

Generalized Anxiety Disorder and Comorbid Symptoms of Sleep: The Unified Protocol for Transdiagnostic Treatment of Emotional Disorders

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Abstract

Background and Objective: Generalized anxiety disorder (GAD) has high comorbidity with other psychological disorders and causes functional impairments. A unified protocol (UP) for transdiagnostic treatment is an emotion-based treatment and can be effective in improving comorbid symptoms. This study aimed at evaluating the effectiveness of UP for transdiagnostic treatment and pharmacotherapy treatment-as-usual (UP + TAU) compared with pharmacotherapy treatment-as-usual (TAU) in reducing the symptoms of GAD and comorbid sleep problems.

Materials and Methods: The present study was a clinical trial and the statistical population of this study consisted of all the people with GAD referred to mental health clinics in Kermanshah, Iran. The participants were 24 individuals with GADs and their comorbid symptoms (sleep problems) and were randomly assigned to control (TAU) and experimental groups (UP + TAU). The participants completed the Penn State Worry Questionnaire (PSWQ), Pittsburgh Sleep Quality Index (PSQI), and Work and Social Adjustment Scale (WSAS) in the three stages of assessment. One-way analysis of covariance (ANCOVA) was used to analyze the data.

Results: Among the participants in the TAU + UP group, the symptoms of GAD and sleep problems (only in follow-up) significantly decreased and overall performance improved in comparison to the TAU group ($P > 0.001$). However, this significant effect was shown only in some of the components of sleep quality.

Conclusion: Based on the findings of this study, UP was effective in reducing the symptoms of GAD and its comorbid symptoms (sleep problems), and improving overall performance. However, the reduction in sleep problems (only in a few components) was statistically significant only at the follow-up stage.

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Keywords: Comorbidity; Generalized anxiety disorder; Sleep disorders; Clinical protocols

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Introduction

Generalized anxiety disorder (GAD) is a common and chronic psychiatric disorder with high comorbidity, and its specificity is extreme and persistently worrisome (1-3). This disorder is mainly characterized by physical symptoms of restlessness, fatigue, muscle tension, irritability, difficulty in concentration, and sleep problems (3). The 12-month and lifetime prevalence of GAD have been reported as 1.2-1.9 percent and 4.3-5.9 percent,

respectively (1). Epidemiological studies have also concluded that GAD is the most common disorder among anxiety disorders in Iran (4). The negative impacts of the disorder on satisfaction and quality of life (QOL) are substantial in terms of social and occupational performance (5). Therefore, the further investigation of this disorder is necessary.

GAD has high comorbidity with other psychological problems (6); many studies have shown that it is rarely possible to observe GAD without any other disorders, and in fact, only 25.37% of patients with GAD have no other disorder (5). People with GAD usually have severe and persistent concerns about their social relationships (7).

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In addition, nearly 74% of patients with GAD report sleep problems, such as difficulty falling asleep and interrupted sleep (8). Many GAD patients report that their daily activities and functions are hampered by their sleep problems (9).

In a study by Harvey, worry was identified as a common factor between GAD and those with sleep problems such as insomnia (10). Sleep quality can be a concern in these individuals, which in turn can lead to more sleep problems (11). However, among anxiety disorders, the least successful therapeutic effect has been observed in GAD (12). In recent years, a series of cognitive-behavioral evidence-based treatments have been designed for each anxiety and mood disorder (13-16). Various psychological interventions have also been implemented based on different theoretical foundations that have focused on chronic worries, such as the Barkovec Avoidance model of worry, Wells' meta-cognition model, Douglas's uncertainty intolerance model, acceptance-based model, and Mennin's emotion dysregulation model (17). Despite their effectiveness and relative efficacy due to the various protocols for a clinical diagnosis (18) and less attention to mechanisms of co-morbidity (19), which are in fact part of the common core psychopathology (20), these models have not yet been treated as first-line psychological treatments. In recent years, transdiagnostic protocols have been designed to target the underlying process involved in a wide range of psychological disorders, and recent meta-analyses have shown their effectiveness, including the unified protocol (UP) (21-23). UP considers similarities between emotional disturbances (such as negative affect, perfectionism, rumination, emotion regulation problems, worry, and sleep problems) and high rates of comorbidity among these disorders, and targets the common core of psychopathology between major disorders and symptoms (24). UP is rooted in cognitive-behavioral therapy, but it specifically emphasizes on how people with emotional disorders can experience and respond to emotions (24). Individual and group UP protocols for anxiety and depression disorders, bipolar disorder, borderline personality disorder (BPD), and emotional disorders in adolescents have been investigated (25-29). In a clinical trial, de Ornelas Maia et al., examined the UP for 48 patients with anxiety and depression disorders in two groups (UP and pharmacotherapy) and showed a more significant improvement of anxiety and depression disorders in the UP group compared

to the group that received pharmacotherapy alone (25). To our knowledge and based on a comprehensive literature review in this field, no study has examined the effectiveness of this protocol in improving sleep problems as comorbid symptoms.

The complexity of GAD and its high comorbidity with sleep problems, loss of work, and social performance on the one hand, and the favorable effectiveness of UP in the improvement of emotional disorders and their comorbid symptoms on the other hand have driven the present study. Therefore, the objectives of the present research were to answer two following questions: (1) Is UP effective in reducing the symptoms of GAD and its comorbid symptoms (sleep problems)? (2) Does this protocol affect overall performance improvement?

Materials and Methods

Participants: The statistical population for this study consisted of all individuals with GAD referring to psychiatric clinics in Kermanshah, Iran. Initially, 83 subjects with GAD were referred to the study team located at the psychiatric clinic of Farabi Hospital by psychiatric colleagues from psychiatric clinics to participate in the study. Subsequently, an initial screening with Generalized Anxiety Disorder 7-Item (GAD-7), and then, the Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV) program was used by a clinical psychologist to confirm the diagnosis of the psychiatrist. Finally, 24 subjects, who had GAD and at least the common symptoms, were selected based on the study inclusion and exclusion criteria and were randomly divided into two groups. Thus, 12 participants were treated with the unified protocol of transdiagnostic treatment and treatment-as-usual (UP + TAU) and 12 with TAU as prescribed by the psychiatrist.

The study inclusion criteria included a minimum age of 18 years, education of at least third grade in middle school, having GAD as the main diagnosis based on a psychiatrist's diagnosis and diagnostic interview by a psychologist, comorbid symptoms of sleep problems (mild to severe), and absence of complete diagnostic criteria for sleep disorders, any mental disorder in Axis I and II was based on a diagnostic interview with the exception of emotional disturbances, lack of psychological treatment in the past 6 months, lack of substance abuse or drug dependence at the present time and within 6 months before treatment, and motivation and willingness to participate in the research.

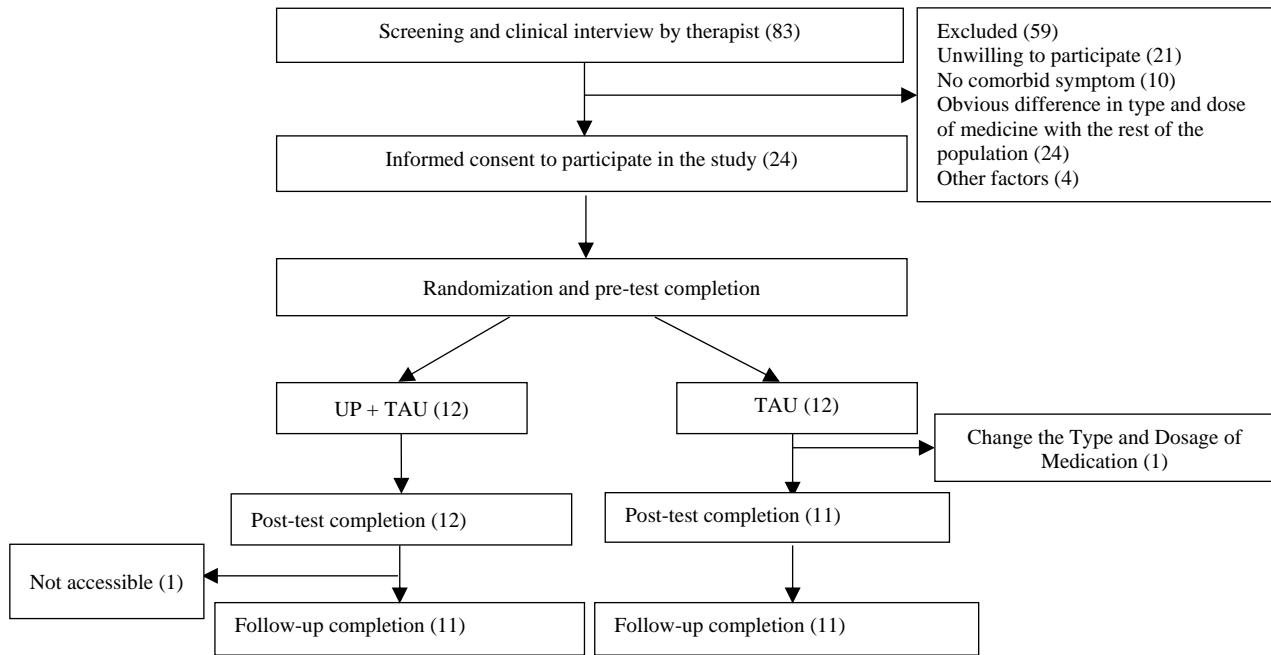


Figure 1. The research flowchart
UP: Unified protocol; TAU: Treatment-as-usual

The exclusion criteria were alteration in the dose and type of medication used during the study due to the exacerbation of symptoms, the apparent risk of suicide, and reluctance to attend research meetings. Patient allocation is shown in figure 1.

Measures: Anxiety Disorders Interview Schedule for DSM-IV: The ADIS-IV is a semi-structured clinical and diagnostic interview for anxiety disorders developed by Brown et al. (30). In addition to anxiety disorders, it also includes drug abuse, and physical, psychotic, and mood disorders (30). This tool provides the possibility to evaluate the damage level and severity of each disorder. If the severity is graded at least 4, the patient's symptoms are the diagnostic threshold of or higher than that grade. Degree of severity of 3 or less is attributed to diagnosis of a partial or complete improvement level (30). The test-retest reliability coefficient of this scale was reported to be 0.83 within 1 week (31). At initial evaluations, this tool was used to screen and confirm the intended clinical diagnosis and to calibrate the clinical severity rating (CSR) of disorders.

Generalized Anxiety Disorder 7-Item Scale: GAD-7 was developed to diagnose anxiety disorders and to measure the severity of clinical symptoms. Items were scored from 0 to 3, and the total score of the scale ranged from 0 to 21. Higher scores indicate severe anxiety, and its Cronbach's alpha coefficient and re-test coefficient were

measured at 0.92 and 0.83, respectively within 2 weeks (32). The Cronbach's alpha of this scale in Iran is reported to be 0.87 (33). This tool was only used in the initial screening of patients with GAD.

Penn State Worry Questionnaire: The Penn State Worry Questionnaire (PSWQ) includes 16 items and is a valid clinical tool for assessing GAD worry features of the clinical and non-clinical population (34). The PSWQ has shown a consistent internal consistency (35). The Iranian PSWQ presented a high internal consistency (0.88) and test-retest reliability coefficient (0.79) (36).

Work and Social Adjustment Scale (WSAS): The Work and Social Adjustment Scale is used to assess overall functioning. This scale measures the rate of symptoms' interference in patients' occupational functioning, home management, personal and social interests, and family relationships. A good internal consistency (72-94 percent) was reported for WSAS in a retrospective study (37). In Iranian studies, the correlation of this scale with the DASS subscales and the reliability coefficient were reported as 0.75 and 0.69, respectively (31). This scale was used as an indicator of disability and overall functioning.

Pittsburgh Sleep Quality Index (PSQI): The Pittsburgh Sleep Quality Index was used to assess the quality and pattern of sleep. The PSQI distinguishes optimal and poor sleep quality through 7 components, and its total score ranges from 0 to

21. The higher scores imply lower sleep quality. The scores of 6 and above signify poor sleep quality (38). The components of this questionnaire are subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, daytime dysfunction, sleep disturbance, and use of sleeping medication (38). The validity of the PSQI was confirmed with Cronbach's Alpha of 0.8; in addition, its test-retest reliability ranged from 0.93 to 0.98 (34). The PSQI has been shown to be highly reliable in many studies (38-41).

Design: This semi-experimental clinical trial with control and experimental groups approved by the IRCT20120619010063N7 code in the IRCT (Iranian Registry of Clinical Trials) compared UP + TAU with TAU. The evaluations included pre-test, post-test, and 2-month follow-up. All evaluations were conducted by independent and trained evaluators who were not involved in the research. The research team consisted of 2 therapists including a clinical psychologist with at least 10 years of experience as a supervisor and a master's student with 2 years of experience in implementing psychological treatments. Training sessions were conducted for the research team based on transdiagnostic treatment guidelines and video footages of the treatment.

Statistical analyses: Data were analyzed using descriptive analyses (mean and standard deviation) and one-way analysis of covariance (ANCOVA) in SPSS software (version 20, IBM Corporation, Armonk, NY, USA). Before data analysis, the covariance of related assumptions, regression slope, default error variance equation, linear assumption of regression, and relationship between the regression and normality were checked.

Ethical considerations: All participants were made aware of the research conditions. They studied and completed the informed consent form before participating in the study. They also had the freedom to leave the research when they wanted to. All the information was confidential. If a participant wanted to know the results of the research, he would be provided with the necessary information. This study was approved by the Ethics Committee of Kermanshah University of Medical Sciences, Iran (KUMS.REC.1396.617).

Interventions

Medication (Treatment as usual): TAU is a common therapy that includes medication therapy, psychological interventions except for systematic psychotherapy (such as cognitive-behavioral therapy) and electroshock treatment. In

this study, TAU has been used as a common medication therapy. Participants who had been prescribed medication continued their care under the supervision of their psychiatrist. All the participants received their medication for at least 5 months based on a psychiatrist's diagnosis. Participants were supervised to prevent the worsening of signs or side effects during this period. The use of medication, including any medication or dose changes, has been tracked and recorded during each evaluation. The participants completed the assessments in the three stages of pre-test, post-test, and follow-up. One of the participants in the medication group did not complete the treatment sessions due to exacerbation of symptoms and changes in dosage and type of medication.

The unified protocol and medication: Participants assigned to the UP + TAU group were under the care of a psychiatrist and were under the same conditions as the medication group. Participants in this group received twelve 60-minute sessions of UP on a weekly basis. Due to the inaccessibility in the follow-up phase, one of the participants in the UP + TAU group did not complete treatment. UP is cognitive-behavioral therapy for emotional disturbances (42). UP included an introductory session and 8 modules for learning transdiagnostic behavioral-cognitive skills, boosting motivation, psychological training of emotions, educating emotional awareness, appraisal and cognitive reappraisal, avoidance of emotions and emotional behaviors, teaching tolerance toward physical sensation, innate emotional exposure, and prevention of recurrence (Table 1).

Results

Demographic characteristics are presented in table 2. Based on the results presented in this table, there was no significant difference in the variables of age, sex, education, marital status, and number of medication recipients.

Table 3 presents mean \pm standard deviation and changes in the target variables among control and test groups. Accordingly, all target variables in the experimental group improved compared to the control group.

Before statistical inference, Kolmogorov-Smirnov test was performed to verify the normality of the data and the data assumption was confirmed. The results of Box's M test showed that the matrix of covariance was equal in multivariate analysis of covariance (MANCOVA) ($P > 0.05$).

Table 1. Sessions, modules, and core content of session

Session	Content
1	Increasing motivation, motivational interviewing for participation and involvement of patients, presentation of treatment rationale, and determination of treatment goals (Module 1)
2	Presentation of psychoeducation, recognition of emotions and tracking emotional experiences, and teaching the main components of emotional experience (Module 2)
3	Emotional awareness training, and learning to view emotional experiences (emotion and reaction to emotions) especially using mindfulness techniques (Module 3)
4	Cognitive appraisal and reappraisal, informing of the impact and interaction between thoughts and emotions, identifying autonomic maladaptive appraisal, common thinking traps, and increasing the flexibility of thinking (Module 4)
5	Identifying emotional avoidance patterns, familiarizing with different strategies for avoiding emotions and their impact on emotional experiences, and recognizing the contradictory effects of emotional avoidance (Module 5)
6	Emotion-Driven Behaviors Study (EDBS), familiarity and identification of emotion-driven behaviors, understanding their effects on emotional experiences, identifying maladaptive EDBSs (Module 5)
7	Gaining knowledge and tolerance of physical senses, increasing awareness of the role of emotional feelings in emotional experiences, practicing exercises or visceral confrontation in order to be aware of physical sensations, and increasing the tolerance of these symptoms (Module 6)
8-11	Visceral confrontation and confrontation with situational emotions, awareness of the rationale of emotional confrontation, teaching how to prepare a fear and avoidance hierarchy, and designing repeated and effective emotional exercises (Module 7)
12	Prevention of relapse, overview of the treatment content and patient progress, and identify the ways in which treatment advantages maintain and predict future difficulties (Module 8)

Wilk's Lambda test that measures the efficacy of the treatment in all target variables showed that the linear combination of sleep quality and its components differed significantly between the control and experimental groups in the follow-up stage (Wilk's Lambda = 0.239, P = 0.032, F = 4.256). In the post-test, this statement did not hold (Wilk's Lambda = 0.351, P = 0.159, F = 2.11). In order to determine the difference between the two study groups with respect to each target variable, MANCOVA was performed.

According to table 4, the results of MANCOVA indicated that there were significant differences between experimental and control groups in terms of the worry and work-social adjustment variables among GADs (P < 0.05). In other words, UP had a significant effect on reducing worry and

work-social adjustment in the post-test and follow-up stages. The greatest effect size of treatment was on worry (0.6) in the post-test, and sleep quality (0.58) in the follow-up stage showed the highest degree of effectiveness of UP. Among the variables studied, sleep disturbances and sleep duration showed the least effect size in the post-test and follow-up stages, respectively.

Discussion

The current study had two goals; first, to evaluate the effectiveness of UP on reducing the symptoms of GAD and sleep problems as comorbid symptoms, and second, to evaluate the effectiveness of this protocol on improving overall performance (work-social adjustment).

Table 2. Demographic characteristics of the participants

Parameter		Experimental group	Control group	P-value
Age (year)*		30.16 ± 7.62	31.00 ± 10.51	0.48
Gender	Female, No (%)	8 (66.67%)	7 (58.33%)	0.22
	Male, No (%)	4 (33.33%)	5 (41.67%)	
Education	High school dropout, No (%)	3 (25%)	3 (25%)	0.31
	High school graduate, No (%)	5 (41.67%)	3 (25%)	
	Associate's degree, No (%)	1 (8.33%)	2 (16.67%)	
	Bachelor's degree, No (%)	2 (16.67%)	3 (25%)	
	Master's degree, No (%)	1 (8.33%)	1 (8.33%)	
Marital status	Single, No (%)	6 (50%)	5 (41.67%)	0.68
	Married, No (%)	6 (50%)	7 (58.33%)	
Medication	Anti-anxiety and depression, No (%)	8 (66.67%)	5 (41.67%)	0.68
	Anti-anxiety, No (%)	4 (33.33%)	7 (58.67%)	

Table 3. Comparison of mean and standard deviation of target variables under different experimental conditions in the control group

Variable	Control			Experimental		
	Pre-test	Post-test	Follow-up	Pre-test	Post-test	Follow-up
	M ± SD	M ± SD	M ± SD	M ± SD	M ± SD	M ± SD
PSWQ	7.41 ± 63.66	4.88 ± 44.27	6.69 ± 37.54	5.79 ± 63.58	6.06 ± 31.75	4.50 ± 26.36
PSQI	3.36 ± 10.33	2.77 ± 7.09	2.46 ± 7.09	4.00 ± 10.00	2.58 ± 5.16	2.50 ± 4.90
Subjective	0.60 ± 2.00	0.63 ± 1.00	0.77 ± 1.00	0.66 ± 1.91	0.51 ± 0.41	0.40 ± 0.18
Latency	0.88 ± 1.33	0.80 ± 1.36	0.60 ± 1.18	0.79 ± 1.58	0.96 ± 1.25	0.67 ± 1.54
Duration	1.12 ± 2.00	1.00 ± 1.72	1.03 ± 1.45	1.40 ± 1.83	0.95 ± 1.00	0.94 ± 0.90
Efficiency	0.49 ± 0.33	0.30 ± 0.90	0.30 ± 0.90	0.38 ± 0.16	0.28 ± 0.83	0.00 ± 0.00
Disturbance	0.49 ± 1.33	0.30 ± 1.09	0.30 ± 1.09	0.79 ± 1.41	0.42 ± 1.00	0.00 ± 1.00
Medication	0.65 ± 1.66	1.18 ± 1.00	0.68 ± 1.45	0.66 ± 1.58	0.90 ± 0.58	1.18 ± 1.00
Daytime	0.65 ± 1.66	0.40 ± 0.81	0.53 ± 0.90	0.79 ± 1.50	0.57 ± 0.83	0.64 ± 0.27
WSAS	4.53 ± 27.25	3.54 ± 21.18	4.15 ± 19.36	8.79 ± 26.83	5.42 ± 14.83	3.19 ± 13.72

M: Mean; SD: Standard deviation; PSWQ: Penn State Worry Questionnaire; PSQI: Pittsburgh Sleep Quality Index; WSAS: Work and Social Adjustment Scale

In relation to the first study goal, the results showed that UP as a psychological intervention reduced the symptoms of GAD. This conclusion was consistent with the findings of other studies (21, 43, 44). Barlow et al. showed that UP was effective on reducing the symptoms experienced by people with panic disorder, obsessive-compulsive disorder (OCD), social anxiety disorder, and GAD (45). Cuijpers et al., in a meta-analysis, examined 41 studies on psychological treatments of GAD and concluded that these treatments are effective on symptoms of GAD (46). Studies have shown that people with GAD have difficulty in emotion regulation and many emotional disorders are associated with defect in emotional regulation. UP, in various ways, such

as emotional exposure (Module 7), improves emotion regulation strategies and the symptoms of emotional disorders. In addition, the onset of exposure may lead to a reduction in the severity of the symptoms experienced. This latter case can also be a sign of a change in the structure of the patient's fear and anxiety or the mechanism of action, and the effectiveness of exposure in the patient, which causes the person to discard negative emotions and replace them with new contextual experiences (42, 47-50). Avoidance as a persistent factor plays an important role in GAD as well as other emotional disorders, the challenge being one of the core modules of treatment in the emotional protocol (Module 5) (42, 51).

Table 4. Descriptive statistics and effect size of the unified protocol of transdiagnostic treatment based on multivariate analysis of covariance on target variables in the experimental and control group

Group	Variable	F	P	Effect size	P-value
Post-test	PSWQ	30.41	0.000	0.603	0.99
	PSQI	3.29	0.091	0.190	0.39
	Subjective	12.41	0.003	0.470	0.90
	Latency	0.33	0.571	0.023	0.84
	Duration	1.94	0.185	0.122	0.25
	Efficiency	1.89	0.190	0.119	0.25
	Disturbance	0.004	0.953	0.000	0.50
	Medication	3.49	0.083	0.200	0.41
	Daytime	0.43	0.839	0.003	0.54
	WSAS	21.78	0.000	0.52	0.99
Follow-up	PSWQ	20.591	0.000	0.52	0.99
	PSQI	3.023	0.106	0.189	0.36
	Subjective	17.92	0.001	0.580	0.97
	Latency	8.20	0.013	0.387	0.75
	Duration	0.27	0.612	0.020	0.07
	Efficiency	0.344	0.568	0.026	0.08
	Disturbance	0.344	0.568	0.026	0.08
	Medication	2.47	0.121	0.174	0.33
	Daytime	4.64	0.050	0.263	0.51
	WSAS	16.67	0.001	0.46	0.97

PSWQ: The Penn State Worry Questionnaire; PSQI: Pittsburgh Sleep Quality Index; WSAS: Work and Social Adjustment Scale

Awareness and acceptance of emotions and their expression are effective strategies for regulating emotion that is repeatedly used in the transdiagnostic approach. Based on increasing motivation modules in UP, emotional awareness, especially situational exposure, results in the development of positive personality traits such as self-esteem and self-efficacy (42, 52). Psychological training (Module 2) and confrontation with emotional behaviors (Module 5) make extensive changes. The main component of Module 2 in UP emphasizes the adaptive nature of emotions, which may lead to more acceptance of emotions in Module 3 (mindfulness-based awareness from emotion) (53). In addition, evidence suggests that patients, faced with avoidance behavior, learn about their emotion and reduce distress in response to emotional experiences, which also leads to a modification in beliefs about emotions and non-judgmental awareness (53-55).

The main goal of this study was to evaluate the efficacy of this treatment on sleep problems as comorbid symptoms in GADs. The results of this study showed that UP was effective on the components of subjective sleep quality in the post-test and subjective sleep quality, sleep latency, and daytime dysfunction in follow-up. In total, there was a significant difference between the two groups in terms of reducing sleep problems in the follow-up stage. Sleep disorders have high comorbidity with a number of psychiatric disorders (56-58); therefore, they can be considered as a diagnostic process (56). Very few studies have considered the effect of sleep problems as comorbid symptoms on the psychological consequences of treatment in patients with GAD. In a meta-analysis by Belleville et al., among the 1205 cognitive-behavioral studies on anxiety disorders, only 25 had studied sleep (59, 60). The explanation of the results of the present study is that sleep problems are associated with different forms of psychopathology such as mutual relationship with emotional regulation, joint interactions with genetics, and serotonin and dopamine function (56). Various therapeutic protocols can be effective on these issues. In this regard, mindfulness intervention has been implemented in recent years for sleep problems (61, 62). These interventions focus on the development of new skills for effective management of anxiety, rumination, and disturbing thoughts, thereby, reducing the link between activation of the limbic system and sleep disturb-

ance (56). In UP, these techniques were dealt with only in Module 3 and during one session. Therefore, the use of transdiagnostic treatment for sleep problems, which includes core modules (applicable to all patients regardless of diagnosis) and is optional (targeting the specific aspects of any sleep disorder), is likely to be helpful in reducing the experience of sleep problems (63). For example, a recent meta-analysis evaluated the impact of CBT on anxiety disorders in relation to sleep disorders on an intermediate level (59). Accordingly, the conclusion that the sleep problems of these people have not changed much in the post-test phase can be explained. This case, which shows only the subjective sleep quality component at this stage, can be related to the change in other variables of this study. One of the most important of these variables is the worry that has been associated with the assessment of people from their sleep problems (64). Pre-sleep worry can also explain the meaningful impact of UP on the sleep latency component in this study. Various studies have looked into this issue and introduced pre-sleep worry as a risk factor for increasing sleep onset latency (65). Therefore, with a significant reduction in the worry of people with GAD, it can be expected that sleep latency will also improve in these individuals. Improvement in the component of daytime dysfunction can assess with the progress of these individuals in work-social adjustment. This study showed that UP in addition to having a significant impact on work-social adjustment as the second goal of the study, affects the individuals' perceptions of daily turmoil due to sleep problems at night. In this regard, Jansson-Frojmark in 2014 showed that the WSAS can explain the malfunction of insomniacs throughout the day (66).

The current study had some limitations. A limitation was that in this study 24 participants were used as the sample, which seems to be small for large-scale conclusions about the effectiveness of the intervention. The current sample size was selected due to the restricted access to the participants in Kermanshah. Based on the sample size, the results cannot be generalized to the general population. Another limitation was that sleep problems included both clinical and non-clinical issues. Only 2 of the patients with GAD had severe sleep problems. Since clinical sleep problems are associated with unique characteristics and can affect other symptoms, a clinical review becomes

more imperative in future studies. Other comorbidities were not considered; this was another limitation of the present study. Psychiatric disorders can affect the sleep pattern of people and other symptoms experienced by them. Moreover, some components such as emotional awareness and cognitive re-appraisal were used only in one session, which can be used at more sessions.

Future research into controlled studies with larger samples of GADs with comorbid disorders [e.g., major depressive disorder (MDD), post-traumatic stress disorder (PTSD), OCD] and longer follow-ups are needed to increase the generalizability of the findings. It is also recommended that the effectiveness of UP be compared to other cognitive-behavioral models of GAD.

Conclusion

In general, considering the benefits of UP in the transdiagnostic treatment of emotional disorders and its effectiveness on the symptoms of GAD, comorbid symptoms, and improvement of work-social adjustment, its application in clinical and academic centers is considered important in terms of cognitive-behavioral therapy. Furthermore, considering the efficacy of UP in improving GAD, as a basal disorder (Barlow), it can also be applied to other anxiety disorders.

Conflict of Interests

Authors have no conflict of interests.

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