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*Research Article*

# Effects of an On-Campus Meditation Course on Depression, Anxiety, Stress, and Sleep Quality among South Korean Paramedic Students

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*Background*. Paramedic students frequently face various stressful and challenging situations as they work in emergency medical settings. Currently, research studies on utilizing meditation courses as a part of the curriculum to improve the mental health of paramedic students in Korea are lacking. *Methods*. For this quasiexperimental study, a nonequivalent group pretest and post-test research design was used. The study sample comprised 55 paramedic students from two similar-sized universities in different locations: 27 in the experimental group and 28 in the control group. The experimental group participated in an eight-week meditation course, while the control group did not receive any interventions during the same time period. *Results*. The results indicated that compared with the control group, the experimental group had significantly decreased anxiety ($p = 0.047$) and stress levels ($p = 0.044$) and improved sleep quality ($p = 0.041$). The change in depression levels did not significantly differ between the groups ($p = 0.419$). *Conclusions*. The inclusion of a meditation course within college curriculums for paramedic students is feasible and may benefit students in terms of stress, anxiety, and sleep quality.

## 1. Introduction

College students face various stressful situations and experience various mental health problems as they transit from adolescence to adulthood [1]. Paramedic students face more stress than most other students as they prepare to become the emergency medical workers of the future. Such additional stress is associated with acquiring professional medical knowledge, adapting to different environments (academic, clinical, and emergency), and being exposed to traumatic events [2, 3].

A study in Australia indicated that the prevalence of post-traumatic stress disorder (PTSD) among paramedic students was 5% [4], and 16% of South African paramedic students reportedly experienced PTSD, whereas the prevalence of PTSD is 0.6% in the general South African population [5]. However, few such studies have been conducted in Korea [6], and paramedics reportedly receive little preparation for the mental health challenges of their desired profession [7].

Nevertheless, many Korean college students are reportedly reluctant to treat their mental health problems

via psychiatric medication, preferring alternative treatments, and self-management [8, 9]. Moreover, a multimodal approach, combining pharmacotherapy with self-management methods, is reportedly more effective than monotherapies in treating patients with mental disorders [10, 11]. These results highlight the urgent need to develop an easily accessible self-management program to improve students' mental health.

Meditation is a safe mind and body practice that promotes physical and mental health and is becoming more widespread [12]. It is considered a type of self-counseling and self-psychotherapy that activates self-healing mechanisms through introspection [13] and is an effective therapeutic strategy for students experiencing mental health, behavioral, and learning difficulties [14].

True Self meditation is a type of meditation in which restoration of a positive mindset and elimination of a negative mindset are promoted via reflection on one's life [15, 16]. This meditation method focuses on mind cleansing, which primarily employs self-reflective activities to examine one's past experiences and self-centered perspectives. It reportedly decreases depression, anxiety, and aggression; improves psychological wellbeing; decreases physiological stress indicators such as cortisol levels; reduces smartphone addiction; and improves self-reflection, happiness, and concentration [17–19]. When this meditation was provided to college paramedic students, significant reductions in stress levels and blood pressure were observed, while their ability to forgive and their self-esteem improved [6, 20]. The possible strengths and implications of the study relate to curricular feasibility of the course in college setting, as well as its potential effectiveness in promoting students' mental health.

To date, very few studies have been conducted on the effects of meditation courses as a part of paramedic curriculum. Therefore, we performed this quasiexperimental study with the aim to investigate its specific effects on depression, anxiety, stress, and sleep quality.

## 2. Materials and Methods

### 2.1. Sample Size.
In a previous meta-analysis and randomized controlled trial on psychological interventions used to improve mental health, the effect sizes were 0.42–0.55 [21, 22]. In this study, we set the expected effect size to 0.50. We calculated a required sample size of 52 participants by using G*Power 3.1.9.2 software with the following parameters for analysis of covariance (ANCOVA): level of significance $(\alpha) = 0.05$, statistical power $(1 - \beta) = 0.80$, and effect size $(f) = 0.40$ [23]. Considering an approximate dropout rate of 15%, 30 participants were recruited for each group, with a total of 60 participants, via convenience sampling.

### 2.2. Participants.
The paramedic students in this study were recruited from two similar-sized universities in different provinces of South Korea. To avoid possible treatment diffusion, the experimental and control groups were recruited from different locations [24]. Given that the professor who developed and conducted the meditation course was employed at K University, third year paramedic students who volunteered from this university were assigned into the experimental group. Third year paramedic students from the geographically distant G University were recruited for the control group.

We excluded students previously diagnosed with a psychiatric disorder or those who previously underwent meditation training from participation. Three participants dropped out of the experimental group (one student did not complete the pretest questionnaire, and two failed to complete the post-test questionnaire). Two students failed to complete the post-test questionnaire in the control group and were excluded from the analyses. Consequently, 55 college students were included in the analyses, with 27 in the experimental group and 28 in the control group.

### 2.3. Ethical Considerations and Data Collection.
This study was conducted following the approval of the Institutional Review Board of the Korea National University of Transportation. Participants were recruited using in-school bulletin boards and the internet from February 1 to August 23, 2019. The researchers explained the study's purpose, data collection methods, the right to participate or withdraw, and confidentiality to the students who voluntarily applied for the study. All recruited students provided written consent for participation in the study.

The experimental group attended the meditation class three times a week for eight weeks, with each class lasting 50 minutes, from September 23 to November 15, 2019. During the same period, the control group attended only their regular classes. A university professor, certified as a meditation instructor, provided instruction for the course. The pretest data were collected one week before the meditation course, and the post-test data were collected one week after the course was completed.

### 2.4. Intervention.
The True Self meditation method consists of seven progressive levels and is focused on discarding attachments to return to one's original true mind. A negative mindset and false perceptions can be eliminated and cleansed through the mind subtraction method, which can expand one's universal consciousness and reveal one's True Self (a positive mindset) [25, 26]. Therefore, this meditation has been called "True Self meditation" or "Mind Subtraction meditation" [11]. Other researchers have utilized this meditation method and reported that it was easily learned and practiced among younger populations, such as school-aged children [27], college students [20], and young adults [28].

For the meditation course in this study, we used the methods from only the first of the seven progressive levels (Table 1). The students were given a short lecture, at the start of each class, on the principles of the human mind and the fundamentals of meditation, followed by the meditation practice for 20–25 minutes, primarily focusing on self-reflection and eliminating one's negative mindset. During each meditation session, the students were instructed to recall and discard negative emotions and thoughts attached to memories of everyday life.

TABLE 1: Main contents of the True Self meditation program.

| Week | Topic | Session no. | Key course materials |
|---|---|---|---|
| 1 | Orientation knowing the mindset | 1, 2, 3 | (i) Understanding the meditation program<br>(ii) Understanding true and false mindsets<br>(iii) Learning and practicing methods for discarding the false mindset |
| 2 | Discarding the false mindset related to family | 4, 5, 6 | (i) Knowing the true and false mindsets<br>(ii) Reflecting on memories related to one's family and discarding the false mindset<br>(iii) Observing one's feelings after discarding the false mindset and sharing these observations |
| 3 | Discarding the false mindset related to school | 7, 8, 9 | (i) Knowing the true and false mindsets<br>(ii) Reflecting on memories related to kindergarten, elementary school, middle school, high school, and university, and then discarding the false mindset<br>(iii) Observing one's feelings after discarding the false mindset and sharing these observations |
| 4 | Discarding difficult things and one's hostile mindset | 10, 11, 12 | (i) Knowing the true and false mindsets<br>(ii) Reflecting on memories related to one's experiences of inferiority and hostility and discarding the false mindset<br>(iii) Observing one's feelings after discarding the false mindset and sharing these observations |
| 5 | Discarding one's anxious and worrisome mindset | 13, 14, 15 | (i) Knowing the true and false mindsets<br>(ii) Reflecting on memories related to one's experiences of anxiety and worries and discarding them<br>(iii) Observing one's feelings after discarding one's false mindset and sharing these observations |
| 6 | Discarding one's angry, annoyed, and stressed mindset | 16, 17, 18 | (i) Knowing the true and false mindsets<br>(ii) Reflecting on memories related to one's experiences of anger, annoyance, and stress and discarding them<br>(iii) Observing one's feelings after discarding one's false mindset and sharing these observations |
| 7 | Discarding one's frightened and fearful mindset | 19, 20, 21 | (i) Knowing the true and false mindsets<br>(ii) Reflecting on memories related to one's experiences of horror and fear and discarding them<br>(iii) Observing one's feelings after discarding one's false mindset and sharing these observations |
| 8 | Discarding all mindsets from one's birth to the present: a new beginning | 22, 23, 24 | (i) Discarding all the false mindsets from one's birth to the present<br>(ii) Resolutions for a new beginning<br>(iii) Sharing the resolutions and feelings regarding these resolutions |

### 2.5. Measurements

#### 2.5.1. The Center for Epidemiological Studies-Depression (K-CES-D) Scale.
The Korean version of the Center for Epidemiological Studies-Depression (CES-D) scale [29] was used to measure depression. The validity and reliability of the Korean version (the K-CES-D scale) have been demonstrated by Cho and Kim [30]. It comprises 20 items answered on a 4-point Likert scale, with a higher score signifying a higher level of depression. Cutoff scores were used to identify clinical depression, which are as follows: normal (0–15 points), probable depression (16–24 points), and definite depression (≥25 points) [31]. In terms of reliability, Cronbach's alpha for the K-CES-D scale was 0.90 [30]; in this study, Cronbach's alpha was 0.93.

#### 2.5.2. The Beck Anxiety Inventory (BAI).
The Korean version of the BAI, developed by Beck et al. [32] and adapted and validated by Kwon [33], was used to measure anxiety in this study. It entails 21 questions comprising cognitive, emotional, and physical dimensions answered on a 4-point Likert scale, and a higher score signifies a greater severity of anxiety symptoms. The intensity of anxiety was categorized as follows: minimal anxiety (0–7 points), mild anxiety (8–15 points), moderate anxiety (16–25 points), and severe anxiety (26–63 points). In terms of reliability, Cronbach's alpha for the BAI was 0.90 [33]; in this study, Cronbach's alpha was 0.94.

#### 2.5.3. The Stress Response Inventory (SRI).
The SRI, developed and validated by Koh et al. [34], was used to measure stress. It comprises 39 questions in the domains of tension, aggression, somatization, anger, depression, fatigue, and frustration, answered on a 5-point Likert scale. A higher score signifies a greater level of stress experienced by the individual. In terms of reliability, Cronbach's alpha for the SRI was 0.97 [34]; in this study, Cronbach's alpha was 0.98.

#### 2.5.4. The Leeds Sleep Evaluation Questionnaire (LSEQ).
The Korean version of the LSEQ, developed by Parrott and Hindmarch [35] and translated and validated by Kim et al. [36], was used to measure sleep quality. The Korean version of the modified LSEQ is used to measure the current sleep state compared to the usual sleep state. It is suitable for evaluating the effect of an intervention on sleep quality over a certain period. It comprises 10 items in four dimensions related to sleep, including getting of sleep, the perceived quality of sleep, the ease of awakening from sleep, and the integrity of behavior following wakefulness. The possible score ranges from 0 to 100. A higher score signifies better sleep quality. The LSEQ cutoff used in this study was 66; a score of 66 or lower indicated poor sleep quality. Cronbach's alpha for the LSEQ in its development was 0.92 [35]; Kim et al. [36] reported a value of 0.95 for the Korean version of the modified LSEQ, and Cronbach's alpha in this study was 0.91.

#### 2.5.5. Data Analysis.
The data were analyzed using IBM SPSS Statistics for Windows version 24.0 (IBM Corp., Armonk, NY, USA). We calculated descriptive statistics, including frequencies, percentages, means, and standard deviations, for participants' general characteristics and independent variables. Given that the data of independent variables were normally distributed, the independent $t$-test was used to compare the pretest and post-test mean scores for depression, anxiety, stress, and sleep quality between the groups. In addition, the $\chi^2$-test was used to compare the variables of sex and satisfaction with one's major between the two groups; and the $t$-test was used to compare ages between the two groups. Finally, the pretest values of each variable were treated as covariates to verify the effects of the meditation course using ANCOVA. The significance level was set at a $p$ value less than 0.05 for all statistical analyses.

## 3. Results

Table 2 shows the comparison of the participant characteristics. We observed no significant differences in the general characteristics between the experimental ($n = 27$) and control ($n = 28$) groups. The mean age of the experimental and control groups was 21.89 and 21.57 years, respectively; both groups contained more female than male students (59.3% and 67.9%, respectively), and the majority of students were either satisfied or very satisfied with their declared major (70.3% and 82.2%, respectively).

Table 3 shows the changes in depression, anxiety, stress, and sleep quality scores in the experimental and control group before and after the meditation course. Before the meditation course, the experimental group's depression score was not significantly higher ($33.59 \pm 9.94$) than the control group's score ($29.61 \pm 6.72$; $p = 0.086$). After the meditation course, the experimental group's depression score ($33.15 \pm 11.00$) still did not differ from the control group's score ($32.00 \pm 8.43$; $p = 0.655$). Using an ANCOVA to account for the pretest scores, we verified that the depression scores of the experimental ($31.68 \pm 1.50$) and control ($33.42 \pm 1.47$) groups did not differ ($p = 0.419$).

The experimental group's pretest anxiety score ($12.52 \pm 10.07$) did not differ from that of the control group ($9.61 \pm 5.24$; $p = 0.182$). After the meditation course, the experimental group still had a similar anxiety score ($11.11 \pm 9.25$) to that of the control group ($11.57 \pm 7.31$; $p = 0.838$). However, an ANCOVA, accounting for the pretest scores, revealed that the experimental group's post-test score ($9.89 \pm 1.00$) was lower ($p = 0.047$) than the control group's post-test score ($12.75 \pm 0.98$).

The experimental group's pretest stress score ($26.48 \pm 29.34$) did not differ from the control group's pretest stress score ($21.07 \pm 16.42$; $p = 0.400$). The experimental group had a similar post-test stress score ($20.78 \pm 27.00$) to that of the control group ($24.21 \pm 20.70$; $p = 0.598$). However, an ANCOVA, accounting for the pretest scores, revealed that the experimental group had a lower ($p = 0.044$) post-test stress score ($18.51 \pm 2.72$) than that of the control group ($26.40 \pm 2.67$).

TABLE 2: Comparison of the participant characteristics between groups ($n = 55$).

| | | Exp. ($n = 27$) $n$ (%) or M ± SD | Cont. ($n = 28$) $n$ (%) or M ± SD | $\chi^2/t$ | $p$ value |
|---|---|---|---|---|---|
| Age (years) | | 21.89 ± 1.31 | 21.57 ± 1.35 | −0.886 | 0.380[a] |
| Sex | Male | 11 (40.74) | 9 (32.14) | 0.439 | 0.508[b] |
| | Female | 16 (59.26) | 19 (67.86) | | |
| Satisfaction with one's major | Very satisfied | 8 (29.63) | 11 (39.29) | 1.200 | 0.548[b] |
| | Satisfied | 11 (40.7) | 12 (42.86) | | |
| | Medium | 8 (29.63) | 5 (17.86) | | |
| | Unsatisfied | 0 (0.00) | 0 (0.00) | | |

*Note*: M, mean; SD, standard deviation; Exp., experimental group; Cont., control group. [a]Independent $t$-test. [b]$\chi^2$-test.

TABLE 3: The effects of the meditation course on depression, anxiety, stress, and sleep quality ($n = 55$).

| | | Exp. ($n = 27$) | Cont. ($n = 28$) | $t/F$ | $p$ value |
|---|---|---|---|---|---|
| Depression | Pretest | 33.59 ± 9.94 | 29.61 ± 6.72 | −1.748 | 0.086[a] |
| | Post-test | 33.15 ± 11.00 | 32.00 ± 8.43 | −0.436 | 0.655[a] |
| | Adjusted mean | 31.68 ± 1.50 | 33.42 ± 1.47 | 0.663 | 0.419[b] |
| Anxiety | Pretest | 12.52 ± 10.07 | 9.61 ± 5.24 | −1.352 | 0.182[a] |
| | Post-test | 11.11 ± 9.25 | 11.57 ± 7.31 | 0.205 | 0.838[a] |
| | Adjusted mean | 9.89 ± 1.00 | 12.75 ± 0.98 | 4.123 | 0.047[b] |
| Stress | Pretest | 26.48 ± 29.34 | 21.07 ± 16.42 | −0.848 | 0.400[a] |
| | Post-test | 20.78 ± 27.00 | 24.21 ± 20.70 | 0.531 | 0.598[a] |
| | Adjusted mean | 18.51 ± 2.72 | 26.40 ± 2.67 | 4.252 | 0.044[b] |
| Sleep quality | Pretest | 57.33 ± 18.59 | 56.89 ± 15.56 | −0.095 | 0.924[a] |
| | Post-test | 56.32 ± 18.91 | 49.71 ± 18.35 | −1.314 | 0.195[a] |
| | Adjusted mean | 56.12 ± 2.12 | 49.91 ± 2.08 | 4.372 | 0.041[b] |

*Note*: M, mean; SD, standard deviation; SE, standard error; Exp., experimental group; Cont., control group. [a]Independent $t$-test. [b]Analysis of covariance with a covariate of the pretest mean score for each variable.

The experimental group's pretest sleep quality score (57.33 ± 18.59) was similar ($p = 0.924$) to the control group's pretest sleep quality score (56.89 ± 15.56). After the meditation course, the experimental group still had a similar ($p = 0.195$) sleep quality score (56.32 ± 18.91) to that of the control group (49.71 ± 18.35). However, an ANCOVA, accounting for the pretest scores, revealed that the experimental group had a higher ($p = 0.041$) post-test sleep quality score (56.12 ± 2.12) than the control group did (49.91 ± 2.08).

## 4. Discussion

*4.1. Effects of an on-Campus Meditation Course Using True Self Meditation.* In this study, we examined the effects of a college meditation course on paramedic students' levels of depression, anxiety, and stress, as well as their sleep quality. We also explored the utility of this course as an intervention for improving their mental health. We demonstrated that the meditation class significantly reduced the paramedic students' levels of anxiety and stress, while significantly improving their sleep quality; however, their levels of depression were unaffected.

According to a previous study on the effectiveness of a True Self meditation college course, paramedic students had lower levels of perceived stress and blood pressure and increased mindfulness after eight weeks of 50-minute meditation classes, three times a week [6, 37]. In another study, nursing students' levels of stress decreased after five

weeks of 50-minute meditation classes, once a week [38]. Their conclusions that this meditation program is effective in reducing anxiety and stress among college students are consistent with ours.

However, in terms of depression, our results were inconsistent with those of previous studies. Participation in an intensive True Self meditation program for six hours a day for one week reportedly decreased college students' levels of anxiety, stress, and depression [39]. In other studies, this meditation program effectively reduced depression in adults with depressive symptoms [28] who participated in an intensive program for a week and in breast cancer survivors [40] who participated in an eight-week program, twice a week. This discrepancy may mean that a decrease in depressive symptoms requires the consideration of more variables, as depression is a chronic condition occurring when certain psychological states are experienced over a long-term period [17]. In addition, the implemented intervention in this study might not have been sufficiently intense to decrease elevated pretest depression levels. The time spent in meditation was less than 30 minutes per class, while the remaining time was spent on lectures, questions and answers, and the sharing of meditation experiences. Thus, the deeper meditation in previous studies might have resulted in its effect on depression. Meditation effects have indeed been demonstrated to depend on the time spent meditating, and most meditation research has included 90 to 120 minutes of meditation per session [21, 40, 41].

The sleep quality results of this study were consistent with those of previous studies, which reported improved sleep quality following other psychological interventions [42–44]. In one study, the incidence of sleep disorders among breast cancer survivors decreased from 90.9% to 54.5% after participation in an eight-week True Self meditation program, two times per week [40, 45]. In the present study, the paramedic students in both the experimental and control groups had a mean sleep score below 66 points at baseline, indicating that their sleep quality was poor. After the intervention, the experimental group retained a sleep quality at a level similar to that at baseline, whereas the control group's sleep quality scores in the same period were significantly worse than the experimental group's sleep quality scores.

The poor sleep quality observed in this study could be related to rigorous academic demands, as the students in both groups underwent some of the most challenging weeks of their four college years over the study period. For example, they underwent disaster response training and were required to undertake 1.25 times their usual course load. Furthermore, the post-test was conducted one week before final exams. Overall, the intense academic burden, which negatively impacted both groups, might have led to the significant deterioration in the control group's sleep quality. In comparison, the post-test sleep quality scores of the experimental group were maintained at their pretest level, which indicates that the meditation course positively affected their sleep quality despite the intense academic burden.

*4.2. Psychological Healing Mechanism of True Self Meditation.* Woo, the founder of True Self meditation, argued that people create inner worlds by storing their life memories [15]. From birth, all things seen, heard, and experienced become stored images in their minds, and individuals reside inside these self-made worlds. People see these false, illusionary, inner-mind worlds as real because these images overlap with the real world [45]. According to Woo, every psychological problem, including depression, worry, and anxiety, takes root in these self-made worlds. Through meditation, individuals discard these self-constructed images and false selves, allowing them to live in the real world with true happiness [16].

The True Self meditation method employs self-reflection; one looks into one's inner mind and extracts and eliminates the false mindset that was stored like a picture [15, 16, 45]. These picture-like illusions appear as various versions of oneself, such as the depressed, anxious, and stressed self. Through the insightful perspectives gained during meditation, one disassociates oneself from these false selves that harbor negative emotions, realizing that one had been viewing the world through one's self-created, false psychological framework [28, 40]. True Self meditation is a form of active self-therapy that aims to eliminate the root of psychological issues by discarding these false images, which are the core causes of dysfunctional thoughts and products of cognitive distortions [25, 40].

Kim [11] reported that the True Self meditation contains psychoanalytic principles that restore maturity by fostering the inner child-who had been wandering in a self-created, false psychic "reality"-in the domain of consciousness. Meditating practitioners enlighten to the objective, true reality by realizing that their subjective experiences are false [11]. Kim [46] also suggested that True Self meditation has the potential as a treatment for PTSDs. The repeated reflection and cleansing process can lead to positive re-evaluation and post-traumatic growth through acceptance of traumatic events as personal growth experiences [46]. It shares characteristics with both concentration meditation and insight meditation. Jeong et al. argued that True Self meditation results in a decrease in ineffective response mechanisms, such as negative emotional expression and passive retreat, and an increase in effective response mechanisms, including positive appraisal and active response [47].

*4.3. Benefits of a College Meditation Course.* Fire officials are exposed to high levels of job stress, and 5.4% of them in Korea are reportedly at a high risk for suicide [48]. Nevertheless, preparations for the mental health of paramedic students, some of whom will become future fire officials, are insufficient. Many schools have utilized meditation to improve students' mental health and academic performance. In particular, the True Self meditation method has been officially certified as a school program for character development in South Korea by the Ministry of Education (approval no.: South Korean Department of Education-2018001) and is currently used in many middle and high schools and a few universities [49]. This meditation method reportedly decreases negative emotions and increases positive attributes in college students [20, 37, 39].

Even if college students have limited financial and temporal resources, meditation is easy to practice on their own once sufficiently taught [6, 37]. During the eight-week meditation class, participant compliance was high, with no dropouts apart from those who did not complete the questionnaire. Thus, this on-campus meditation course seems feasible, and participation therein might improve mental health self-management among paramedic college students.

Treatments for mental disorders are more effective with a multimodal approach, such as the combination of pharmacotherapy with psychological interventions, than with monotherapies [10, 11]. A meta-analysis of 23 studies on psychological interventions commonly used to improve mental health, including meditation, mindfulness-based stress reduction, and yoga, reported a moderate effect size (ranging from 0.42 to 0.46) for psychological symptoms [21]. The impact of other psychological interventions, such as cognitive-behavioral therapy and psychological counseling, depended on the professionals' expertise in achieving treatment outcomes [21, 50], whereas meditation has value without the involvement of a professional, once taught [13].

Meanwhile, the mental health of the paramedic students in this study was considerably worse than that of non-paramedic students in other previous studies [51, 52]. The

mean pretest CES-D and BAI scores indicated that students in both groups experienced depression and mild anxiety, respectively. Our results demonstrated the limitations of a one-size-fits-all meditation curriculum in ameliorating students' depression. Therefore, we propose that an individualized, in-depth meditation program be used to help students with high levels of depression or anxiety.

In addition, definite differences in mental health levels and coping methods have been observed between college students majoring in health-related fields and those with other majors [53]. Nursing students as well as paramedic students reportedly have poorer sleep quality and a higher prevalence of depression than other students do [54]. Nursing students also experience high stress levels owing to, among others, the rigorous and competitive academic environment, clinical training for novel situations, exposure to crises and traumatic events, and interpersonal relationships with patients and medical staff [55]. Therefore, we suggest that an effective and accessible on-campus meditation course be offered to improve the mental health of college students, especially students with health-related majors such as paramedic and nursing students.

## 5. Limitations and Recommendations

This study has some limitations. First, we could not control for factors related to academic schedules and other academic burdens that could have affected the students' mental health and sleep quality. Second, self-report questionnaires were used to measure the pretest and post-test outcome variables; thus, measurement errors due to self-reporting bias were possible. Third, the small sample size and the convenience sampling method limit the generalizability of the results of this study. Further validation studies are warranted to address the limitations of this study and replicate our results.

In future studies, researchers should consider controlling for variables that affect students' mental state and sleep quality, such as academic burdens and examination schedules, and utilizing additional physiological measures to provide objective measurements of dependent variables. In addition, a larger sample size, as well as sampling college students with different academic majors and repeating randomized control trials are recommended. Finally, a study in which the effects of this meditation method are compared to those of yoga, other meditation methods, or another psychological intervention will be of value.

## 6. Conclusions

This quasiexperimental research study examined the effects of an on-campus True Self meditation course for paramedic students. This study found that the inclusion of a meditation course within college paramedic curriculums is feasible, and its utilization may benefit students in terms of their mental health and sleep quality.

*6.1. Implication for Practice.* In this study, the True Self meditation college course improved students' mental health. Developing and offering this on-campus meditation course may be a suitable strategy to enhance students' psychological well-being, especially for students with health-related majors, such as paramedic or nursing students. Colleges need to consider the benefits of such programs and encourage students to incorporate meditation into their campus lives.

## Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

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