting optimal thoughts and emotions (22, 23). According to previous studies, mindfulness training positively affects some psychological characteristics, including symptoms of depression and anxiety, sleep quality, life quality, depression, and anger (24-27).

Trombka et al. (24) showed that mindfulness-based health promotion was feasible and efficacious to improve life quality, depression, and anxiety symptoms among Brazilian officers; these results were maintained after six months (24). Serpa et al. (27) reported significant reductions in anxiety, depression, and suicidal ideation after mindfulness-based stress reduction training in veterans. Also, they reported that mindfulness interacted with other outcomes, such that increases in mindfulness were related to improvements in anxiety, depression, and mental health functionality (27). According to Adelian et al. (28), mindfulness-based therapy effectively increased women's resilience. MacKenzie and Kocovski (29) showed that mindfulness-based cognitive therapy significantly decreased depression and anxiety. Furthermore, according to Amick et al. (30), mindfulness-based cognitive therapy was as effective as pharmacotherapy in controlling depressive symptoms. Mindfulness-based cognitive therapy teaches

people to be aware of their thoughts in a non-judgmental manner and accept positive or, at least, neutral thoughts as reality instead of automatic negative thoughts.

2. Objectives

This study intended to determine whether mindfulness-based cognitive therapy significantly affects female students' subjective well-being and psychological distress. Accordingly, the present study aimed to investigate the effect of mindfulness-based cognitive therapy on the subjective well-being and psychological distress of students at Kerman University of Medical Sciences.

3. Methods

This quasi-experimental study utilized a pretest-posttest design with a control group. The study population comprised all students at Kerman University of Medical Sciences in 2020. The study sample consisted of 30 university students randomly divided into two groups: Control ($n = 15$) and experimental ($n = 15$), using convenience sampling. The inclusion criteria were having a subjective well-being score lower than the cutoff value, having a depression, anxiety, and stress (psychological distress) score above the cutoff value, and informed consent to attend all sessions. On the other hand, the exclusion criteria included lack of cooperation, failure to meet the cutoff scores on both scales, and absence from more than two sessions. The researchers obtained the written consent of the participants in response to ethical concerns. This article was extracted from a Ph.D. dissertation by Zohreh Shahsavari Googhari in the Department of Psychology, Ahvaz Branch, Islamic Azad University, Ahvaz, Iran (Ethics Code: IR.IAU.AHVZ.REC.1399.037). Part of this project has already been published (31).

3.1. Instruments

3.1.1. Subjective Well-being Scale

Keyes and Magyar-Moe (2003) developed the 45-item Subjective Well-being Scale (SWS), which includes three subscales: Emotional (12 items), psychological (18 items), and social well-being (15 items), each with a unique raw score. Emotional well-being items are scored on a scale of 0 to 4, whereas psychosocial and social well-being items are scored on a scale of 1 to 7. Higher overall scores suggest a higher level of subjective happiness (32). According to the authors, the tool's reliability was 0.77 (33). Cronbach's alpha for the scale in the current study was 0.80.

3.1.2. Depression, Anxiety, and Stress Scale-21

Lovibond and Lovibond developed the Depression, Anxiety, and Stress Scale-21 (DASS-21) for psychological distress screening in 1995. The original form has 42 statements and assesses the following mental constructs: Anxiety, stress, and depression, each with 14 statements. Each factor/mental construct is measured by seven statements in the short form (34). Sahebi et al. (35) sought to validate a 21-item questionnaire for the Iranian population. Cronbach's alpha for the scale in the current study was 0.97.

3.2. Procedure

All the participants filled out the SWS and DASS-21 on the pretest. Then, the experimental group received mindfulness-based cognitive therapy, while the control group received no intervention. On the posttest after the intervention, all the participants filled out SWS and DASS-21 again.

3.3. Intervention Program

The experimental group underwent the mindfulness-based cognitive therapy program in eight 90-minute sessions (twice a week). Table 1 presents a summary of the sessions.

3.4. Statistical Analyses

The data were analyzed via a one-way analysis of covariance. The assumptions of this test, including the normality of the covariate and dependent variable, the linear relationship between the covariate and dependent variable in the experimental and control groups, and the homogeneity of the regression line slopes among the covariates, were first examined. The data were analyzed with SPSS version 22.

4. Results

The participants included 30 students at Kerman University of Medical Sciences, aged 21.67 ± 3.42 years old. The two groups' mean pretest scores did not significantly differ, but the mean posttest scores of subjective well-being (emotional, psychological, and social well-being) were higher in the experimental than in the control group. Furthermore, the mean posttest scores of psychological distress (depression, anxiety, and stress) were lower in the experimental group than in the control group (Table 2).

A multivariate analysis of covariance (MANCOVA) was performed to evaluate the effectiveness of mindfulness-based cognitive therapy on the students' subjective well-being and psychological distress. Levene's test results

confirmed the assumption of the homogeneity of variances for subjective well-being and psychological distress. A Kolmogorov-Smirnov test also confirmed the assumption of the normal distribution of the two groups' subjective well-being and psychological distress pre and posttest scores. The F index for the group \times pretest variations was non-significant for all the variables; no heterogeneity of regression was observed; thus, the null hypothesis of the homogeneity of the regression slopes of both groups was confirmed.

An analysis of covariance was performed to examine the groups' possible significant effects on the dependent variables. After controlling for the pretest scores, there was a significant difference between the control and experimental groups in at least one dependent variable, confirming mindfulness-based cognitive therapy's effectiveness ($F = 7.99, P < 0.001$). Based on the eta-squared, the magnitude of effect/difference was 0.51; ie, 51% of the individual variations on posttest scores were due to the effect of the intervention (Table 3).

Next, the possible significant differences between the two groups regarding subjective well-being and psychological distress were examined. Table 4 lists the results of between-group effects for these two variables. The experimental and control groups significantly differed in terms of emotional well-being ($F = 105.62$), psychological well-being ($F = 108.48$), and social well-being ($F = 115.61$), thereby confirming the effects of mindfulness-based cognitive therapy on all the dimensions of subjective well-being. In addition, the results showed that the experimental and control groups significantly differed in terms of depression ($F = 111.21$), anxiety ($F = 96.89$), and stress ($F = 129.17$), thereby confirming the effects of mindfulness-based cognitive therapy on all the dimensions of psychological distress.

5. Discussion

This study aimed to investigate the effect of mindfulness-based cognitive therapy on subjective well-being and psychological distress of Kerman University of Medical Sciences students in 2020. Based on the findings, mindfulness-based cognitive therapy promoted the students' subjective well-being and alleviated their psychological distress. This finding is consistent with the results of Hofmann and Gomez (37), Tickell et al. (38), and Sado et al. (39).

These findings can be explained by the positive effect of mindfulness on well-being. Myers (40) showed that mindfulness significantly predicts life satisfaction, and mindfulness training therapy promotes well-being. Mindfulness makes people resilient and adaptive against stressful and

Table 1. A Summary of Mindfulness-based Cognitive Therapy Sessions (36)

Session	A Summary of the Session Content
1	Establishing a therapeutic relationship and getting consent
2	Presenting a novel therapeutic conversation, handling automatic thoughts, training three-minute breathing space, mindful walking, and using mindfulness to cope with negative emotions
3	Out out depressed brain function and how mindfulness affects it, problem objectification, brain training, training certain everyday mindfulness activities
4	Acceptance, using metaphors, automatic thoughts, depression criteria, depression definition and diagnosis, three-minute breathing space, plus review
5	You are not your thoughts, beliefs, and feelings, goal-setting, body scan mindfulness
6	Liberation through forgiveness: liberation mindfulness training, self-value promotion
7	Being friends and kind with yourself and others, building a healthy relationship with yourself, mindful listening to make your relationships better
8	Thanksgiving, patience, change, and reflection; regular practice

Table 2. Mean and Standard Deviation (SD) of Variables in Experimental and Control Groups

Variables	Subscale	Phases	Mindfulness-based Cognitive Therapy	Control	P-Value
Subjective well-being	Emotional well-being	Pretest	2.22 ± 0.45	2.51 ± 0.49	0.379
		Posttest	3.56 ± 0.31	2.64 ± 0.40	0.001
	Psychological well-being	Pretest	3.67 ± 0.35	3.93 ± 0.28	0.419
		Posttest	4.46 ± 0.32	4.00 ± 0.37	0.001
	Social well-being	Pretest	3.19 ± 0.49	3.24 ± 0.60	0.831
		Posttest	5.70 ± 0.42	3.11 ± 0.35	0.001
Psychological distress	Depression	Pretest	3.42 ± 0.28	3.13 ± 0.18	0.254
		Posttest	1.64 ± 0.16	3.10 ± 0.24	0.001
	Anxiety	Pretest	3.94 ± 0.42	3.67 ± 0.64	0.368
		Posttest	1.19 ± 0.41	3.55 ± 0.52	0.001
	Stress	Pretest	3.24 ± 0.15	3.31 ± 0.17	0.716
		Posttest	1.67 ± 0.15	3.01 ± 0.24	0.001

Table 3. Results of Multivariate Analysis of Covariance on Posttest Scores of Research Variables in Experimental and Control Groups

Effect	Value	df	Error df	F	P-Value	η^2	Power
Pillais trace	0.51	3	23	7.99	< 0.001	0.51	1.00

difficult situations by enhancing life satisfaction and reducing psychological distress.

Mindfulness is a crucial component of liberation because it effectively reduces both internal and external pressures, which are seen as the root of many psychological disorders in this perspective (41). Mindfulness teaches students how to find peace and happiness within themselves and incorporate peace and happiness into their daily lives, thereby improving their overall well-being. Otherwise stated, mindfulness allows students to focus on the present instead of the past or future (42). Mindfulness produces an accepting, flexible mindset instead of avoiding and consequently protracting distressing emotions and stressors. It helps mitigate pain and suffering, suppresses

unpleasant internal stimulants, and thus promotes proper behavior in response to deviations. Mindfulness enhancement reduces negative behaviors and improves well-being (19).

Mindfulness directly impacts mental health because it allows people to fully experience each moment, improving their sense of reality. Students can use mindfulness techniques to identify situations that cause them to feel depressed, anxious, or stressed, and then gradually let go of their anxiety, worries, fatigue, dissatisfaction, or depression (43). Mindfulness is a significant prerequisite for liberation because it effectively reduces internal and external pressures, which are seen as the root of various psychological disorders in this approach (25). Mindfulness teaches

Table 4. Results of One-way Analysis of Covariance on Study Variables in Experimental and Control Groups

Variables, Source	SS	df	MS	F	P	η^2	Power
Emotional well-being							
Pretest	170.84	1	170.84	105.62	< 0.001	0.50	1.00
Group	16.19	1	16.19	4.18	0.04	0.34	0.95
Error	31.48	27	1.58				
Psychological well-being							
Pretest	280.03	1	280.03	108.48	< 0.001	0.80	1.00
Group	12.39	1	12.39	4.80	0.03	0.15	0.56
Error	69.69	27	2.58				
Social well-being							
Pretest	192.54	1	192.54	115.61	< 0.001	0.68	1.00
Group	10.40	1	10.40	4.39	0.01	0.14	0.59
Error	58.96	27	3.07				
Depression							
Pretest	195.44	1	195.44	111.21	< 0.001	0.63	1.00
Group	12.01	1	12.01	4.92	0.03	0.49	0.83
Error	42.14	27					
Anxiety							
Pretest	173.21	1	173.21	96.89	< 0.001	0.79	1.00
Group	9.88	1	9.88	4.09	0.001	0.52	0.66
Error	52.60	27					
Stress							
Pretest	182.51	1	182.51	129.17	< 0.001	0.81	1.00
Group	13.13	1	13.13	5.71	0.02	0.40	0.89
Error	76.69	27					

students how to find peace and happiness within themselves and how to incorporate peace and happiness into their daily lives, improving their overall well-being.

By balancing human awareness, mindfulness promotes intra- and inter-personal relationships, helps people better deal with and challenge their psychological distress, and creates proper subjective well-being by interacting with positive thoughts about themselves and others. Promoting well-being mitigates distress and disquiet and helps people deal with them more rationally (44).

Some factors limited this study. The sample comprised only female students in Kerman, and thus the results should be generalized to male students and students in other cities with caution. To overcome these limitations, future studies should also recruit male students from other cities. Based on the findings and the role of mindfulness, mindfulness training classes can be held for students to promote their well-being and mental health.

Footnotes

Authors' Contribution: Zohreh Shahsavari Googhari: Study concept and design, data acquisition, analysis and interpretation, and statistical analysis. Fariba Hafezi: Administrative, technical, and material support and study supervision. Parviz Asgari and Alireza Heidari: Critical manuscript revision for important intellectual content.

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