## Original Article

# The Comparison of Emotional Dysregulation and Experiential Avoidance in Patients with Insomnia and Non-Clinical Population

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**Abstract**

**Introduction:** Given the harmful effects of insomnia and the need for a better understanding of the disorder as well as providing proper care, the present study aimed to compare the emotional dysregulation and experiential avoidance in patients with insomnia and non-clinical individuals.
**Methods:** To conduct the present cross-sectional study, two sample groups were selected randomly. The first group consisted of 100 patients with insomnia who visited the Sleep Disorders Research Center at Farabi hospital in Kermanshah, Iran. The second group consisted of 100 administrative staff of Kermanshah University of Medical Sciences (KUMS) without sleep problems. For data collection, three questionnaires were used: Difficulties in Emotion Regulation Scale (DERS), Pittsburgh Sleep Quality Index (PSQI), and Experiential Avoidance Questionnaire (EAQ). The data were analyzed through the analysis of variance, using the SPSS version 13.
**Results:** The total mean score of difficulties in emotion regulation in patients with insomnia and non-clinical people measured 101.18 (45.60) and 86.77 (21.88), respectively, and the mean scores of experiential avoidance measured 37.53 (12.33) and 28.74 (21.88) in patients with insomnia and non-clinical people, respectively. The results of the present study revealed that there was a significant difference between the two groups in terms of emotional dysregulation and experiential avoidance.
**Conclusion:** According to the current results, it is suggested that therapists consider the role of emotional dysregulation and experiential avoidance in the treatment and care of chronic insomnia. To solve these problems, it is recommended third-wave therapies be used, especially acceptance and commitment therapy.

## Introduction

Some claim that getting enough sleep is a major aspect of healthy lifestyles.[1] Research indicates that sleep disorders have adverse consequences, such as drowsiness during the day,[2] anxiety and depression,[3] public health problems, and aggression.[4] The results of a study revealed that the prevalence of insomnia in Western Europe was between 20% and 40%.[5] Moreover, the results of reviewing 50 epidemiological studies demonstrated that the prevalence of insomnia measured 9%-15%,[6] which was reported 5%-25% by some other studies.[7] Overall, it is estimated that 30% of people around the world experience insomnia at some point in their lives.[8]

Using the data from experimental studies, researchers have suggested that psychological vulnerability may lay the groundwork for people to respond to stress through the psychological processes involved in sleep and interfere in mental processes that interpret the inefficient sleep.[9] A cursory glance at the literature seems to indicate that the focus of most related studies has essentially been on arousal. In fact, the available literature suggests that a wide range of sleep parameters are affected by arousal. It should be noted that the operational definitions of arousal were not the same in these studies. Overall, the term 'excitement' has been regarded as a multidimensional construct that includes thoughts, physical sensations and stressful practices with aspects of emotional arousal.[10]

Evidence suggests that there is a complex and bilateral relationship between emotions and sleep. For example, it is claimed that one's emotional well-being is strongly

influenced (reduced) by low sleep quality, and sleep quality is reduced by some emotions.[11] Studying the emotional functioning as a factor that can lead to sleep problems can increase our knowledge about the effects of emotions on sleep.[12] The results of a study performed by Sadeh et al.,[13] demonstrated that sleep duration could be predicted by emotion-focused coping (purposeful coping in emotion regulation in problematic situations).

Emotional dysregulation is an incompatible response to emotions. These maladaptive methods include the non-acceptance responses, the difficulty in controlling behaviors during emotional distress, and the difficulty in conducting targeted behaviors.

The experiential avoidance can be a risk factor for a range of mental disorders, such as depression, somatic disorders, anxiety, and insomnia.[14] Experiential avoidance means avoiding unwanted or undesirable thoughts/ feelings. In other words, experiential avoidance means not being willing to accept inner feelings and thoughts.[14]

In a study done by Smith, it was concluded that experiential avoidance led to psychological damages, including substance abuse, obsessive-compulsive disorder, panic disorder, borderline personality disorder, and post-traumatic stress.[15] In addition, research shows that emotional disorders and sleep disorders are related.[16] Therefore, experiential avoidance can be associated with insomnia. Moreover, avoidance of internal thoughts and experiences increase the physiological arousal and negative emotions, thereby leading to insomnia.[17] Therefore, given the harmful effects of insomnia and the need for a better understanding of the disorder as well as providing proper care, the present study aimed to compare the emotional dysregulation and experiential avoidance in patients with insomnia and non-clinical people.

## Materials and Methods

To conduct the present cross-sectional study, two groups were selected randomly. The first group consisted of 100 patients with insomnia who visited the Sleep Disorders Research Center at Farabi hospital in Kermanshah, Iran, in 2015. The second group consisted of 100 administrative staff of Kermanshah University of Medical Sciences (KUMS) with good sleep quality. For data collection, three questionnaires were used: Difficulties in Emotion Regulation Scale (DERS), Pittsburgh Sleep Quality Index (PSQI), and Experiential Avoidance Questionnaire (EAQ). The data were analyzed through the analysis of variance, using the SPSS software version 13. The sampling method in both groups was simple random sampling, and the samples were randomly chosen through picking the files of patients recorded in the center. Further, the inclusion criteria were their consent to participate in the study, being in the 18-60 age range, and having middle school education at the least. As for the second group (non-clinical administrative staff), they were further divided into two groups after completing the PSQI: the ones with

low sleep quality and the ones with good sleep quality. Finally, those with low sleep quality were excluded from the study (50 subjects).

Therefore, the sample population included two groups of subjects: patients with insomnia (100 subjects) and the ones with good sleep quality (100 subjects).

After sampling and diagnosing the first group with insomnia through interviews (according DSM5) and polysomnography, we asked the patients with insomnia to prepare themselves to participate in the test, and the questionnaires were distributed among them. To this end, a detailed explanation of how to complete the questionnaires was supplied by a member of the research team, and the participants were requested to ask for more clarification in case of encountering problems filling out the questionnaires. Further, the questionnaires were completed individually in the presence of the researcher.

The research team also assured them of the confidentiality of the collected information. Finally, the questionnaires were collected and then analyzed. The same procedure was followed for the second group, too.

In the end, the data of 200 subjects were analyzed through the analysis of variance, using the SPSS software version 13.

DERS: This scale was designed by Gratz and Roemer based on the conceptualization of them. The initial scale of the difficulty in emotional regulation was a self-reported 41 questionnaire that was designed for the evaluation of the difficulty in clinically emotional. The questionnaire was prepared based on the generalized expectation scale.

Scoring items on this scale is based on the 5-point Likert scale. Following a factor analysis by the authors, a total of 5 items were eliminated from the initial scale and the total questions of the total scale fell to 36 items. The factor analysis confirmed the existence of six factors, including non-acceptance of emotional responses, difficulties of engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. In addition, the overall internal reliability of the scale was 0.93, which measured 0.85, 0.89, 0.86, 0.80, 0.88, and 0.84 for each of the above-mentioned sub-scales, respectively. All six subscales had a significant correlation with the scale of acceptance and commitment.[18] The internal consistency reliability of the instrument was also examined and approved, using Cronbach's alpha ($\alpha = 0.86$). The reliability of the instrument was approved in the present study ($\alpha = 0.83$).

EAQ: This 32-item instrument was developed by Hayes et al., Moreover, the former versions of the scale used to consist of 16 and nine items, but the latest version, which was used in the present study, has 10 items on a seven-point Likert scale (never = 1, very slightly = 2, slightly = 3, sometimes = 4, a lot = 5, often = 6, always = 7). In a study, a single-factor structure was reported for this scale, and the reported Cronbach's alpha measured 0.84.[19] Additionally,

the reliability of the questionnaire was evaluated in Iran (α = 0.82). To check the validity of the scale, the Beck's depression and anxiety questionnaire and emotional dysregulation scale were employed, and the correlation coefficients measured 0.44, 0.59, and 0.59, respectively.

Furthermore, the results of factor analysis showed that the factors had appropriate weights.[20] The reliability of the instrument was approved in the present study (α = 0.85).

PSQI: This standard Index, developed by Buysse et al.,[2] is a self-report questionnaire with 18 questions classified under seven items. The first component is related to subjective sleep quality, determined by one question (question 9). The second one is related to delays in falling asleep, determined by two questions, i.e. the average score of the second question and section 'A' of the fifth question.

Sleep duration was the third component, determined by one question (question 4). The fourth one has to do with one's sleep efficiency and effectiveness whose scores are calculated by dividing the total sleep hours by the total hours when one is in bed, multiplied by 100.

Sleep disorder is the fifth component, determined by calculating the average scores of the fifth question. The sixth component deals with the consumption of sleeping pills, determined by one question (question 6). Poor performance is the seventh one, determined by two questions (the average of the scores of the seventh and eighth questions). In this questionnaire, the score of each question ranges from zero to three. In addition, the total of mean scores for all components makes up the total score of the tool, ranging from zero to 21. The higher the score, the lower the sleep quality will be, and a score higher than five indicates poor sleep quality.[21] This questionnaire was validated by Buysse et al.,[21] and its reliability and validity measured 0.83 and 0.75, as determined by Cronbach's alpha, respectively. In addition, the reliability of the instrument measured 0.87, using the Cohen's kappa coefficient in an Iranian study conducted by Hossein-Abadi et al.,[22] The reliability of the instrument was approved in the present study (α = 0.75).

## Results

The average age (SD) in patients with insomnia was 35.47 (7.43) as opposed to 32.25 (6.90) in non-clinical people. The results indicated that 62% of the patients with insomnia were female as opposed to 57% in non-clinical people (Table 1). The means and standard deviations of the variables under study in both groups are shown in Table 2.

As can be seen in Table 2, the total mean score of the difficulties in emotion regulation in patients with insomnia and non-clinical people measured 101.45 (18.68) and 86.77 (21.77), respectively. In addition, the mean scores of experiential avoidance measured 37.53 (12.33) and 28.74 (10.53) in patients with insomnia and non-clinical people, respectively. Given the objective of the research and the availability of the assumptions to

**Table 1.** Socio-demographic characteristics of participants included in analyses

| Characteristics | Non-clinical group No. (%) | Patient group No. (%) |
|---|---|---|
| Age (y) | | |
| <30 | 14 (14) | 54 (54) |
| 31-50 | 60 (60) | 45 (45) |
| >50 | 26 (26) | 1 (1) |
| Gender | | |
| Female | 57 (57) | 62 (62) |
| Male | 43 (43) | 38 (38) |
| Education level | | |
| Junior school | 5 (5) | 7 (7) |
| High school | 10 (10) | 13 (13) |
| University degree | 85 (85) | 80 (80) |
| Employment | | |
| Unemployment | 0 (0) | 18 (18) |
| Student | 0 (0) | 5 (5) |
| Employed | 100 (100) | 77 (77) |
| Marital status | | |
| Married | 65 (65) | 60 (60) |
| Single | 30 (30) | 32 (32) |
| Other | 5 (5) | 8 (8) |

**Table 2.** The means and standard deviations of the variables under study in both groups

| Variable | Patient group Mean (SD) | Non-clinical group Mean (SD) | Levene's test P (F) |
|---|---|---|---|
| **Difficulties in emotion regulation** | | | |
| 1. Nonaccept | 14.75 (8.52) | 13.06 (5.09) | 0.07 (3.27) |
| 2. Goals | 16.47 (3.88) | 12.84 (3.85) | 0.50 (0.43) |
| 3. Impulse | 17.42 (5.05) | 13.72 (4.79) | 0.37 (0.80) |
| 4. Aware | 17.54 (4.29) | 18.08 (3.99) | 0.87 (0.02) |
| 5. Strategies | 21.35 (6.53) | 18.15 (6.76) | 0.67 (0.17) |
| 6. Clarity | 12.18 (3.99) | 10.69 (3.97) | 0.30 (1.05) |
| Total | 101.45 (18.68) | 86.77 (21.77) | 0.11 (2.31) |
| Experiential avoidance | 37.53 (12.33) | 28.74 (10.53) | 0.19 (1.69) |

1. Non acceptance of emotional responses, 2. Difficulties engaging in goal-directed, 3. Impulse control difficulties, 4. Lack of emotional awareness, 5. Limited access to emotion regulation strategies, 6. Lack of emotional clarity regulation and the total score of experiential avoidance.

analyze the data, the multivariate analysis of variance was used (Table 3). According to the results in Table 3, the two groups were significantly different in terms of at least one of the components of difficulties in emotion According to eta squared and Wilks' lambda, it can be said that the independent variables together can predict 25% of insomnia. To study each of the variables in both groups, the tests of between-subjects effects was employed (Table 4).

The results indicated that the two groups were significantly different in terms of difficulties of engaging in goal-directed behaviors, limited access to emotion regulation strategies, impulse control difficulties, lack of emotional clarity, and the total score of experiential

**Table 3.** The results of multivariate analysis of variance

| Effect | Value (F) | P | Partial eta squared (observed power) |
|---|---|---|---|
| Pillai's trace | 0.25 (9.36) | 0.001 | 0.25(1) |
| Wilks' lambda | 0.75 (9.36) | 0.001 | 0.25(1) |
| Hotelling's trace | 0.34 (9.36) | 0.001 | 0.25(1) |
| Roy's largest root | 0.34 (9.36) | 0.001 | 0.25(1) |

avoidance. Further, difficulties of engaging in goal-directed behaviors played a more significant role in the differentiation between the groups. To compare the total score of difficulties in emotion regulation in patients with insomnia and non-clinical people, one-way analysis of variance was employed. The results showed that difficulties in emotion regulation were higher in patients with insomnia ($P < 0.001$, F = 26.13).

## Discussion

The results of the present study revealed that difficulties in emotion regulation were higher in patients with insomnia compared to non-clinical people. Moreover, the results of a longitudinal study on the relationship between difficulties in emotion regulation and insomnia demonstrated that there was no relationship between the emotion regulation and the onset and maintenance of insomnia. However, a different pattern was observed in subsequent periods, in which difficulties in emotion regulation correlated with the onset and maintenance of insomnia. In addition, the results of this longitudinal study showed that insomnia could be predicted by difficulties in emotion regulation.[23] Furthermore, the results of another study demonstrated that there was a negative relationship between difficulties in emotion regulation and sleep quality.[24]

To explain the results and the role of difficulties in emotion regulation in insomnia, two models on emotional experiences can be cited. In the cognitive model of insomnia, the exacerbation of cognitive activity in patients with insomnia has been described as unlimited.[25] Accordingly, the cognitive system encounters a problem, and given that emotion regulation is a cognitive task, it encounters malfunction. In the bio-psychosocial model of insomnia, patients with insomnia have been characterized by having strong emotions.[26] In other words, difficulties in emotion regulation have been regarded as the

characteristics of infected ones in both models.

On the other hand, it is claimed that people with difficulties in emotion regulation usually avoid interpersonal conflicts. In other words, their pattern of conflict resolution is avoidance. They do not attempt to express emotions such as sadness, anger, and hatred, rather they often have them suppressed. They are not flexible in environmental events and are not able to control arousal, thus experiencing many negative emotions.[27] Therefore, the efforts to suppress arousal lead to insomnia and low sleep quality. In addition, the results of the present study revealed that experiential avoidance was higher in patients with insomnia compared to non-clinical people. The experiential avoidance is one of the constructs of acceptance and commitment theory, in which one of the main causes of disorders is one's connection with thoughts, emotions, and behavior.[28] In other words, one's dealing with thoughts and emotions are an indication of one's health. The results of the present study confirmed this general principle in the theory of acceptance and commitment, because the results showed that experiential avoidance played a role in predicting sleep disorders, as one of the psychological damages.

Therefore, those who have high levels of experiential avoidance attempt to avoid one's thoughts and emotions and even suppress them, and they do not like to experience these events, trying to escape from or control them in deliberate efforts.[17,29] These efforts are deliberate and conscious, which require the involvement of cognitive and intellectual functions, thereby increasing the mental and emotional arousal levels, decreasing the sleep quality.[30,31]

The present study was a cross-sectional one. Therefore, it is important to examine the effects of independent variables on sleep disorders in longitudinal studies. On the other hand, self-reporting tools were used to examine sleep, as a major issue. Therefore, it is suggested that other tools be used in future studies. It has to be mentioned that extreme caution should be exercised in generalizing the findings of the present study to other populations, because the present study was conducted in one region-namely, Kermanshah, Iran.

## Conclusion

The results of the current study revealed that difficulties in

**Table 4.** The Results of Analysis of Variance Between Groups

| Variable | Sum of squares | Mean square | df | F | P | Partial eta squared | Observed power |
|---|---|---|---|---|---|---|---|
| Difficulties in emotion regulation | | | | | | | |
| Nonaccept | 143.05 | 143.05 | 1 | 2.91 | 0.09 | 0.01 | 0.40 |
| Goals | 655.25 | 655.25 | 1 | 43.80 | 0.001 | 0.18 | 1 |
| Impulse | 685.43 | 685.43 | 1 | 28.25 | 0.001 | 0.12 | 1 |
| Aware | 13.66 | 13.66 | 1 | 0.79 | 0.37 | 0.004 | 0.14 |
| Strategies | 512.41 | 512.41 | 1 | 11.59 | 0.001 | 0.05 | 0.92 |
| Clarity | 110.27 | 110.27 | 1 | 6.95 | 0.009 | 0.03 | 0.75 |
| Experiential avoidance | 3863.20 | 3863.20 | 1 | 29.38 | 0.001 | 0.13 | 1 |

emotion regulation were higher in patients with insomnia compared to non-clinical people.

Hence, the results of the present study underscore the role of cognitive variables in the incidence of insomnia, which should be considered by therapists. Therefore, therapists should note that emotional dysregulation and experiential avoidance are not neglected in the care and treatment of chronic insomnia. To solve these problems, it is recommended that third-wave therapies be used, especially acceptance and commitment therapy.

### Ethical Issues

This study was approved by the Medical Research and Ethical Committee of KUMS, Kermanshah, Iran with registration No. KUMS.REC.1395.207 at June 22, 2016.

### Conflict of Interest

The authors declare no conflict of interest in this study.

### Author's Contributions

Conception and design: AZ, HKh, SR, MR, SK; Analysis and interpretation of the data: AZ; Drafting of the article: AZ; Critical revision of the article for important intellectual content: HKh, SR, SK; Final approval of the article: AZ, HKh, SR, MR, SK; Provision of study materials or patients: AZ; Statistical expertise: AZ, SK; Obtaining of funding: AZ; Collection and assembly of data: AZ, MR.

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