

Differences Between Spiritual Mindfulness and Mindfulness Caring in Reducing Academic Pathological Stress in Nursing Students

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ABSTRACT

Introduction: Academic pathological stress currently often occurs in students. Mindfulness-based therapy has proven effective in reducing pathological stress among nursing students. **Methods:** However, there are several differences in the methods of administering mindfulness therapy, so further research is needed to find out these differences. This research aims to determine the difference in the influence of spiritual mindfulness and caring mindfulness in reducing pathological stress in nursing students. This study employed a pre-posttest quasi-experimental design with a control group. The sample was taken using a purposive sampling technique with the inclusion criteria of final-level Nursing undergraduate students who experienced academic pathological stress and were willing respondents (n=36). The sample was then randomly divided into 2 groups, namely spiritual mindfulness (n=18) and mindfulness caring (n=18). Data on pathological stress were collected using the questions in the DASS-42 questionnaire, which are 14 questions about pathological stress. Data analysis used paired t-tests and unpaired t-tests. **Results:** This research found that both interventions can reduce pathological stress in nursing students. However, there was a difference between spiritual mindfulness intervention (Mean ± SD = 11.39 ± 5.81) and mindfulness caring (Mean ± SD = 16.39 ± 3.55) with a mean difference of 6.38 and a p-value <0.001. **Conclusion:** In conclusion, although the two interventions provided effective results in reducing academic pathological stress in respondents, it was found that spiritual mindfulness was more able to reduce aggressive stress responses in nursing students. Further research is recommended to reevaluate the sample group, incorporating individuals with diverse mental health issues for re-testing.

Keywords: *Spiritual Mindfulness; Mindfulness Caring; Academic Pathological Stress; Nursing Students*

INTRODUCTION

Mental health is a condition where individuals are able to manage negative emotions so that they are free from emotional discomfort. This condition is proven by stability in managing emotions and satisfying interpersonal relationships (Santoso *et al.*, 2022). Mental health problems in the world will potentially continue to increase, and reports indicate that emotional mental health problems in the world are increasing. This problem often occurs in productive age over 15 years, with stress as the most common symptom (Ferrari, 2022). Director of Prevention and Control of Mental Health and Drug Problems, Dr. Celestinus Eigya Munthe, explained that in Indonesia, mental health problems, one of which is mental emotional disorders, have increased. Currently, Indonesia has a prevalence of people with mental disorders of around 1 in 5 of the population, meaning that around 20% of the population in Indonesia has the potential for mental disorders

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(Widyawati, 2021). Pathological stress is a negative emotional response to stressors that brings out pain, depressed feelings, and psychological threats; this response is more dominant in academic or work environments (Yaribeygi *et al.*, 2017). Pathological stress is a significant contributor to emotional and physical mental illness in people of all ages (Dwidiyanti *et al.*, 2022). Pathological stress will cause anxiety, and uncontrolled anxiety can contribute to depression and suicide (Yüksel & Bahadır Yılmaz, 2020).

Academic pathological stress is a form of emotional mental disorder that students often experience and mostly occurs due to academic burdens (Kachaturoff *et al.*, 2019; Zhang *et al.*, 2018). A previous study involving 60 medical students in Islamabad, Pakistan, reported that 50% of the respondents experienced academic pathological stress; of this number, 18.18% had mild stress, 24.24% had moderate stress, and 7.58% had severe stress (Rizvi *et al.*, 2015). Another study on baccalaureate nursing students in Hong Kong showed that 51.1% of 661 respondents experienced mild to severe academic pathological stress (Cheung *et al.*, 2016). This finding is congruent with a study by Wardi, who revealed that academic demands were the main stressors that caused pathological stress among nursing students (Wardi, 2016). A preliminary study involving 10 senior students at STIKES Banyuwangi on June 26, 2019, revealed that eight students experienced academic pathological stress.

The factors influencing pathological stress among students include internal environmental factors (physical condition, behavior, interest, emotional intelligence, intellectual intelligence, and spiritual intelligence) and external environmental factors (academic assignment, clinical practice, and social environment both in the family and campus). External environment factors will become pressure if the students cannot manage them well, thus increasing mental stress. These two factors affect a series of psychological responses that require adaptation and cause pressures in students, resulting in pathological stress in facing academic processes (Lavoie-Tremblay *et al.*, 2021). The pathological stress that students experience during academic processes causes them to be absent from classes and delay the thesis work; the students sometimes prefer forgetting academic tasks to completing them, have less focus in performing their clinical practices, avoid meeting supervisors, complain about their difficulties on social media, and ultimately experience delayed graduation (Borujeni *et al.*, 2021; Lavoie-Tremblay *et al.*, 2021). In their study entitled "Sources of stress and coping strategies among undergraduate nursing students across all years," Lavoie-Tremblay *et al.* suggest that further research is needed to determine the effectiveness of targeted stress reduction programs for nursing students (Lavoie-Tremblay *et al.*, 2021).

Mindfulness-based caring (MC) is an exercise that aims to help individuals realize their present conditions so that they can make goals and focus on solving problems (Dwidiyanti *et al.*, 2018). Mindfulness effectively reduces stress levels (Chase-Cantarini & Christiaens, 2019; Munif *et al.*, 2020). Similarly, Song and Lindquist showed that mindfulness effectively reduces stress and increases the awareness of nursing students undergoing clinical practice in Korea (Song & Lindquist, 2015). Mindfulness care is a coping strategy focusing on cognitive and physical aspects to reduce adverse physical reactions to stress by managing stress using mind processing techniques to develop acceptance and self-relaxation (Munif, Poeranto, & Yulian Wiji Utami, 2019). There are three strategies for coping with stress, one of which is physical-focused coping, which describes an individual's effort to change stress reactions by managing the stress using self-relaxing techniques to reduce stress and be more relaxed. For an analogy, students who are unable to manage stressors, since their ability to manage stressors (self-care agency) cannot meet their demands for managing stressors (self-care demands), may experience stress (self-care deficit) (Dwidiyanti *et al.*, 2019). Thus, nursing agents are needed to meet the demands of students in managing stressors, and in this case, mindful caring is a nursing agent. Mindfulness care aims to help individuals feel relaxed, be aware of the causes of stress they encounter, find solutions to overcome problems, and manage stress to reduce their stress levels (Dwidiyanti *et al.*, 2018). In their book entitled *Mindful Caring for Stress*, Dwidiyanti, Pamungkas, and Ningsih stated that mindfulness care is an exercise that individuals perform with awareness and a sense of relaxation, love and respect themselves, and understand and know the causes of stress they experience. The individuals also accept the condition by increasing their self-efficacy and setting independent healthy targets so that they can solve their problems (Dwidiyanti *et al.*, 2018). Thus, mindfulness care helps individuals be more relaxed, aware of the causes of stress, and find solutions to overcome problems, as well as manage stress to reduce its level. Research shows that mindfulness care effectively reduces academic stress among nursing students who are completing

their final project (Munif, Poeranto, & Yulian Wiji Utami, 2019).

Spiritual mindfulness (SM) is an emotion-regulation-focused coping strategy used to reduce various adverse emotional reactions to the body's stressors. During the therapy, participants will do introspection, self-evaluation, prayers, and surrender to God; with such activities, they can express their feelings to feel calmer and more comfortable (Dwidiyanti *et al.*, 2019; Munif, Poeranto, & Utami, 2019). The researchers in this study had previously researched the effects of spiritual mindfulness and mindfulness caring interventions among nursing students and found that the two interventions had a significant effect on reducing academic pathological stress (Munif, Poeranto, & Utami, 2019). The spiritual approach plays a vital role in expressing feelings and comforting patients. Accepting an illness will lead individuals to get closer to God and accept the illness as a temptation from God. With this combination, spiritual mindfulness not only focuses on developing self-efficacy and self-care through cognitive awareness but also promotes the urge in students to develop their self-efficacy and self-care appropriately (Jin, 2023). As a result, students will be more aware of accepting the stressors they experience and will be calmer and more comfortable (Munif, Poeranto, & Utami, 2019). In his psychoanalytic theory, Sigmund Freud stated that the superego always plays a role in promoting the ideal of ego or moralistic values (Sibi & Sibi, 2020). Therefore, belief, independence, and awareness from the deepest heart will encourage individuals to do good deeds.

There is extensive evidence related to the effects of mindfulness on reducing stress; therefore, further research is needed to determine differences in the effects of this intervention (Proeschold-Bell *et al.*, 2023). In their literature review, Bamber and Schneider (Bamber & Schneider, 2016) reported that 33 out of 40 mindfulness-based intervention studies were successful in reducing student stress, which lends support to this viewpoint. However, not many studies are being conducted using spiritual approaches like spiritual mindfulness. Therefore, the researchers are interested in conducting a further investigation to determine the different effects of spiritual mindfulness and mindfulness care on decreasing pathological stress among nursing students. The purpose of the study is to know the different effects of spiritual mindfulness and mindfulness care on reducing academic pathological stress among nursing students.

METHODOLOGY

Methods

The study was conducted at the Institute of Health Sciences in Banyuwangi, Indonesia, in East Java. Informed consent was given before the study began. All respondents have to give consent before the study begins.

Study Design

The present study used a pretest and posttest quasi-experimental design with a control group by measuring the states before and after the intervention in the spiritual mindfulness group and the mindfulness caring group.

Population, Samples and Sampling

This study was conducted for five days in December 2019 at STIKES Banyuwangi, East Java, Indonesia. The sample size for this study was determined using the minimum sample formula, which is a special formula for determining the number of samples in experimental research, namely the replication method with a minimum sample (Federer, 1977). The formula is as follows:

$$(t - 1)(n - 1) \geq$$

$$(2 - 1)(n - 1) \geq 15$$

$$1(n - 1) \geq 15$$

$$n - 1 \geq 15$$

$$n \geq 15 + 1 = 16 \text{ respondent}$$

Information:

t: The number of groups in the study

n: Replication (number of samples)

The samples were determined using a minimum sampling formula ($n=16$). To anticipate dropouts, the researchers added 10% of the samples in each group ($n=18$). The population was all senior students of the undergraduate nursing program, randomly selected for the stress screening. The Depression Anxiety Stress Scale (DASS)-42 was used to screen the potential respondents to determine whether they experienced stress. To avoid confounding factors, inclusion criteria used were, the respondent is currently stressed (based on the DASS-42 result), doesn't have any other history of mental illness, and is physically healthy. A total of 36 students met the inclusion criteria and were purposefully selected to participate in the study. These students were randomly divided into two groups, namely the spiritual mindfulness group ($n=18$) and the mindfulness caring group ($n=18$).

The Depression Anxiety Stress Scale (DASS)-42 was used to measure the academic pathological stress that students experienced. To focus on pathological stress, the researchers took the stress scale question items from the DASS-42, and 14 question items were obtained, including items 1, 3, 6, 8, 11, 12, 14, 18, 22, 27, 29, 32, 33, and 35. Furthermore, the researchers modified some of the questions to be more congruent with the aim and objective of the study and conducted validity and reliability tests on the questionnaire. The validity of the questionnaire was tested on 30 respondents who met the study criteria but were not included in the research. The instrument's validity was examined using Pearson's product-moment (r) by comparing the score of each question item with the total score of all questions and determining the significance value of the relationship of each question; the calculated r -value is compared with the r -table value. The question is considered valid if the r -count is higher than the r -table with a significance value of 5% (the r -table is 0.444). Pearson's test showed an r -value of >0.444 , indicating that all items were valid. Next, the reliability test of the questionnaire was examined using Cronbach's alpha, provided that if the alpha value is closer to 1, the reliability value of the research instrument is higher. In this study, the instrument is considered reliable if the r -alpha is higher than the r -table. The Cronbach's alpha test showed an r -value of 0.82 ($r > 0.444$), indicating that the questionnaire was reliable.

Procedure

The respondents in the intervention group received spiritual mindfulness therapy. This intervention is an exercise of full awareness to realize full-heartedly the bad behavior that the body, mind, and feelings experience and try to improve it through independent health targets that are carried out following the guidelines. Spiritual mindfulness is developed based on a combination of mindfulness care and spiritual therapy. From this combination, the researchers tried to create a standard operating procedure (SOP) for spiritual mindfulness that the authors had previously developed. In this SOP, there are six steps for practicing spiritual mindfulness, namely intention, self-evaluation, body scan, repentance, prayer, surrender, and relaxation (Dwidiyanti *et al.*, 2019). The control group was given the mindfulness-care intervention. Mindfulness care is an awareness-building exercise to understand cognitive problems faced with full acceptance, which is carried out with a high level of self-efficacy and self-care to achieve the desired goal (Dwidiyanti *et al.*, 2018). Mindfulness and caring are formed through the concept of mindfulness, which is combined with the self-efficacy theory from Bandura and the self-care theory from Orem. The researchers used this combination to create a standard operating procedure (SOP) about mindfulness care that has been published previously. The SOP describes four steps of mindfulness-based caring therapy, including calming down, loving oneself, being aware of the problems faced, and being able to make independent targets.

Table 1: Steps of Intervention Spiritual Mindfulness and Mindfulness Caring

Six steps for Practicing Spiritual Mindfulness		
1	Namely intention	- Bring out the will from the heart to cleanse the soul and increase the <i>taqwa</i> (forbearance, fear and abstinence) to God with full of attention and consciousness without any force by other people. All of these are only for God
2	Self-evaluation	- Contemplate ourselves for a while, introspect for any mistakes committed, including the acts, saying, and minds. - Bring out the faith with full attention and consciousness that the mistakes that were written will impact the suffering in life.

3	Body scan	- The responses in the body must be felt for the mistakes that committed with full attention and realization.
4	Repentance	- Asking for forgiveness from God for mistakes that is made by saying <i>istighfar</i> (seek forgiveness) as much possible. - The individual should bring forth their regrets and strong determination to avoid repeating the same mistakes, doing so with full consciousness. - Bring out faith with full consciousness that God will forgive any mistakes but only if repentance is shown to God
5	Prayer	- Now please pray and ask for help from God. - Ask God to heal the body response felt and written.
6	Relaxation	One should calm oneself with complete attention and consciousness to perceive the assistance from God that has already been bestowed: - When calmness is felt and one is comfortable, it is needed to hold into it and protect the feeling. - When sadness is felt, the individual must cry with calmness, in a comfortable way. - If there is a feeling of nausea, then throw it up. - In instances of difficulty in breathing or chestpain, the person should cough as if attempting to relieve the discomfort. - If an individual experiences more than one symptom, such as dizziness, tremors, a sensation of heaviness on the back, coughing, vomiting, sweating, or others, they should remain calm and seek divine intervention for healing.
Four Steps of Mindfulness Caring		
1	Including calming down oneself	- Calmness can be achieved by attempting to focus and releasing the burdens in one's mind. The person is advised to concentrate on their breath to attain a sense of relaxation. - The individual is instructed to visualize themselves in their mind, sitting with an upright posture. They are asked to envision observing themselves from an external perspective, maintaining both their body and mind in this particular situation.
2	Loving one-self	- Begin to construct cognitive mind to feel that one is capable of loving, respect, and give value oneself.
3	Being aware of the faced problems	- Construct awareness to realizing problems felt currently with full acceptance without any rejection.
4	Being able to make independent targets.	- The person can make a target to finish the problems with thinking and building self - motivation to do positive activity. - Take a breath slowly and in relaxation let go of any burden that currently experienced. The eyes must be closed gradually, fully or partially, depending on the individual.

Data Collection and Data Analysis

The data collection began with taking the pretest data using the previously modified DASS-42. Information regarding the study's SOP, aims, and objectives was provided to respondents in both groups: the intervention group (spiritual mindfulness) and the control group (mindfulness caring). The researchers also provided a further explanation regarding the intervention to be carried out; respondents were required to attend the socialization program until it was completed. Furthermore, the researchers gave practice exercises to each group related to the intervention and provided opportunities or discussion according to the topic being studied and for asking questions when there was an unclear explanation until all respondents understood. Next, respondents from each group were invited to practice the therapy for 25 minutes under the supervision of the research team. This was done for two days. Then, each respondent was given a task to perform the therapy at home for three days and three times a day: in the morning, afternoon, and evening before bed, with each group given the same duration of time. A WhatsApp group was created to help the researchers remind the respondents of the intervention so that they would not miss or forget the therapy. This WhatsApp group was created for each group in order to control the respondents. The research process ended with a posttest using a similar instrument. The posttest was given at the end of the meeting, namely on the fifth day. To achieve this purpose, the

researchers arranged the schedule for each group to give the intervention under the same conditions as at the previous meeting. The posttest was given after each group completed the intervention. The test for homogeneity of variance showed that all data is homogeneous (Table 2). The distribution of all data was normal (Table 3). Since the researchers met the requirement for utilizing parametric tests (unpaired *t*-test and paired *t*-test), an analysis of the stress scores was conducted within each group before and after the intervention using the paired *t*-test. To compare posttest scores between the two methods (spiritual mindfulness and mindfulness caring), an unpaired *t*-test was employed.

Table 2: Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Posttest Stress Score between Two Groups	Based on Mean	1.088	1	36	0.304
	Based on Median	0.981	1	36	0.329
	Based on Median and with adjusted df	0.981	1	33.962	0.329
	Based on trimmed mean	1.115	1	36	0.299

Test of homogeneity of variance showed comparison between mean is $p > 0.05$, meaning that the data variance is homogeneous.

Table 3: Test of Normality

Variable	Shapiro-Wilk		
	Statistic	df	Sig.
Pretest spiritual mindfulness	0.958	18	0.572
Post-test spiritual mindfulness	0.958	18	0.563
Pretest mindfulness caring	0.923	18	0.145
Post-test mindfulness caring	0.963	18	0.668

Test of normality showed $p > 0.05$, meaning that data distribution is normal.

Ethical Consideration

The study was approved by the Health Research Ethics Committee of the Institute Of Health Science Banyuwangi (STIKES Banyuwangi), East Java, Indonesia, reference number 260/02/KEPK-STIKESBWI/X/2019 on 22 October 2019.

RESULTS

Table 4: Distribution of Respondents based on Gender, Age, and Stress Levels

Variable	<i>n</i>	Mean±SD	%
Gender			
Male	7	-	19.4
Female	29	-	80.6
Total			100
Age	36	21.56±0.65	100
Stress	36	21.17±2.89	100

Table 4 shows that the majority of respondents were female, as many as 29 (80.6%). The Mean±SD of the respondent's age and stress was 21.56±0.56 and 21.17±2.89, respectively, indicating that the average age was 22 and the stress level was moderate.

Table 5: Differences in Stress Scores among Nursing Students before and after the Intervention of Spiritual Mindfulness and Mindful Caring

Variable	Stress	n	Mean ± SD	Mean Difference	P-value
Spiritual Mindfulness	Pre	18	20.61 ± 2.97	9.22	0.000
	Post	18	11.39 ± 5.81		
Mindfulness Caring	Pre	18	19.72 ± 2.82	3.33	0.003
	Post	18	16.39 ± 3.55		

Table 5 shows the results of the paired t-test regarding the stress scores. The mean of stress before the intervention of spiritual mindfulness was 20.61±2.97, and after the intervention, the mean decreased to 11.39±5.81, with a mean difference of 9.22 and a p-value of <0.001. Furthermore, the mean stress before and after mindfulness care was 19.72±2.82 and 16.39±3.55, respectively, with a mean difference of 3.33 and a p-value of 0.003. Thus, the results of this study indicated a significant difference in stress scores before and after spiritual mindfulness and mindfulness caring interventions.

Table 6: Differences in the Effects of Spiritual Mindfulness and Mindfulness Caring on Reducing Stress among Nursing Students

Variable	n	Mean±SD	Mean Difference	p-value	Effect size
Spiritual mindfulness	18	11.39 ± 5.81	-6.38±1.81	0.001	0.21
Mindfulness caring	18	16.39 ± 3.55			

Table 6 depicts significant differences using an unpaired t-test in the mean scores of stresses between the spiritual mindfulness group (11.39±5.81) and the mindfulness caring group (16.39±3.55), with a mean difference of -6.38 and $p < 0.001$. In other words, there was a significant difference in the mean scores of pathological stresses between the spiritual mindfulness group and the mindfulness-caregiving group. The effect size was 0.21, indicating a moderate level of significance between the two groups.

DISCUSSION

Stress describes the body's response to unavoidable stressors in everyday life that everyone will experience (Yaribeygi *et al.*, 2017). Prolonged stress is a mental-emotional disorder that often occurs in students and is known as academic pathological stress (Hwang & Kim, 2022). Chust-Hernández *et al.* argue that pathological stress among students mainly occurs due to academic burdens. Nursing students are more at risk of experiencing academic stress than students from other disciplines due to the density of academic activities, lack of time to complete academic tasks, stressful clinical practices in hospitals, academic overload, overwhelming feelings due to nursing curriculum requirements, and a large number of exam schedules, i.e., academic examinations and clinical examinations (Chust-Hernández *et al.*, 2021).

This study showed that the majority of students have a moderate level of academic pathological stress. This is evidenced by the results of research showing that Mean±SD of the respondent's stress was 21.17±2.89, respectively, indicating that the average stress level was moderate. and most of them were female. A study exploring the effects of gender on stress reactions among college students reported significant differences between men and women regarding their reactions to stress. Female students showed more stress reactions at a higher level of depression, frustration, and anxiety than male students (Barbayannis *et al.*, 2022). It may happen because women tend to have higher intellectual and emotional demands than men. Women think that they should make better efforts than men to show their values. Since they have higher emotional demands than men, women always put forward feelings rather than rationale, which makes it more difficult for women to forget when they encounter academic failure (Graves *et al.*, 2021). In addition, physical activity also affects higher academic stress among women as they tend to have less physical activity than men. Conversely, higher levels of physical activity are associated with lower academic stress (Chust-Hernández *et al.*, 2021).

This study showed that the mean age of the respondents was 22. Continuing their education to higher degrees at college is a dream for young adults. The Federal Interagency Forum on Child and Family Statistics states that young adults are individuals aged 18-24 years old. A study shows that age can affect individuals in dealing with stressors, as it is one of the affecting factors of individual coping (Chust-Hernández *et al.*, 2021). College students are individuals of early adult age (18-24). They tend to use maladaptive coping mechanisms, and as a result, it is easy for them to experience stress (Graves *et al.*, 2021). These maladaptive coping strategies may include ignoring stress, avoiding others, blaming others, consuming alcohol, quitting college, and committing suicide (McCarthy *et al.*, 2018). Similarly, Jacoby *et al.* also stated that individual reactions to stress tend to be maladaptive, including irritability, crankiness, anxiety, restlessness, nightmares, and difficulties in concentrating and making decisions (Jacoby *et al.*, 2021).

Spiritual mindfulness is an emotion-focused coping strategy used to reduce various adverse emotional reactions to the body's stressors. During the therapy, participants will do introspection, self-evaluation, prayers, and surrender to God; with such activities, they can express their feelings to feel calmer and more comfortable (Dwidiyanti *et al.*, 2019; Munif, Poeranto, & Utami, 2019). Gargiul (2023) states that the spiritual approach plays a vital role in expressing feelings and comforting patients. Accepting an illness will lead individuals to get closer to God and accept the illness as a temptation from God.

This study showed that spiritual mindfulness had a significant effect on the academic pathological stress of nursing students in dealing with their academic burdens. In the spiritual mindfulness group, the stress score before the intervention was 20.61 ± 2.97 , and after the intervention, the score decreased to 11.39 ± 5.81 . Furthermore, a significant difference in the stress scores before and after spiritual mindfulness was found, with a mean difference of 9.22 ± 4.67 and $p < 0.001$. Spiritual mindfulness is a combination of mindfulness caring that only focuses on developing self-efficacy and self-care to cognitive awareness and spiritual therapy that focuses on developing the urge, i.e., motivation or soul inclination that God bestows on human conscience to do good deeds beneficial for oneself and others (Munif, Poeranto, & Utami, 2019).

With this combination, spiritual mindfulness not only focuses on developing self-efficacy and self-care through cognitive awareness but also promotes the urge in students to develop their self-efficacy and self-care appropriately. As a result, students will be more aware of accepting the stressors they experience and will be calmer and more comfortable (Munif, Poeranto, & Utami, 2019; Nilsson, 2022). In his psychoanalytic theory, Sigmund Freud stated that the superego always plays a role in promoting the ideal of ego or moralistic values (Sibi & Sibi, 2020). Therefore, belief, independence, and awareness from the deepest heart will encourage individuals to do good deeds.

Mindfulness care is a coping strategy focusing on cognitive and physical aspects to reduce adverse physical reactions to stress by managing stress using mind-processing techniques to develop acceptance and self-relaxation (Munif, Poeranto, & Yulian Wiji Utami, 2019). There are three strategies for coping with stress, one of which is physical-focused coping, which describes an individual's effort to change stress reactions by managing the stress using self-relaxing techniques to reduce stress and be more relaxed (Dwidiyanti *et al.*, 2019; Hasina *et al.*, 2021).

This study showed that mindfulness caring significantly affected students' pathological stress concerning their academic burdens. Before the implementation of mindfulness caring, the mean value of students' stress was 19.72 ± 2.82 , and after the intervention, the value decreased to 16.39 ± 3.55 . The mean difference in stress before and after mindfulness caring was 3.33 ± 4.10 with $p = 0.003$. Mindfulness caring is a therapy that is developed using the concept of mindfulness combined with Bandura's self-efficacy theory and Orem's self-care. Mindfulness caring develops cognitive awareness to understand the problems faced with full acceptance and high levels of self-efficacy and self-care to achieve the desired goal (Dwidiyanti *et al.*, 2018). In her philosophy of self-care theory, Orem mentioned that a self-care deficit occurs since the self-care agency cannot fulfil self-care demands, and therefore, nursing agencies are needed (Hartweg & Metcalfe, 2022).

For an analogy, students who are unable to manage stressors, since their ability to manage stressors (self-care agency) cannot meet their demands for managing stressors (self-care demands), may experience stress (self-care deficit). Thus, nursing agents are needed to meet the demands of students in managing stressors, and in this case, mindful caring is a nursing agent. Mindfulness caring aims to help individuals feel relaxed, be

aware of the causes of stress they encounter, find solutions to overcome problems, and manage stress to reduce their stress levels (Dwidiyanti *et al.*, 2018). Their book entitled *Mindful Caring for Stress* states that mindfulness caring is an exercise that individuals perform with awareness and a sense of relaxation, love, and respect for themselves, and understanding and knowing the causes of stress they experience (Dwidiyanti *et al.*, 2018). The individuals also accept the condition by increasing their self-efficacy and setting independent, healthy targets so that they can solve their problems. Thus, mindfulness caring helps individuals be more relaxed, aware of the causes of stress, and find solutions to overcome problems, as well as manage stress to reduce its level. Research shows that mindfulness caring effectively reduces academic stress among nursing students who are completing their final project (de Diego-Cordero *et al.*, 2022; Munif, Poeranto, & Yulian Wiji Utami, 2019).

Mindfulness-based therapy effectively reduces stress (Munif *et al.*, 2020). In their study, Bamber and Schneider stated that 33 out of 40 studies had proved that mindfulness-based interventions were effective in reducing stress among students (Bamber & Schneider, 2016). However, there were significant differences in their effectiveness levels. Such differences might occur in the frequency, duration, and variations in the method of administration. It is congruent with the result of this study, which showed a significant difference in the mean of stress between the spiritual mindfulness group (11.39 ± 5.81) and the mindfulness caring group (16.39 ± 3.55), with a mean difference of -6.38 ± 1.81 , a *p*-value of <0.001 , and an effect size of 0.21. In addition, there was a statistically significant difference in the mean stress scores between the spiritual mindfulness and the mindfulness caring groups, with a moderate level.

Based on the students' stress identification using the DASS instrument, the difference in stress changes among students occurred in their response toward aggressiveness. Spiritual mindfulness can reduce students' aggressive responses, such as irritated feelings due to trivial things, overreaction to situations, being easily upset, impatient when experiencing delays, feeling touchy, and being very irritable. Spiritual mindfulness could reduce such responses because this intervention was not only focused on the development of awareness and acceptance but also on the inculcation of spiritual values such as introspection, self-evaluation, prayers, and surrender that make students accept, relax, and control their emotions (Munif, Poeranto, & Utami, 2019; Rykkje *et al.*, 2022).

The results of this study are supported by Dwidiyanti *et al.*, who found that spiritual-based mindfulness was effective in reducing stress, controlling anger, and calming schizophrenic patients with risks of violent behaviors (Dwidiyanti *et al.*, 2020). Furthermore, Dwidiyanti *et al.* showed that spirituality effectively prevents depression and other psychological disorders. Spiritual therapy significantly affects self-acceptance, so patients will not feel depressed anymore and regret their fate. In fact, patients will be able to express their feelings for a better life and mental health. The spiritual approach plays a vital role in expressing feelings and providing comfort for patients (Bagereka *et al.*, 2023; Dwidiyanti *et al.*, 2021). By accepting the illness, patients can get closer to God and accept the illness as a temptation from God. In spiritual therapy, the heart and mind are the therapeutic targets for managing psychological illnesses. The practice of mindfulness, which is performed by developing spiritual values, is proven to be more effective since mindfulness is associated with spirituality, and there is a strong relationship between mindfulness and spirituality. Mindfulness-based interventions originate from Eastern spiritual traditions, especially Buddhism (Gargiulo, 2023).

CONCLUSION

This research found that spiritual mindfulness and mindfulness-caregiving interventions can reduce pathological stress in nursing students. However, a difference was found, namely that spiritual mindfulness interventions were more able to reduce aggressive stress responses in nursing students. This study might open up the possibility of implementing the spiritual mindfulness method in healthcare facilities or other institutions. However, this research needs to be re-tested on a sample group with different and more severe mental problems. Researchers have not found in previous research that spiritual mindfulness is effective for dealing with severe mental problems such as schizophrenia.

Conflict of Interest

The researchers did not have a conflict of interest with anyone, either individuals or institutions.

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