Online Nurse: Incorporating Islamic Spiritual Mindfulness to Decrease Anxiety during Online Learning among Nursing Students

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A B S T R A C T

Online learning during the COVID-19 pandemic has significantly impacted the physical and psychological health of most college students in Indonesia, especially nursing students. The major psychological impacts that students experience may include increased stress levels and anxiety. Islamic spiritual mindfulness through Online Nurse application is an exercise for emotional regulation with spiritual approach that is carried out online for students to control the situation and choose to accept so that they can reduce their anxiety or stress related to online learning during the COVID-19 pandemic. **Objective:** This study aimed to determine the effect of Islamic spiritual mindfulness through Online Nurse on reducing anxiety in students undertaking online learning. **Methods:** This study used a pre-post test quasi-experimental design with a control group. The samples were students undertaking online learning, consisting of 40 students from Qomarul Huda Badaruddin University (UNIQHBA) as the intervention group and 40 students from North Sumatra University (USU) as the control group. **Results:** There was an effect of Online Nurse on decreasing anxiety levels among students with a p-value of 0.000. **Conclusion:** Online Nurse can be applied to decrease anxiety among students in certain triggering situations, such as COVID-19 and online learning. Islamic spiritual mindfulness is needed in reducing anxiety.

A B S T R A K

Latar Belakang: Pembelajaran daring di masa pandemi COVID-19 berdampak signifikan terhadap kesehatan fisik dan psikis sebagian besar mahasiswa di Indonesia, khususnya pada mahasiswa keperawatan. Dampak psikologis utama yang dialami mahasiswa adalah meningkatnya tingkat stres dan kecemasan. Mindfulness Spiritual Islam (MSI) melalui Online Nurse merupakan latihan pengaturan emosi melalui aspek spiritual yang dilakukan melalui program online bagi mahasiswa untuk dapat mengendalikan keadaan dan memilih untuk menerima, sehingga dapat mengurangi kecemasan atau stres yang dialami selama menjalani pembelajaran daring di masa pandemi COVID-19. **Tujuan:** Penelitian ini bertujuan untuk mengetahui pengaruh MSI melalui Online Nurse terhadap penurunan kecemasan pada mahasiswa yang sedang melakukan pembelajaran online. **Metode:** Metode penelitian ini adalah penelitian eksperimen semu dengan pre-test post-test control group. Sampel penelitian adalah siswa yang mengikuti pembelajaran online, meliputi kelompok intervensi yang terdiri yang dari 40 siswa dari Universitas Qomarul Huda Badaruddin (UNIQHBA), dan kelompok kontrol yang terdiri dari 40 siswa dari Universitas Sumatera Utara (USU). **Hasil:** Ada pengaruh

MSI melalui Online Nurse terhadap tingkat kecemasan dengan nilai p=0,000. **Kesimpulan:** Online nurse bisa dipakai untuk menurunkan kecemasan mahasiswa pada saat mengalami situasi tertentu yang memicu kecemasan, misalnya COVID-19 dan kuliah daring. Untuk menurunkan tingkat kecemasan mahasiswa, intervensi MSI mungkin diperlukan.

INTRODUCTION

Coronavirus Disease-2019 (COVID-19) has become a significant problem in all countries worldwide. Until now, COVID-19 has been categorized as a global pandemic concerning the distribution and the number of cases (Susilo et al., 2020). Many countries worldwide have experienced morbidity and mortality due to the high spread of COVID-19 and its wide impacts on health, economic, social, and cultural aspects. The spread of COVID-19 in Indonesia is now increasingly widespread, followed by an increase in confirmed cases and deaths. In dealing with this global pandemic, Indonesian people apply several health protocols referring to the regulations designed to minimize the spread of the virus (Ministry of Health Republic of Indonesia, 2018).

The community activity restrictions (better known as *Pembatasan Kegiatan Masyarakat [PPKM]*) is one of the government's efforts to anticipate the spread of COVID-19. *PPKM* has a major impact on almost all aspects of lives in general, one of which is the education sector. The regulations issued by the government require all educational institutions, from early childhood education to tertiary institutions, to be temporarily closed (Martoredjo, 2020). As a result, most of the learning process has shifted to the online methods. Most educational institutions have been running online learning systems, especially universities.

The online learning undertaken by most students in Indonesia has provided some adverse impacts, especially on nursing students. This happens due to the workload of courses and clinical practice that should be carried out from time to time. Most students state that online learning is sometimes ineffective. Online learning makes it difficult for students to understand the materials; they also have limited communication with lecturers, inadequate learning facilities, difficulty discussing with friends, as well as unstable internet connections, and family economic situations that support online learning (Yanti & Nurwulan, 2021). Besides impacting ineffectiveness in the learning process, online learning also has a major impact on health. A survey of health problems on early-year nursing students at the University of Lombok and the University of North Sumatra showed a number of health problems that students experienced due to the online learning method during the pandemic. These health problems are not only the physical aspect but also the psychological aspect (Febriyanti & Mellu, 2020).

Nursing students, especially in the early years, will experience a process of transition and stress in the lecture process, particularly those who still live in their place of residence (Gallego-Gomez el at., 2020). Also, current online learning due to the pandemic can cause psychological problems such as anxiety. A study by Nilgun and Ebru (2021) has shown nursing students' experiences of anxiety and fear. Another study involving 234 nursing students also showed a positive correlation between the total score of BAI and students' fear of COVID-19; the anxiety and fear were high among the students (Alici & Copur, 2020). Furthermore,

Rosmawaty, Destania, and Simatupang (2021) studied anxiety among 368 nursing students regarding online learning during the COVID-19 pandemic. The results showed that 58% of students experienced high psychological anxiety, 54% experienced physiological anxiety, and 62% experienced low online learning anxiety (Rosmawaty, Destania, & Simatupang, 2021). The majority of students at the early year experience anxiety due to the environment and new academic atmosphere that they find difficult to adapt. The high level of anxiety experienced by nursing students will cause a decrease in learning skills and poor academic results, so they are also at risk of experiencing failure (Bamber & Schneider, 2016).

Early year students need to adapt to dealing with anxiety. Therefore, it is essential for the students to know how to deal with anxiety and manage adaptive intrapersonal skills in the academic learning process (Aydın & Yucel, 2014). It is necessary to make an innovative approach with appropriate intervention strategies for students to control anxiety. One of the appropriate interventions for students to deal with anxiety is spiritual mindfulness. This exercise can reduce stressors with psychological problems that students experience. Previous studies have shown that mindfulness is a promising strategy for nursing students to deal with psychological problems such as anxiety. The teaching and management programs of anxiety, such as spiritual mindfulness, can reduce anxiety and stress (Bamber & Schneider, 2016; Munif, Poeranto, & Utami, 2019; Zollars, Poirier, & Pailden, 2019).

Online Nurse is a website-based technology that contains information related to anxiety interventions in video tutorials about Islamic spiritual mindfulness therapy and an anxiety measurement tool using the Zung Self-Rating Anxiety Scale (ZSRAS). Islamic spiritual mindfulness through *Online Nurse* is an exercise for emotion regulation with a spiritual approach for students to control the situation and accept it. Therefore, *Online Nurse* could help students reduce the anxiety or stress they experience while participating in online learning during the COVID-19 pandemic. Accordingly, this study aimed to determine the effect of Islamic spiritual mindfulness through *Online Nurses* on reducing anxiety in students undertaking online learning during the COVID-19 pandemic.

METHODS

Participant characteristics and research design

This study employed a pretest-posttest quasi-experimental design with a control group. The respondents were early-year students undertaking online learning. The inclusion criteria included: (1) early-year students with symptoms of anxiety at mild and moderate levels; (2) students who had and could use gadgets; and (3) students

who agreed to participate. This study was conducted from October to November 2021.

Sampling procedures

The sampling method in this study was non-probability sampling with a purposive sampling technique.

Sample size, power, and precision

The samples were calculated based on the Lemeshow formula. The minimum required samples were 68 respondents, 34 respondents in the intervention group and 34 in the control group. In this study, the samples included 80 respondents, 40 students from the University of Qamarul Huda Badaruddin as the intervention group, and 40 students from the University of North Sumatra as the control group.

Measures and covariates

The Zung Anxiety Self-Rating Scale (ZSRAS) was used to measure students' anxiety. The anxiety levels included mild, moderate, severe, and panic categories. The instrument could be accessed on the anxiety screening feature in the *Online Nurse* on the website: radenmasamino.org. Respondents were requested to fill out a pre-test questionnaire before implementing the Islamic spiritual mindfulness intervention. In this study, the intervention was carried out three times with guidance and one time independently. The intervention was performed once a week. A post-test was conducted after the respondents performed the intervention. The data were recorded in the application that was accessible only to the researchers and administrators.

Data analysis

Univariate and bivariate analyses were performed for data analysis. Univariate analysis was used to determine the frequency distribution of respondents' characteristics in the study, and bivariate analysis was carried out using the paired sample t-test and the independent t-test to determine the effect of the intervention on anxiety levels in each group and to compare the intervention group and the control group. The significance level was set at 0.05.

RESULTS AND DISCUSSION

This study was conducted among 80 nursing students who were divided into two groups. The intervention group consisted of 40 students from the University of Qamarul Huda Badaruddin, while the control group consisted of 40 students from the University of North Sumatra.

Univariate Analysis

Characteristics of Respondents

The distribution of respondent characteristics in this study was determined based on age, parent's occupation, and birth order in the family. The characteristics of the respondents can be seen in Table 1.

Table 1. Frequency Distribution of the Respondents' Characteristics (n=80)

Variable	Groups			
	Control		Intervention	
	n	%	n	%
Age				
17 years old	6	15.0	2	5.0
18 years old	28	70.0	15	37.5
19 years old	5	12.5	8	20.0
20 years old	1	2.5	0	0
>20 years old	0	0	15	37.5
Parents' Occupation				
Private employee	4	10.0	0	0
Self-employed	15	37.5	7	17.5
Civil servant	7	17.5	5	12.5
Farmer	5	12.5	14	35.0
Others	9	22.5	14	35.0
Birth Order				
First	14	35.0	15	37.5
Second	14	35.0	13	32.5
Third	7	17.5	6	20.0
>Third	5	12.5	6	20.0

Table 2. Distribution of Anxiety Levels (n=80)

Category	Control				Intervention			
	Pre		Post		Pre		Post	
	f	%	f	%	f	%	f	%
Normal	38	95.0	35	87.5	5	12.5	37	92.5
Mild	2	5.0	5	12.5	31	77.5	3	7.5
Moderate	0	0	0	0	4	10.0	0	0
Severe	0	0	0	0	0	0	0	0
Panic	0	0	0	0	0	0	0	0

Table 1 shows that most respondents in the control and intervention groups are 18 years old; most of their parents work in the private sector, as farmers, and others. The majority of respondents are also the first and second children in their families.

Respondents Anxiety Level

Table 2 shows changes in the level of anxiety in the intervention group before and after the intervention from 31

(77.5%) respondents with mild anxiety and 4 (10%) respondents with moderate anxiety to only 3 (7.5%) respondents with moderate anxiety. On the other hand, there was an increase in the number of respondents with anxiety in the control group without the intervention from 2 (5%) to 5 (12.5%).

Table 3. Differences in student anxiety levels in the intervention group and the control group (n=80)

Group	Anxiety		Mean Difference	*p*-value [a]
	Mean±SD	Mean±SD		
Intervention (n=40)	51.00±5.31	31.97±7.90	1.902	0.000
Control (n=40)	32.57±6.33	36.50±7.35	- 1.225	0.113
p-value [b]	0.000	0.010		

[a]Paired *t*-test | [b]Independent *t*-test

Differences in Anxiety

The difference in students' anxiety concerning online learning during the Covid-19 pandemic can be seen in Table 3. Based on the result of the paired sample t-test in Table 2, it can be concluded that there was a significant effect of Islamic spiritual mindfulness through the *Online Nurse* application on the students' anxiety levels. A significant difference in anxiety levels before and after the intervention was found (p=0.000 <0.05). On the other hand, there was no significant difference in anxiety levels in the control group before and after the intervention (p=0.113). This finding is in line with the result of the independent t-test, in which a difference in anxiety after the intervention (p=0.010 <0.05) was found with the mean value of the intervention group (32.0) smaller than that of the control group (36.5). In other words, the decrease in anxiety in the intervention group was greater than that in the control group.

DISCUSSION

Anxiety is a normal feeling that students experience when they face something causing fear or concern, one of online learning during the COVID-19 pandemic. With positive thoughts, anxiety that arises can be used as motivation to overcome existing challenges or situations; however, if anxiety persists and increases until it interferes with daily activities, anxiety disorders may occur (Ruswadi, 2021).

Online learning during the COVID-19 pandemic has posed various problems and uncertainties about academic and professional careers (Hoque et al., 2021). Some of these problems can negatively impact students, especially early-year students, who experience transitions and pressures in the lecture process (Gallego-Gomez et al., 2020). In addition, the college environment and new academic atmosphere make students find it challenging to adapt, which often causes anxiety. This anxiety tends to be higher in nursing students than in students from other disciplines due to the workload of courses and clinical practice that should be undertaken (Kim & Park, 2021). The negative impact can be a decreased ability in study skills and poor achievement that may cause a risk of failure (Bamber & Schneider, 2016). To

handle and minimize these negative impacts, students need interventions for decreasing anxiety.

This study showed a significant effect of Islamic spiritual mindfulness through *Online Nurse* application on reducing anxiety in students undertaking online learning (p=0.000 <0.05). Before the intervention, 35 respondents in the intervention group experienced anxiety (31 respondents with mild anxiety and 4 respondents with moderate anxiety). After the intervention, the respondents who experienced anxiety decreased to 3, all with mild anxiety. On the other hand, in the control group that received no intervention, there was an increased number of respondents with anxiety from 2 to 5. Therefore, it can be concluded that Islamic spiritual mindfulness effectively reduces student anxiety levels during online learning amid the Covid-19 pandemic. The result of this study is in line with other studies reporting that mindfulness effectively reduces anxiety levels (Hofmann & Gomez, 2017; Dhamayanti & Yudiarso, 2020).

The innovative intervention made in this study is concerned with using the *Online Nurse* website, which not only serves to screen for anxiety but also provides Islamic spiritual mindfulness intervention to reduce anxiety. Internet/mobile-based interventions make it easy for users to access so that they can integrate the interventions into daily life flexibly without limitations; such interventions are also cost-effective in reducing stress related to academic problems in college (Sander, Rausch, & Baumeister, 2016; Harrer et al., 2018). Islamic spiritual mindfulness is an exercise that involves God *(Allah)* in each process. It will help individuals consciously understand the experience; the conditions individuals face are not coincidences but are provisions and events that originate and are created by *Allah* (Dwidiyanti, Fahmi, Ningsih, Wiguna, & Munif, 2019). Therefore, mindful individuals will do everything with full awareness and try to improve their ability to overcome problems that occur in their lives.

Islamic spiritual mindfulness is taught in several steps, including intention, introspection, repentance, body scan, prayer, surrender, and relaxation. In this intervention, individuals will consciously raise the intention or impulse to cleanse the soul and increase their piety to *Allah* with full awareness without coercion from others. Next, they will introspect on their mistakes and ask forgiveness. When asking for forgiveness, the individuals will feel the body's response to the mistakes that they have made (body scan).

Finally, the individuals pray for help for all problems, surrender to *Allah*, and perform relaxation by coughing to relax the body (Dwidiyanti & Ulliya, 2021).

Islamic spiritual mindfulness can reduce anxiety by combining mindfulness and Islamic spiritual values. Meditation with mindfulness is a condition where individuals are fully aware of the conditions that they are currently experiencing and do not allow internal/external factors to interfere. The individuals accept and acknowledge it without getting caught up in the emotional thoughts/reactions in that situation (Zollars, Poirier, & Pailden, 2019). Meditation activities have been shown to affect the brain. When individuals make their brains full of attention, it will increase their health and well-being. This happens because this specific attention can improve the brain's structure in a more positive direction, especially in the left frontal lobe. Activation in the left frontal lobe is associated with improvement of depression and promotion of more positive feelings. Davidson has shown that individuals who create a mood with positive well-being (e.g., meditation/mindfulness) are more resilient (Arden, 2010).

In practicing mindfulness, individuals concentrate on the present moment, breath, physical sensations, sounds, thoughts, and emotions. For people whose brains are used to planning, predicting, telling stories, wondering, remembering, regretting, and worrying, adjusting to current conditions is an unusual thing to do and is challenging. However, spending time thinking in this new way results in changes in the white and gray matters that make up the brain. Gray matter is the part of the brain that consists of nerve cells that release chemical/electrical signals in response to electrical impulses from the nervous system, while white matter consists of the long, slender extension of cells called axons that form connections between cells, and allow communication between cells in different brain areas. This communication is called thinking. This process is able to reveal how changes in brain mediators can affect and benefit an individual's mental health (Pernet, Belov, Delorme, & Zammit, 2021; Tang, Friston, & Tang, 2020).

The result of observations in a study conducted on participants who participated in a mindfulness program for eight weeks showed changes in several parts of the brain during mindfulness. These changes occur in the anterior cingulate cortex (ACC) and the hippocampus. ACC is associated with self-regulation, that is, the ability to purposely direct attention and behavior, suppress inappropriate spontaneous responses, and change strategies flexibly. ACC is also associated with learning from past experiences to support optimal decision-making. The researchers also point out that ACC can be very important in the face of uncertainty and rapidly changing conditions (Congleton, Holzel, & Lazar, 2015). This result is related to the condition of the students in the present study who experienced anxiety related to the pandemic and the new lecture situation, which was a rapid and uncontrollable change. The hippocampus also showed an increased amount of gray matter in respondents who underwent mindfulness; the hippocampus is part of the limbic system associated with emotions and memory. The hippocampus includes receptors for stress hormones such as cortisol, and research has shown that stressful conditions and excessive mental stress can damage it. Individuals with stress conditions and PTSD showed a smaller size of hippocamps. The previously mentioned factors show the importance of this brain area in improving resilience (Congleton, Holzel, & Lazar, 2015; Pernet, Belov, Delorme, & Zammit, 2021; Tang, Friston, & Tang, 2020).

This study shows that Islamic spiritual mindfulness is successfully evident in handling mental stress conditions in individuals, especially anxiety. Islamic spiritual mindfulness promotes Islamic spiritual beliefs that there is God's intervention in all problems in life. Spiritual therapy can help individuals build a sense of self-acceptance to avoid feeling depressed. As a result, individuals will be able to express their feelings and have better mental health conditions. With spiritual therapy, bad things happening to individuals will encourage them to get closer to God since they believe that everything, good or bad, is something that comes from God. The target of spiritual therapy in dealing with various psychological problems is none other than the heart and mind (Munif, Poeranto, & Utami, 2019).

LIMITATION OF THE STUDY

This study was conducted to identify the effectiveness of Islamic spiritual mindfulness in reducing anxiety among early-year nursing students undertaking online learning. The limitation of this study is associated with the intervention that was carried out online through the Zoom application. Therefore, obstacles existed related to network connections during the administration of the intervention.

CONCLUSIONS AND SUGGESTIONS

The Islamic spiritual mindfulness intervention on the *Online Nurse* website significantly reduced students' anxiety levels. This intervention could help students minimize the negative impacts of anxiety in their online learning during the Covid-19 pandemic. This study suggests that this intervention can become a priority in health services to deal with anxiety problems in institutions and communities.

Acknowledgment

ETHICAL CONSIDERATIONS

All procedures carried out in this study involved nursing students and were in line with the ethical standards of institutional/national research committees. This study was also conducted with approval from the Health Research Ethics Committee in Diponegoro University.

Funding Statement

Conflict of Interest Statement

Authors are requested to disclose interests *that are directly or indirectly related to the work submitted for publication*. Interests within the last 3 years of beginning the work (conducting the research and preparing the work for submission) should be reported. Interests outside the 3-year

time frame must be disclosed if they could reasonably be perceived as influencing the submitted work. Disclosure of interests provides a complete and transparent process and helps readers form their own judgments of potential bias. This is not meant to imply that a financial relationship with an organization that sponsored the research or compensation received for consultancy work is inappropriate.

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