

# A study of comparing two cognitive-behavioral workshop for college students: Sleep, wakefulness program and perseverance program

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## ABSTRACT

**Introduction and Aim:** Researchers and specialists believe that health maintenance and improvement through university students, as a part of society, play a crucial role in community configuration which should not be ignored. Since there was a few studies in these fields, researchers have sought to explore how mentioned workshops is related to cognitive emotion regulation, anxiety, depression, and sleep quality for the student volunteers of Shiraz University of Medical Sciences. **Materials and Methods:** In a randomized controlled trial, 152 students were allocated into the 3 equal groups (study1: “perseverance workshop” study2: “sleep and wakefulness workshop” and control group). Data collection instruments were the Granovsky cognitive emotion regulation scale, the Beck depression and anxiety inventories and Pittsburgh sleep Quality Index (PSQI-P) Questionnaire. **Results:** The results of comparing the anxiety and depression between groups showed that there was a decreasing and significant trend in the two intervention groups, before and after the two workshops ( $P < 0.001$ ). For PSQ analysis, within-group comparisons in those who have participated sleep and wakefulness workshop showed that the change trend was significant and in linear form. In addition, to compare those who have participated in perseverance workshop with the control group, there was a significant difference between the pretest and posttest results in the Cognitive Emotion Regulation subgroups. **Conclusion:** It can be said that the implementation of the workshops could improve the emotional state of the participants in comparison to the control group.

**Keywords:** Mental health, perseverance, sleep and wakefulness, students, workshop

## Introduction

Nowadays, health is one of the most fundamental issues through which human’s success strategies can be utilized. Relevant

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experts and specialists believe that maintaining and improving the health of university students, as a part of society which play crucial role in the configuration of society, is of particular importance and should not be ignored. Because of its young human structure, the university faces some maladjustment along with some external and internal stressors, which might cause serious mental and psychological harm for students. Meanwhile, factors like the duality of the family environment and education, lack of adequate knowledge of the university and cultural contradictions with other students, family, social, moral, psychological, and mental problems originating from studying in remote universities generate certain abnormalities and difficulties for university students.<sup>[1,2]</sup> Although biological, social and ethical factors are effective in the emergence of such emotional features, including anxiety and depression, the strategies that individuals use to regulate their emotions is of great importance. According to Baqutayan, these strategies are actions that represent ways of coping with a person's state of tension and unpleasant events.<sup>[3]</sup> Cognitions or cognitive processes help people adjust their emotions and feelings and overcome intensity of their emotions.<sup>[4]</sup> One of the main areas of the functioning of excitement is the stimulation and adjustment of responses to stressors. In this context, emotion regulation strategies are considered as strategies for coping with stress.<sup>[2]</sup>

According to some researchers, cognitive behavioral workshops, with its impact on lifestyle and resolution of value conflicts, answers the basic questions of the human being about the purpose of life and the meaning of activities. Many studies have been done on the relationship between these factors and mental health.<sup>[5,6]</sup>

Clinical studies clearly state that cognition within determination and perseverance is associated with some changes leading to a series of positive emotions and feelings that are helpful for our health.<sup>[7]</sup> According to the studies, in the academic year 2016–2017, more than 4 million students entered the Iranian universities. Alongside the great importance of academic matters being the main goal of entering universities, physical and mental health of this group is of high importance not to be ignored. Owing to its young structure, is facing some internal/external stressful factors as well as a number of anomalies of which we can refer to the students' mental and psychological traumas. Here, factors such as the duality of family and academic environments, lacking enough knowledge of universities, cultural conflicts with other students, and family/social/moral/physical/psychological problems arising from studying far from home all result in increasing anomalies and traumas in students.

According to the reports released, 30% of students are suffering from depression and anxiety. The findings indicate that depression is the most common psychological disorder among the students; the degree of depression is above average in more than a fifth of the students. With this respect, the experts of psychology maintain that preserving and promoting the psychological health among students is of great importance;

this way the students can recognize their capabilities, and it also affects their academic progress as well as their research initiatives. The students are then capable of getting on well with stresses and common pressures of personal or academic life.<sup>[8-10]</sup>

Finally, it is worth mentioning that providing health in all its aspects is one of the most important issues of the countries all over the world. Thus, taking any steps towards the promotion of this issue is of great importance. The workshops about sleep and wakefulness style, according to a biological clock and strengthening perseverance has a positive relationship with reduced psychiatric symptoms and disorders as well as the promoted level of the individuals' mental and physical health. Therefore, it seems like that this issue needs to be taken into consideration when planning for prevention and therapy; the planning needs to be revolved around that. Since the studies done on the mental health of the students have been mainly about describing the mental health status of the students or identifying the factors that have to do with the students' mental health, it seems like that conducting researches on the effect of interventions on physical–mental health is needed. Understanding the relationships between workshops about strengthening perseverance and mental relief with regulating sleep/wakefulness style (based on the biological clock) on students' mental/physical health and psychoneuroimmunology calls for prospective longitudinal studies. Cross-sectional studies provide only some sections of reality and for having a deeper understanding, prospective interventional studies of the interrelationships of these factors seems necessary.

## Materials and Methods

The present study, utilized descriptive correlation design, was conducted on the first-year medical students of Shiraz University of Medical Sciences during the first semester of the academic year 2016–2017, of which 104 students, including (71.2%) females and (28.8%) males, were randomly selected as the study samples using the Morgan table. The students were participated voluntarily; and after signing the informed consent form and passing the pretest, a total of 104 eligible students were selected. Then, the subjects were equally allocated into 3 groups of intervention and control using the table of random numbers and computer by the simple random sampling method. The current applied study explored how cognitive-behavioral workshops is related to intention, cognitive emotion regulation, anxiety, depression, and sleep quality, both before and after the workshops, at the first phase, second phase and third phase in the three case experiment groups (experiment 1: “perseverance, willpower or intention workshop” experiment 2: “sleep and wakefulness workshop” and control group) during 9 months experiment. Undoubtedly, these criteria or descriptors are defined broadly enough to cover different flow experiences. In some studies, similar flow events have been reported in a diverse population. Similarly, different definitions for these variables has been provided and it has been measured with different

questionnaires such as: Garnefski Cognitive Emotion Regulation Questionnaire (CERQ), Beck Anxiety or Depression Inventory and Pittsburgh sleep Quality Index (PSQI-P).

Descriptive and inferential statistic was analyzed using SPSS 21; Pearson Correlation Coefficient was used to determine the relationship between variables and stepwise regression analysis was used to determine the variation level of variance of dependent variable; the significance level was considered as  $P < 0.05$ .

## Results

Participants in this experiment consisted of young college students aged 18, 19, and 20. The results of Chi-square test showed that there existed no statistically significant difference in age of individuals among the three groups and the three groups were similar in terms of age. The mean age of the students including both male and female was  $18.60 \pm 0.793$  years. Based on the findings, there was no significant difference between the experiment groups in pretest descriptive indices hence, the experiment groups were homogenous in terms of the mentioned factors.

In other word, there was no significant difference between the experiment groups regarding the demographic variables and questionnaire scores, and the groups were matched by the mentioned variables. Regarding the demographic data, no significant difference was reported between the groups in pretest assessments. Overall, these findings suggest that no significant differences do exist based on demographic group membership.

To compare the scores of sleep (PSQ), anxiety (ANX), and depression (DEP) statuses among the three groups, one-way ANOVA was used. Also, the changes between the pre and post

intervention scores in three groups were determined using this test. In within-group analysis, paired *t*-test was used for comparing the scores before and after the intervention. The results of One-Way ANOVA showed that the difference in the observed changes among the three groups was not significant at PSQ but the differences in the ANX and DEP domains were significant. This difference is due to the differences between the two groups of experiment and control ( $P < 0.001$  in both domains). So that the changes in ANX and DEP in the two experiment groups was more than that of the control group. In intragroup analysis, it was also observed that in the ANX domain, the changes seen in the control group were not significant, while the changes seen in the other two groups were very significant. However, in the DEP domain, although the changes in the control group were also significant, the rate of change is to increase the score of Dep. However, in the two groups, the amount of changes is significant and decreasing [Table 1].

For PSQ analysis, within-group comparisons showed that the change trend was significant in all three groups, with the difference that the changes in the first group was in the form of grade 2 (first increase and then decrease), in the second group was in the form of linear and grade 2, but in the third group was in the form of grade 3 (First increase then decrease and increase again). However, no significant changes were observed between the three groups by comparing the three groups [Table 2].

For PSQ subscales, analysis showed that in within-group comparisons, the change trend was significant and decreasing in Sleep Latency, Habitual Sleep Efficiency and Sleep Disturbances for the first and second group, while the changes seen in the control group were significant and increasing. However, in within-group, no significant changes were observed in the three groups in Subjective Sleep Quality, Sleep Duration, Use of Sleep Medication, and Daytime Dysfunction.

**Table 1: Comparing Between 3 Groups in Pittsburgh Sleep Quality (PSQ), Anxiety (ANX), and Depression (DEP) Parameters**

Variables		Groups			Statistic	P
		Experiment 1	Experiment 2	Control		
PSQ	Baseline	7.15±4.46	7.17±4.43	7.26±4.53	0.010	0.990
	Final	7.72±4.18	6.97±3.52	7.44±3.42	0.418	0.659
	Change	0.15±2.13	-0.60±2.64	0.44±2.12	2.20	0.115
	Statistic	0.44	1.47	1.29		
	P-value	0.659	0.148	0.203		
ANX	Baseline	14.35±15.16	14.25±15.05	14.71±16.02	0.013	0.987
	Final	13.57±15.91	13.43±15.74	14.18±15.72	0.025	0.976
	Change	-1.75±1.27	-1.70±1.12	-0.26±1.58	15.5	<0.001
	Statistic	8.67	9.73	1.02		
	P-value	<0.001	<0.001	0.314		
DEP	Baseline	12.48±9.50	12.50±9.47	11.85±9.86	0.078	0.925
	Final	11.15±9.44	11.26±9.35	12.97±9.88	0.442	0.644
	Change	-1.77±1.16	-1.80±1.16	1.13±2.20	44.5	<0.001
	Statistic	9.63	9.90	3.16		
	P-value	0.001	<0.001	0.003		

**Table 2: Comparing Between 4 Phases in Pittsburgh Sleep Quality Parameter**

Variables	Phases	Group			Statistic	P
		Experiment 1	Experiment 2	Control		
PSQ	Baseline	7.57±4.67	7.58±4.62	7±3.74	0.010	0.990
	First phase	8.27±4.46	8.02±4.24	7.71±3.63	0.056	0.95
	Second phase	7.52±4.51	7.12±4.05	6.86±3.60	0.361	0.691
	Third phase	7.72±4.18	6.97±3.52	7.44±3.42	0.418	0.659
	Statistic	4.64	6.19	5.54		
	P-value	0.022	0.001	0.011		

## Discussion and Conclusion

In this study, workshop and education was considered as a predictor of sleep quality in college students. Generally, adequate rest, sleep and comfort of the patient as well as spiritual health care, are the main responsibilities of healthcare providers. Precise assessment of patients' previous sleep habits is very important for their mental and spiritual health.<sup>[11]</sup> Our results revealed presence of high prevalence of poor sleep quality among case study groups. This may be attributed to numerous activities and stresses facing college students, which may necessitate excessive study during night. This rate coincides with two recent studies from Pakistan<sup>[12]</sup> and Spain.<sup>[13]</sup> Such high rates of poor sleep among college students from different countries requires great concerns for dealing with stresses facing medical students. This can be improved through counseling and regular education to improve behavior and lifestyle. On the other hand, lower rates of poor sleep were reported from older studies from the USA<sup>[14]</sup> and Lithuania.<sup>[15]</sup> This discrepancy may be attributed to the differences in sample sizes, race, target population, or the time of conduction of the studies. In addition, nowadays there is a marked increase in the night use of social media, which may increase the percentages of poor sleepers. However, this may be attributed to higher prevalence of psychologic problems as anxiety and depression among college students, and the association between these problems and sleep disturbance.<sup>[16]</sup>

Younger students (<21 years) and those enrolled in the basic educational years in the current study had higher rates of poor sleep quality compared to comparative partners and enrollment in the basic year was the one predictor of poor sleeping. This may be attributed to the high number of lectures, study load during the early pre-clinical years. Those participants may not adequately adapted to such high load after studying at secondary schools. Anxiety and the pressure of passing the first years of medical school might also play role.<sup>[17]</sup> This finding coincides with results of a study of Brick *et al.* from California University, USA.<sup>[14]</sup> It agrees also with results of a recent study, 2017, from Egypt;<sup>[18]</sup> as students enrolled in the preclinical years obtained higher score of PSQI compared to others. On contrary, the Indian study revealed a significant positive association between age and poor sleep quality. This inconsistency of results may be because the Indian study was conducted among undergraduates, interns and post-graduate physicians. The latter two groups may have more load, stresses, and night on-calls. This may precipitate poor

sleeping; as doctors may suffered from acute sleep deprivation during their on-calls.<sup>[19,20]</sup>

A major component of poor sleep quality is later sleep and wake times and this might be the reason behind inability to attend their classes. In the current study, anxiety was the predictor of poor sleep quality, which is in line with the results of studies from India<sup>[19]</sup> and Ethiopia.<sup>[21]</sup> Similarly, the Egyptian study<sup>[18]</sup> reported presence of a significant positive correlation between anxiety and PQSI scores. Furthermore, students who were categorized as having morbid depression were more poor sleepers than others. This finding coincides with results from Virginia,<sup>[22]</sup> Ethiopia<sup>[21]</sup> and Egypt.<sup>[18]</sup> There is an evidence of association between depression and insomnia and hence with poor sleeping.

It seems that increasing sleep health beliefs among educational workshops can reduce students' anxiety and depression, but increase quality of sleep, especially for PSQ analysis, within-group comparisons showed that the change trend was significant in all three groups, with the difference that the changes in the first group was in the form of grade 2 (first increase and then decrease), in the second group was in the form of linear and grade 2, but in the third group was in the form of grade 3 (First increase then decrease and increase again). However, no significant changes were observed between the three groups by comparing between the three groups.

The present experiment aimed to explicate the relationships between physical or mental health in Shiraz University of medical sciences students and strengthen perseverance and regulating sleep and wakefulness workshop. Although much cross sectional work has been done and reported in literature on these variables and the impact on various factors, few studies have explored these interactions longitudinally.

However, no work specifically focusing on composition of all these variables, has been conducted to date. This experiment has sought to fill this gap in the empirical literature. It is hoped that this work will inspire other researchers to extend their efforts toward finding comfort for the college student population plagued with physical or mental disorders that may be related to cognition and relationship difficulties.

Many people experience multiple psychological problems in varying degrees throughout their lives, problems that can

cause negative changes and have devastating effects on their lives. Results of the current experiment indicated that training the sleep and wakefulness health, stress coping and willpower strengthening skills, could promote mental health and reduce anxiety and stress among the studied students.

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### Conflicts of interest

There are no conflicts of interest.

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