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# Comparison of the effect of two educational methods based on mindfulness and cognitive emotion strategies on psychological well-being and anxiety of eighth-semester midwifery students before the final clinical trial

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## Abstract:

**BACKGROUND:** Midwifery services help maintain and improve the health of the community. However, a comprehensive examination reduces students' psychological well-being by creating anxiety. For this purpose, the present study was conducted to determine and compare the effect of two educational methods based on mindfulness and cognitive emotion strategies on psychological well-being and anxiety of eighth-semester midwifery students before the final clinical trial.

**MATERIALS AND METHODS:** This study was a quasi-experimental three-group study with available sampling method that was performed on 30 eighth-semester midwifery students of the School of Nursing and Midwifery of Isfahan University of Medical Sciences in 2020–2021. Data collection tools were psychological well-being and Test Anxiety Questionnaire. Two intervention groups were trained for eight sessions. The control group did not receive any training program. The data collected by SPSS version 22 software were analyzed by analytical statistical tests of ANOVA and least significant difference *post hoc* test.

**RESULTS:** The results showed that there was a statistically significant difference between the three groups in terms of components of test anxiety and psychological well-being. Furthermore, emotion regulation training and mindfulness-based training reduced test anxiety and increased students' psychological well-being before the comprehensive test ( $P = 0.001$ ).

**CONCLUSION:** It is recommended that educational programs be considered before the comprehensive examination to promote the mental health and success of these students.

## Keywords:

Anxiety, cognitive emotion regulation, education, mental health, mindfulness, psychological well-being

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## Introduction

Midwifery as a branch of medical sciences has a wide range of roles in the field of mother and child, whose services help maintain and improve

the health of society. For this reason, a comprehensive pregraduation examination for midwifery students is held to assess students' skills.<sup>[1]</sup> Anxiety is one of the factors affecting the success rate of

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midwifery students in the comprehensive examination of midwifery students.<sup>[1]</sup> Test anxiety is a special form of anxiety that can be associated with physical, cognitive, and behavioral symptoms.<sup>[2,3]</sup> Given the high impact of anxiety and its negative consequences, the sources of anxiety and its effects should be identified.<sup>[4-8]</sup> Controlling anxiety in students can be associated with increasing students' academic success.<sup>[9-11]</sup> Examination anxiety has a negative and significant relationship with psychological well-being, and the higher the test anxiety, the lower the psychological well-being.<sup>[12]</sup> The goal of psychological well-being is to create mental health and a healthy environment for establishing proper human relationships.<sup>[13]</sup> As a result, various methods of psychological interventions on test anxiety and psychological well-being have been studied.<sup>[11]</sup> The results of studies have shown that behavioral-cognitive interventions including interventions based on mindfulness and cognitive emotion regulation have received strong support due to their effect on reducing anxiety and psychological well-being.<sup>[8-11]</sup> Mindfulness-based interventions require the development of judgment avoidance, intentional awareness, and focus on the present moment in the individual's attention, which focuses on the present moment of processing all aspects of immediate experience.<sup>[14-16]</sup> Mindfulness therapies focus on both physical and mental dimensions.<sup>[17]</sup> In psychotherapy research, mindfulness is considered a state of promoting self-awareness thinking to improve well-being and anxiety.<sup>[18]</sup> Cognitive regulation of emotion is also one of the factors that is considered a mediating variable to reduce anxiety and increase mental health and psychological well-being.<sup>[18,17]</sup> Cognitive emotion regulation is defined as the mode of cognitive processing for the management of emotion-stimulating information that encompasses a wide range of cognitive, behavioral, emotional, and physiological responses.<sup>[18,19]</sup> In this regard, the results of the study of Capa Aydin (2009) showed that emotion regulation strategies significantly predict test anxiety.<sup>[20]</sup> Pasandideh and Abolmaaly study also showed that mindfulness-based cognitive therapy increases comprehensive well-being.<sup>[17]</sup> A study by Beirami and Abdi also showed that mindfulness training significantly reduces test anxiety.<sup>[10]</sup> The study of Haghghat *et al.* showed that increasing positive cognitive emotion regulation strategies could reduce anxiety.<sup>[21]</sup>

Examination anxiety at the university level can interfere with the achievement of educational goals and on the other hand, endanger the mental health and ability of students. Medical students are a group that plays an important role in providing care, treatment, and physical and psychological support to patients. Therefore, the health of these students must be considered from now

on. Considering the importance of the comprehensive midwifery examination and that the comprehensive examination is one of the main concerns of midwifery students during their studies, the researcher decided to conduct a study to compare the effect of two educational methods on mindfulness and cognitive strategies of emotion on psychological well-being and anxiety of eighth-semester midwifery students before the final clinical trial.

## Materials and Methods

### Study design and setting

The present study is a quasi-experimental study of three groups and two-stage that was performed on eight-semester midwifery students of the School of Nursing and Midwifery of Isfahan University of Medical Sciences in 2020–2021.

### Study participants and sampling

This study was performed by available sampling method. The sample size was calculated ten people in each group. Inclusion criteria were having written consent to participate in the study, being in the eighth semester of midwifery, do not take drugs that affect the psyche, lack of experience of an unfortunate, anxious or stressful accident during the last 6 months, and no medical disease. Exclusion criteria were nonparticipation in more than 50% of training programs and unwillingness to continue participating in the study.

### Data collection tool and technique

Data collection tool was a questionnaire which was demographic questionnaire, Test Anxiety Questionnaire, and psychological well-being questionnaire.

The Friedman Test Anxiety Questionnaire has 23 items that are scored from 0 (strongly disagree) to 3 (strongly agree).<sup>[22]</sup> In the study of Baezzat *et al.* (2012), its validity and reliability have been confirmed.<sup>[22]</sup> In the present study, a retest-test was used to determine the reliability, which was confirmed with an alpha of 0.89.

The Psychological Well-Being Scale questionnaire includes 18 questions that are graded on a Likert scale with six grades from 1 (strongly disagree) to 6 (strongly agree) and six components, which are self-acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life, and personal growth. According to the study of Khanjani *et al.*, this questionnaire is valid and reliable.<sup>[23]</sup> In the present study, a retest-test was used to determine the reliability, which was confirmed with an alpha of 0.82.

After approval of the design by the Research and Approval Center in the University Ethics Committee (IR.MUI.RESEARCH.REC.1398.823) and registering the design in the Iranian Clinical Trial Center (IRCT20160224026756N7), the researcher started sampling. First, we made telephone calls to all eighth-semester midwifery students and encouraged them to participate in the research by attending the students' internship. Students interested in participating in the research were then asked to inform the researcher of their participation in the research. The researcher randomly divided the people into three groups. Then, a WhatsApp group was formed for each of the studied groups. First, the objectives of the research and the method of work were explained to the participants, and then, the forms of informed satisfaction, test anxiety, and psychological well-being were provided to the participants to complete through Porsline software. Participants were then trained based on the intervention group. The training program was eight sessions for each group (two sessions per week, each session for 2 hours). The sessions were conducted by a person with a doctorate in psychology. No training program was held for the control group. One week after the last session in all three groups, psychological well-being and retest anxiety questionnaires were completed with Porsline software. The educational content of the sessions is listed in Table 1. Finally, the collected data were coded and entered into SPSS version 22 (IBM, SPSS Inc., Chicago, Illinois, USA) software and analyzed by descriptive and analytical statistical tests of ANOVA variance along with least significant difference *post hoc* test.

### Ethical consideration

This study was conducted after obtaining permission from the Ethics Committee of Isfahan University of Medical Sciences with the code IR.MUI.RESEARCH.REC.1398.823. This study was also registered in the Iranian Clinical Trial Registration Center with the

code IRCT20160224026756N7. Written consent was obtained from all participants in the study. Participants were assured that their information would be kept confidential.

### Results

Data analysis was performed on 30 undergraduate midwifery students in three groups. Most of the participants in all three groups were single (seven people [70%] in the control group, eight people [80%] in the emotion regulation training group, and seven people [70%] in the mindfulness training group).

The mean scores of test anxiety and psychological well-being and their dimensions before and after the intervention are listed in Table 2. The results showed that there was a statistically significant difference between the three groups in terms of components of test anxiety and psychological well-being. Furthermore, emotion regulation training and mindfulness-based training reduced test anxiety and increased students' psychological well-being before the comprehensive test ( $P = 0.001$ ) [Table 2].

### Discussion

According to the results of this study, education can reduce test anxiety scores and increase students' psychological well-being scores. In this regard, the results of the study of Beirami *et al.* (2018) showed that mindfulness-based education significantly reduced test anxiety.<sup>[24]</sup> Furthermore, the study of Manavipour and Darabi (2018) showed that mindfulness-based education significantly reduced test anxiety.<sup>[25]</sup> In addition, the results of the study of Arab Ghaeni *et al.* showed that the mindfulness training method was significantly effective in increasing courage and reducing impulses.<sup>[26]</sup> Furthermore, the study of Ghadampour *et al.* (2020) showed that mindfulness based on cognitive therapy increases psychological well-being and reduces students' academic stress.<sup>[27]</sup> The results of Aghababaei and Taghavi study showed that mindfulness-based cognitive therapy training has a significant effect on mothers' psychological well-being. All studies were in line with the results of the present study.<sup>[28]</sup>

Furthermore, the results of the present study showed that emotion regulation training reduces anxiety scores and increases students' psychological well-being scores before the comprehensive examination. In this regard, the results of Rahmani and Hashemniyan's study showed that cognitive emotion regulation program has an effective role on the symptoms of depression and especially anxiety.<sup>[29]</sup> Furthermore, the

**Table 1: Content of emotion regulation training sessions and mindfulness training**

Meetings	Educational content of the sessions
1	Familiarity and introduction, review of primary and secondary emotions/automatic guidance
2	Naming emotions/dealing with obstacles
3	Description and function of emotions/presence of mind on breathing
4	Reduce vulnerability to negative emotions/stay in the present
5	Learn to increase positive experiences and emotions/focus on thoughts, emotions and mental images
6	Get rid of annoying emotions/thoughts, not facts
7	An overview of emotion regulation/How can I best take care of myself?
8	An overview of emotion regulation/learning versus negative mood

**Table 2: Evaluation and comparison of mean and standard deviation of test anxiety scores and psychological well-being of study participants in three groups before and after the intervention**

Variable	Studied groups			P- Intergroup
	Emotion regulation training group	Mindfulness training group	Control group	
<b>Test anxiety</b>				
<b>Social humiliation</b>				
Before intervention	16.50±5.33	15.47±5.55	16.63±4.98	0.001
After intervention	13.30±4.21	12.72±5.02	16.42±4.52	
P intergroup	0.001	0.001	0.345	
<b>Cognitive error</b>				
Before intervention	18.63±4.30	17.52±4.42	18.92±3.99	0.001
After intervention	15.43±4.01	14.33±4.12	17.92±4.02	
P intergroup	0.001	0.001	0.412	
<b>Tension</b>				
Before intervention	12.34±3.45	12.77±3.52	11.42±3.72	0.001
After intervention	10.32±3.51	10.03±3.12	11.32±3.45	
P intergroup	0.001	0.001	0.298	
<b>Overall test anxiety score</b>				
Before intervention	47.47±13.08	45.76±13.49	46.97±12.69	0.001
After intervention	39.05±11.73	37.08±12.26	45.66±11.99	
P intergroup	0.001	0.001	0.531	
<b>Psychological well-being</b>				
<b>Objective life</b>				
Before intervention	12.52±2.33	11.35±2.44	12.97±2.45	0.001
After intervention	15.98±2.45	15.41±2.74	12.35±2.60	
P intergroup	0.001	0.001	0.742	
<b>A positive relationship with others</b>				
Before intervention	13.42±2.73	12.72±2.35	13.45±2.21	0.001
After intervention	15.42±2.35	14.25±2.46	13.85±2.21	
P intergroup	0.001	0.001	0.301	
<b>Personal growth</b>				
Before intervention	13.88±2.55	12.98±2.32	13.92±2.30	0.001
After intervention	15.55±2.31	15.01±2.03	13.41±2.85	
P intergroup	0.001	0.001	0.364	
<b>Your acceptance</b>				
Before intervention	13.13±2.58	13.45±2.98	13.72±2.02	0.001
After intervention	15.12±2.74	16.77±2.35	13.45±2.12	
P intergroup	0.001	0.001	0.751	
<b>Independence</b>				
Before intervention	11.47±2.52	11.12±2.74	11.53±2.72	0.001
After intervention	14.52±2.31	15.23±2.45	11.32±2.75	
P intergroup	0.001	0.001	0.632	
<b>Mastery of the environment</b>				
Before intervention	13.31±2.64	12.92±2.73	13.41±2.49	0.001
After intervention	16.74±2.03	15.33±2.45	13.14±2.54	
P intergroup	0.001	0.001	0.358	
<b>Overall psychological well-being score</b>				
Before intervention	77.73±15.35	74.54±15.56	79.00±14.19	0.001
After intervention	93.33±14.19	90.00±14.48	77.52±15.07	
P Intergroup	0.001	0.001	0.154	

results of the study of Alidoosti *et al.* (2020) showed that emotion regulation training is a good way to improve emotional regulation and reduce anxiety and depression.<sup>[30]</sup> In addition, the results of the study of Beyrami *et al.* (2015) showed that therapeutic methods of emotion regulation training and mindfulness-based cognitive therapy have a positive

effect on anxiety, stress, and depression.<sup>[31]</sup> The results of a study by Ashkani and Heydari showed that emotional regulation treatment program has an effect on psychological well-being and attributional styles.<sup>[32]</sup> The study of Moradikia *et al.* showed that emotion regulation training is effective in promoting mothers' psychological well-being.<sup>[33]</sup>

To justify this finding, it can be pointed out that emotion regulation and especially positive strategy of cognitive reassessment of emotions reduces negative emotions and increases positive emotions and restless behavior.

### Limitations

Since the whole country was involved in a corona pandemic at the time of the study, sampling of this study was performed on two groups of undergraduate midwifery students. Anxiety about getting the disease while in the hospital could also add to the pretest anxiety. These training programs were held virtually. It is recommended that this study be performed in a postcoronary condition on a group of midwifery students in person.

### Conclusion

The results of the present study showed that mindfulness training and cognitive emotion regulation training could reduce anxiety scores and increase psychological well-being scores in midwifery students before the comprehensive examination. For this purpose, it is recommended to consider educational programs to promote the mental health of this group.

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### Conflicts of interest

There are no conflicts of interest.

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