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RESEARCH ARTICLE

The Effectiveness of Koran Recitation to Reduce Academic Anxiety Among First Year Students: A Randomized Controlled Trial

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Abstract

Academic anxiety, characterized by stress and worry related to evaluation processes, is a significant challenge among first-year students, often leading to poor academic performance. Religious-based interventions, such as Koran recitation, have shown promise as non-pharmacological strategies for managing anxiety. This randomized controlled trial aimed to investigate the impact of Koran recitation on reducing academic anxiety among first-year psychology students at UIN Sunan Kalijaga. A total of 39 participants were purposively selected based on criteria including moderate to high academic anxiety, no use of anti-anxiety medication, and limited memorization of Koranic verses. Participants were divided into three groups: one listened to Ayat As-Sakinah, another to Surah Fussilat, and the control group received no intervention. The Academic Anxiety Scale by Huberty (2012) was used to measure outcomes. Results indicated that listening to Surah Fussilat significantly reduced academic anxiety, while Ayat As-Sakinah also reduced anxiety but not to a statistically significant level. In contrast, the control group experienced an increase in anxiety. These findings underscore the potential of religious-based interventions, particularly Koran recitation, as effective tools to alleviate academic anxiety, offering practical implications for educational institutions seeking culturally relevant and accessible mental health strategies.

Keywords: Academic Anxiety, Koran Recitation, Randomized Controlled Trial, New College Students

INTRODUCTION

Individuals who embark on higher education are anticipated to exhibit proficiency in the management of their emotional states (Corpuz & Tindowen, 2021). This competency encompasses recognizing the attributes of emotions, controlling emotions, and responding to emotions in a manner that prevents adverse outcomes. Students who exhibit strong emotional management skills have been found to enhance their cognitive function performance, enabling them to actively engage in academic pursuits, demonstrate appropriate conduct, and reduce immature behaviors (Fang, 2019). In contrast, students with weak emotional management skills are often plagued by anxiety and depression (Young et al., 2019; Fiorilli et al., 2020). Mehta's (2016) research indicates that the prevalence of academic anxiety among students typically ranges from 4% to 25%. Similarly, Marthoenis et al. (2018) reported that 1.9% to 38.3% of students in Indonesia experience mild to severe academic anxiety. Islam et al. (2020) also found a high anxiety rate of 61% among first-year students. According to Nevid et al. (2018, p. 187), anxiety can be triggered by both internal and external factors. The academic environment is one such external factor that can contribute to anxiety, as noted by Hooda & Saini (2017).

The phenomenon of academic anxiety has been widely recognized as a pervasive issue among school students, characterized by significant levels of stress and worry in response to evaluative events, such as exams and public performances (Huberty, 2012). Drawing from Huberty's (2012) insights, academic anxiety is a multidimensional construct that encompasses cognitive, behavioral, and physiological aspects. Specifically, the cognitive dimension manifests itself in the form of difficulty in focusing or concentrating, completing tasks with ease, and grappling with worrisome thoughts. Behavioral manifestations of academic anxiety may include outbursts of anger and other negative responses to academic tasks. Lastly, the physiological dimension is characterized by symptoms such as rapid heartbeat, headaches, and disturbed sleep patterns.

According to Mirawdali et al. (2018), academic anxiety can lead to a decline in students' abilities, particularly when

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faced with exams or assessments. Researchers have discovered that students experiencing academic anxiety struggle to avoid distractions and require more time to redirect their attention to tasks, which can negatively impact the learning process. Several researchers have found that academic anxiety can affect an individual's ability to absorb, process, and recall information, leading to negative effects on working memory and poor mental performance, ultimately resulting in underachievement. Kusumastuti (2020) also found a negative relationship between academic anxiety and students' academic performance. Academic anxiety can have a detrimental impact on an individual's ability to control attention, concentration, working memory, and emotional intelligence, ultimately resulting in a decline in learning ability and academic performance, as noted by Hashempour (2014). Moreover, excessive academic anxiety can interfere with attention, concentration, and memory, all of which can have negative effects on an individual's academic performance, as stated by Alam (2017). Consequently, students may withdraw or avoid socializing with peers or engaging in enjoyable activities to avoid academic activities.

Islam et al. (2020) suggest interventions for academic anxiety in new students, encompassing both pharmacological (SSRIs) and non-pharmacological methods like aromatherapy, massage, relaxation techniques, music, and Koran recitation (Ghiasi & Keramat, 2018). Recent research emphasizes non-pharmacological approaches due to potential side effects of pharmacological methods (Lopez-Yufera et al., 2020). Listening to Koran recitation is a documented non-pharmacological strategy for anxiety reduction (Ghiasi & Keramat, 2018).

According to the values of Islam, listening to *dhikr*, including the recitation of the Qur'an (*murottal*), has been emphasized as a means to attain tranquility of the heart. Allah the Almighty states: "Those who have believed and whose hearts are assured by the remembrance of Allah. Unquestionably, by the remembrance of Allah, hearts are assured" (Surah Ar-Ra'd: 28). On the other ayah Allah states, "Allah has revealed the best of speech: a consistent Book wherein there is reiteration. The skins of those who fear their Lord shiver from it; then their skins and their hearts relax at the remembrance of Allah. That is the guidance of Allah by which He guides whom He wills. But whomever Allah leaves astray—there will be no one to guide him." (Surah Az-Zumar: 23). And, "And when the Qur'an is recited, listen to it attentively and remain silent so that you may receive mercy." (Surah Al-A'raf: 204)

Indonesia is the country with the largest Muslim population in the world (Sultan, 2023). Muslims are obligated to perform the five daily prayers (*salah*) within a 24-hour period (Mahamid, 2023). Salah not only holds profound religious values but also offers medical benefits from a health perspective (Suparman, 2015). Indonesian Muslims have long been accustomed to performing congregational prayers, which have become a deeply rooted religious and cultural value in the country. Moreover, prayer fosters inner peace, particularly when the congregation (ma'mum) listens to the Qur'anic recitation by the imam (Maʼmuroh & Toto Edidarmo, 2024).

The recitation of Koranic verses, referred to as murottal, is an important aspect of Islamic worship. This practice focuses on two main elements: accuracy of recitation (tajwid) and rhythm of recitation (Babamohamadi, 2017). Bugha and Matu (1999, p. 15) explained that the Koran is the revealed word of Allah in Arabic and is considered a miracle. It was revealed to the Prophet Muhammad (peace be upon him) through the angel Jibril (Gabriel) and has been passed down through multiple sources. The Koran is recorded in written form in several copies, known as mushaf. The Koran is started with the chapter Al-Fatihah and ended with the chapter An-Nas. According to Al-Jurani (2018, p. 37-38), listening to the Koran can have a therapeutic effect on both physical and psychological conditions. Physical illnesses such as headaches, high or low blood pressure, paralysis, cancer, and high blood sugar can be alleviated through Koranic recitation. Similarly, psychological conditions, such as sadness, depression, anxiety, grief, tension, and worry, can be treated through the Koran. The therapeutic effects of the Koran are believed to be stronger when the person recites and listens to the verses of As-Sakinah, compared to other types of verses. As-Sakinah verses are special verses utilized to pacify the psychological well-being of an individual (Al-Jurani, 2018, h. 130).

Based on those studies, the central premise of this research was that exposure to the recitation of the Koran could result in a decrease in academic anxiety. Additionally, a secondary hypothesis proposed that listening to the recitation of Ayat As-Sakinah, a specific verse from the Koran, would be more effective in mitigating academic anxiety compared to other verses.

LITERATURE REVIEW

Religion-based interventions for mental health are being explored globally. Studies, such as Religiously Integrated Cognitive Behavioral Therapy for chronic diseases and depression, Mindfulness-Based Therapy for anxiety, depression, and pain, and Religious Spiritual Group Therapy for individuals struggling with drug abuse, indicate positive outcomes (Koenig et al., 2015; Isgandarova, 2019; Gonçalves et al., 2015). Meta-analyses confirm the effectiveness of these interventions in reducing symptoms of anxiety disorders, depression, stress, and alcohol addiction (Gonçalves et al., 2015). Non-pharmacological interventions, like religious therapy, are gaining attention for anxiety disorders (Ghiasi et al., 2018).

The Koran is studied for its therapeutic benefits, with research showing that its concurrent use with interdialytic endurance-resistance training improves physical fitness, quality of life, and reduces anxiety in elderly patients on regular hemodialysis (Frih et al., 2017). Listening to the Koran without tartil positively affects mental health (Mahjoob et al., 2016) and induces calmer emotional states (Salam et al., 2013).

Reading the Koran has proven to alleviate symptoms of depression and anxiety in hemodialysis patients (Babamohamadi et al., 2017; Babamohamadi et al., 2015). Ghiasi et al.'s (2018) literature review found positive effects of listening to the Koran on anxiety in diverse contexts. Shekha et al. (2013) discovered that Koran recitation increases alpha waves, inducing a more relaxed state, surpassing the impact of classical music (Zulkurnaini et al., 2012). The Koran was also more effective than music in reducing anxiety (Masoumy et al., 2013; Rafique et al., 2019). Studies by Najafi et al. (2014), Jayus et al. (2017), and Jabbari et al. (2020) investigated the Koran's role in reducing depression, anxiety, and stress in both patients and general subjects.

Despite these findings, it's crucial to acknowledge potential bias in religion-based interventions. Koenig et al. (2015) highlighted the influence of participants' religiosity levels on the effectiveness of religious treatment, suggesting that individuals with low religiosity may not respond well. The outcomes did not significantly differ from conventional

treatment, questioning the strong justification for choosing religious interventions over conventional therapy. Additionally, religious intervention studies lack standardization in protocols, as noted by de Bernardin Gonçalves et al. (2015).

The methodology employed in research exploring religion-based interventions, particularly the impact of the Koran on anxiety and mental health, has been diverse and targeted at various population groups. Previous studies have focused on different demographics, such as healthy early adults (Zulkurnaini et al., 2012), elderly populations (Frih et al., 2017), and patients with specific medical conditions, including myocardial infarction (Najafi et al., 2014) and coronary heart disease (Jayus et al., 2017). Moreover, research has also been conducted on healthy pregnant women without comorbidities (Jabbari et al., 2020) and female patients in psychiatric wards diagnosed with severe depression (Rafique et al., 2019). Investigations among students have also been conducted, as exemplified by Masoumy et al.'s (2013) work.

Research on the impact of Quran intervention for anxiety reduction predominantly employs randomized controlled trials and quasi-experimental designs (Najafi et al., 2014; Mahjoob et al., 2016; Frih et al., 2017; Jabbari et al., 2020; Masoumy et al., 2013; Jayus et al., 2017). Sample sizes vary, with some studies using small samples (Rafique et al., 2019) and others exceeding 30 participants (Jabbari et al., 2020; Jayus et al., 2017; Frih et al., 2017; Mahjoob et al., 2016; Najafi et al., 2014; Masoumy et al., 2013). Intervention duration ranges from 24 hours to 24 weeks, and treatment frequency varies from every five hours to every one, three, five, or seven days a week (Jayus et al., 2017; Frih et al., 2017). Anxiety is typically assessed through questionnaires, but some studies use psychophysical measurements like EEG (Zulkurnaini et al., 2012).

A comprehensive literature review led researchers to hypothesize that Quran-based therapy could alleviate academic anxiety in students. The study focused on new students who face unique challenges related to academic anxiety. Duffy et al. (2020) found that new students exhibit a 33% anxiety prevalence, increasing to 39% by the end of their first year due to the significant transition from school to campus life. Stressors include financial concerns, forming new friendships, separation from family, and decreased social support in their living environment (Ribeiro et al., 2018).

Despite the growing interest in religion-based interventions for mental health, including the use of the Quran for anxiety reduction, existing studies exhibit several limitations. Most prior research has used random verses from the Quran without a specific focus on their relevance to anxiety, limiting the theoretical grounding of these interventions. Furthermore, studies often target diverse populations, such as elderly individuals, patients with medical conditions, and general adults, with limited emphasis on first-year university students—a group uniquely susceptible to academic anxiety. Additionally, many studies lack standardization in intervention protocols, including the duration, frequency, and specific verses used, leading to inconsistent findings.

This study addresses these gaps by introducing a rigorous research design and a targeted intervention. Specifically, it investigates the effects of listening to Ayat As-Sakinah and Surah Fussilat on academic anxiety, guided by Quranic theories (Bugha & Matu, 1999; Al-Jurani, 2018) and the academic anxiety framework (Huberty, 2012). Unlike previous studies, the intervention uses systematically selected Quranic verses linked to anxiety reduction and employs a standardized protocol involving bi-weekly 30-minute sessions over two weeks. Moreover, the study uniquely focuses on first-year students, addressing a critical yet underexplored demographic facing heightened academic challenges.

By combining theoretical, methodological, and practical advancements, this research bridges significant gaps in the literature and offers robust evidence for the efficacy of Quran-based interventions in reducing academic anxiety.

METHOD

Research Design

This study employed a quantitative research design, specifically an equivalent time-series three-group pretest-posttest randomized controlled trial. This design was used because the study involved three groups with three rounds of measurement, where the first experimental group received an intervention of listening to the verses of As-Sakinah, the second experimental group listened to the Surah Fussilat, and the control group did not receive any intervention. The equivalent time-series design is a research design with repeated pre-test, post-test, and intervention measures for each group, measured over a specific period (Neuman, 2014, p. 294). The equivalent time-series design included pre-test, post-test, and intervention measures for each group. Randomized controlled trials (RCTs) are considered the gold standard for studying causal relationships between interventions and outcomes because randomization eliminates many biases compared with other research designs. The RCT design was used to determine the most effective intervention for the experimental groups (Hariton & Locascio, 2018).

Population and Sample

The study population consisted of first-year psychology students at UIN Sunan Kalijaga. Sampling was performed using the purposive sampling method with the following criteria: (1) first-year students, (2) male or female, (3) having a moderate to high score on the academic anxiety scale, (4) not receiving any anxiety medication before or during the study, (5) having memorized fewer than 10 chapters of the Koran, and (6) agreeing to provide informed consent. The sample size was 39 participants divided into three groups of 13 participants each randomly using Microsoft Excel "RandBetween" formula. The sample size was determined using G*Power 3.1.9.4 with the following parameters: (1) effect size= 0.25, (2) α err prob= 0.05, (3) power (1-β err prob)= 0.8, (4) number of groups= 3, (4) number of measurements= 3, (5) corr among repeated measures= 0.5 and (6) nonsphericity correction ϵ= 1.

Research Instruments

An instrument was developed to measure academic anxiety based on Huberty's (2012) theory, which comprises three aspects: cognitive, physiological, and behavioral. The scale encompasses eight items, with three pertaining to the physiological aspect, four to the cognitive aspect, and one to the behavioral aspect. A Likert scale ranging from 1 to 5 was utilized for scoring, with scores below 13 indicating a very low level of academic anxiety; scores between 13 and 19 indicating a low level; scores between 19 and 24 indicating a moderate level; scores between 24 and 29 indicating a high level; and scores above 29 indicating a very high level. This instrument displayed a good content validity with an

Aiken's V coefficient of .95. An analysis on the preliminary testing data that was done on students outside Universitas Islam Negeri Sunan Kalijaga (n = 223) showed a goodness of model fit of .564, a CFI of 1.00, a TLI of 1.01, an RMSEA of 0.00, and a Cronbach's alpha of .710.

Intervention

The study, conducted between December 6th and 21st, 2022, aimed to assess the effectiveness of four treatments administered to freshman university students preparing for their semester exams after December 21, 2022. Treatments were given Tuesday to Friday, and alternative schedules were arranged for participants upon request. Sessions took place from 8:00 AM to 2:50 PM, comprising 14 sessions. Participants were allowed to choose their schedule and randomly assigned to listen to the As-Sakinah recitation of Surah Fussilat in 30-minute sessions accommodating two participants each.

In this study, audio recordings featuring the recitation of verses from As-Sakinah and Surah Fussilat in the Quran were utilized. As per Al-Jurani (2018, p. 135-132), the verses of As-Sakinah can be found in Surah Al-Baqarah verse 248, At-Taubah verse 26, At-Taubah verse 40, Al-Fath verse 4, Al-Fath verse 18, and Al-Fath verse 26. Surah Fussilat, noted by As-Sa'di (2003, p. 711), is a Meccan surah comprising 54 verses. To minimize potential variables like recitation style or tone impacting academic anxiety, both sets of verses were recited by the same chosen Quranic reciter, Ahmad bin Abdul Aziz An-Nufais. The audio recordings used in the intervention consisted of Ayat As-Sakinah and Surah Fussilat, both recited by Ahmad An-Nufais (2020a, 2020b).

The intervention consisted of four distinct phases. Initially, participants entered the intervention room and were given 2 to 5 minutes to stabilize their heart rate. Subsequently, each participant's heart rate was assessed to verify the intervention's efficacy. Following this, participants listened to Quranic recitation for 30 minutes, with the specific intervention type administered according to predetermined specifications. Finally, after completing the recitation, participants' heart rates were measured again as a final check to confirm the effectiveness of the intervention.

The decision to establish a duration and frequency of 30-minute sessions conducted twice a week over a two-week period was made with careful consideration of several key factors. This structure was designed to achieve a balance between theoretical rigor, practicality, and the neurophysiological mechanisms involved in anxiety reduction.

The theoretical foundation of the intervention is grounded in research highlighting the therapeutic effects of Quranic recitation. Al-Jurani (2018) underscored the importance of repeated and sustained exposure to Quranic verses, which amplify their calming influence over time. A two-week period was chosen to ensure participants received sufficient exposure to produce measurable reductions in anxiety while avoiding the risk of fatigue or disengagement.

Insights from previous studies also informed this decision. Research by Mahjoob et al. (2016) and Babamohamadi et al. (2017) demonstrates that Quranic recitation for durations of 15 minutes and 20 minutes, respectively, is effective in alleviating anxiety. Building on and validating these findings, the current study adopts Quranic recitation sessions lasting 20–30 minutes. This slightly extended duration aims to explore whether longer exposure enhances the therapeutic benefits observed in previous research while maintaining consistency and efficiency.

Practical considerations for participants played a significant role as well. The 30-minute session length strikes an ideal balance, offering enough time for meaningful engagement with Quranic recitation while remaining manageable for participants. The twice-weekly schedule was chosen to ensure regular interaction with the intervention, while accommodating the academic commitments of first-year students, thus minimizing potential disruptions to their daily routines.

Additionally, neurophysiological evidence supports this design. Studies such as Shekha et al. (2013) show that consistent, moderate exposure to calming stimuli like Quranic recitation can regulate stress-related physiological responses, including heart rate and alpha brain wave activity. The two-week duration provides a sufficient timeframe for these cumulative benefits to manifest.

By integrating these considerations, the intervention was structured to be both scientifically robust and practically feasible. This thoughtful design maximizes its potential to effectively reduce academic anxiety among the target population, ensuring that the intervention is both impactful and sustainable.

Data Collection Procedure

The initial post-test data collection to assess academic anxiety occurred after participants received the first two interventions. Subsequently, the second post-test data collection took place after participants experienced all four interventions. The entire measurement process, from pre-test to post-test, utilized Qualtrics.com. An assistant, trained comprehensively in the intervention process, executed all intervention procedures from start to finish. The assistant, unaware of the research objectives and characteristics of interventions, did not participate in randomly assigning participants to groups.

Throughout the study, participants remained unaware of distinctions between interventions in each group and the research objectives. After several weeks, the researcher conducted a debriefing session to clarify research objectives and disclose outcomes to the participants.

Data Analysis

The initial phase of the analysis involved a descriptive examination of score differences among the various groups at each assessment point, including pre-test, post-test, and post-test. Before hypothesis testing, data normality was assessed with a Q-Q plot, sphericity with Mauchly's W, and homogeneity of variances with Levene's test. Subsequently, repeated measures ANOVA was used to investigate the impact of the intervention on interaction, main, and between-subject effects. Finally, post-hoc tests and estimated marginal means were employed to assess the efficacy of the intervention at each assessment point.

RESULT

Desciptive analysis and assumptions testing

Table 1 shows that the sample size (N) in each group was 13. The mean academic anxiety scores for the first experimental group in the pre-test, post-test, and second post-test were 26.0 (sd = 2.92), 26.4 (sd = 2.63), and 24.8 (sd = 3.77), respectively. Accordingly, the second experimental

group also showed a declining trend in anxiety from pre-test (mean = 25.2, SD = 2.65), post-test (mean = 24.2, SD = 4.23), and second post-test (mean = 20.8; SD = 2.82). Unsurprisingly, the academic anxiety level of the control group in the pre-test (mean = 25.1, SD = 2.93) was lower than that of the post-test (mean = 25.1, SD = 2.33) and the second post-test (mean = 26.9, SD = 4.48).

The normality assumption was evaluated using Q-Q plot analysis. The results show that the residuals of the data were normally distributed. An analysis of Mauchly's W (p>.428) also showed that the variance of all conditions was equal; the assumption of sphericity was met. All variances across conditions were homogeneous in the pre-test (F (2,36)=.148, p>.0863), post-test (F(2,36)=1.355, p>.271), and second post-test (F (2, 36) = 1.293, p>.287).

Hypothesis testing

Table 2. The interaction effect, as presented in Table 2, revealed that the manipulations were significantly effective in reducing academic anxiety (F (4,72)=6.83, p<.001, η^2p=.275). This indicates a significant interaction within (pre-test vs. post-test vs. second post-test) and between (experiment group 1 (as-sakinah) vs. experiment group 2 (Fussilat) vs. control group) subject effects on academic anxiety. The effect size for the interaction effect was 27.5% (η^2p=.275), indicating that 27.5% of the variance in academic anxiety can be attributed to the interaction between within- and between-subjects design.

Table 3. The main effect table shows that there was a slight significant difference in anxiety across all conditions (F(2,72)=3.23, p<.045, η2p=.082). Owing to the small effect size (8,2%), researchers should conduct post-hoc analysis to carefully infer a conclusion.

Table 4. The results of the between-subject effect (F(2,36)=3.16, p=0.054, η2p=0.149) indicated no significant differences between the three experimental groups: the first group was exposed to Ayat As-Sakinah, the second group was exposed to Surah Fussilat, and the third group did not receive any intervention. However, the moderate effect (14,9%) indicated that a detailed analysis of each group vs. condition should not be overlooked.

Table 1. Descriptive analysis of academic anxiety score

		Pretest		Posttest-1		Posttest-2	
		M	SD	M	SD	SD	M
Experimental-I	13	26.0	2.92	26.4	2.63	24.8	3.77
Experimental-II	13	25.2	2.65	24.2	4.23	20.8	2.82
Control	13	25.1	2.93	25.1	2.33	26.9	4.48

Table 2. Interaction Effect Analysis

	Sum of Squares	df	Mean Square	F	p	η^2p
Score*Type of Recitation	149.9	4	37.47	6.83	<0.001	0.275
Residual	395.3	72	5.49			

Table 3. Main Effect Analysis

	Sum of Squares	df	Mean Square	F	p	η^2p
Score	35.4	2	17.72	3.23	0.045	0.082
Residual	395.3	72	5.49			

Table 4. Between Subjects Effects Analysis

	Sum of Squares	df	Mean Square	F	p	η^2p
Type of Recitation	134	2	66.9	3.16	0.054	0.149
Residual	763	36	21.2			

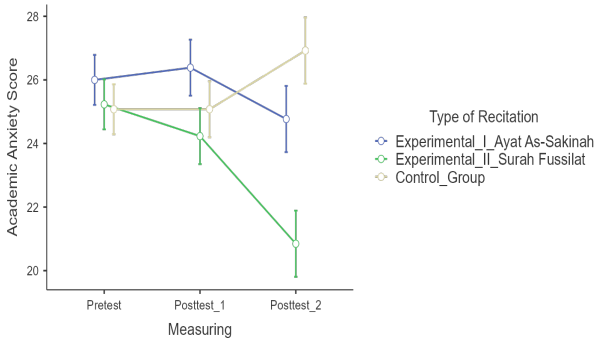


Figure 1. Estimated Marginal Means

According to the estimated marginal means plot, all the experimental groups showed a similar tendency. Academic anxiety levels in the first and second experimental groups declined. However, for experimental group one (as-sakinah), the decrease in anxiety was not significant. On the other hand, the second experimental group showed significantly lower levels of anxiety in the posttest and second posttest. A remarkable trend was observed in the control group. The participants in this group had increased levels of anxiety. It should be noted that all students faced a similar problem, which was an exam coming near. Hence, although both within-subject and between-subject effects showed almost no significant difference, the overall model suggests otherwise.

DISCUSSION

The results of the study showed that the control group experienced a non-significant increase in academic anxiety scores from the pre-test to the second post-test, with a mean difference of -1.846, Ptukey > 0.434. This means that the control group did not experience a significant decrease in their academic anxiety scores. The first experimental group experienced a non-significant decrease in academic anxiety scores from the pre-test to the second post-test, with a mean difference of 1.231 and Ptukey > 0.867. The second experimental group experienced a significant decrease in academic anxiety scores from the pre-test to the second post-test, with a mean difference of 4.385 (Ptukey < 0.001). Based on these results, it can be concluded that listening to Koranic recitation can reduce students' academic anxiety.

Based on this assumption, the As-Sakinah verse is believed to be more effective than other verses in reducing academic anxiety. Al-Jurani (2018, p. 38) said that listening to the As-Sakinah verse is more effective in reducing sadness, melancholy, anxiety, depression, sorrow, tension, worry, etc., especially if this verse is repeated. However, the results of this study were different, where the first experimental group that listened to Koranic recitation with the As-Sakinah verse experienced a non-significant decrease in academic anxiety, with a mean difference of 1.231, Ptukey > 0.867. Meanwhile, the second experimental group that listened to Koranic recitation with Surat Fushilat experienced a significant decrease in academic anxiety, with a mean difference of 4.385 (Ptukey < 0.001). The control group experienced an increase in the mean score of academic anxiety from pre-test to the second post-test, which was 25.1 to 26.9, with a mean difference of -1.846, Ptukey > 0.434. This shows that the decrease in academic anxiety due to listening to Koranic recitation is not influenced by the content of the verse, but rather by the individual process of listening to Koranic recitation itself. Hashim et al. (2017) explained that the effect of listening to the Koran can be felt by individuals, even if they do not understand its meaning at all. According to Jabbari et al. (2017), their research findings indicated that listening to murottal can reduce anxiety significantly, even the participants do not understand the meaning of the verses being recited in the murottal.

The results of this study show that listening to the recitation of the Koran has an effect on reducing academic anxiety among students, with an effect size of $\eta 2p=0.275$. This indicates that listening to the recitation of the Koran reduced academic anxiety by 27.5 %. According to Richardson (2011), the small, medium, and large effect sizes were 0.10, 0.25, and 0.50, respectively. Based on this study, it can be concluded that the effect size of listening to the recitation of the Koran on reducing academic anxiety among students is at a medium level.

The current study aligns with prior research by Oktarosada et al. (2022), Septadina et al. (2021), Setyawan et al. (2021), Irmawati et al. (2020), and Aisyah and Istikhomah (2019), indicating that listening to Koranic recitation significantly reduces academic anxiety. Recent findings from Che Wan Mohd Rozali et al. (2022) suggest that Koranic recitation reduces anxiety, depression, and improves sleep quality. Ruby, Rahim, and Shaheen's (2022) study shows that listening to murottal significantly enhances sleep quality, attributed to increased alpha waves during Koranic recitation (Ghiasi & Keramat, 2018). Zulkurnaini et al. (2012) found a 12.67% increase in brain alpha wave activity with Koran listening, surpassing classical music's 9.96%. Al-Galal and Alshaikhli (2015) found Koranic recitation increases alpha waves more than music or reading books. Jalaudin and Amin (2019) reported higher alpha wave increase with murottal Koran than with music, leading to relaxation and stress reduction (Zulkarnaini et al., 2012; Al-Galal & Alshaikhli, 2015; Jalaudin & Amin, 2019).

Ghiasi and Keramat (2018) noted that Koran readings increase endorphin levels in the brain. Azis et al. (2015) found elevated beta-endorphin levels after listening to Koranic verses, providing positive effects such as body relaxation, activating the dopaminergic/reward system, increasing motivation, mental well-being, and alleviating pain and stress. Endorphins stimulated from the amygdala to the body increase the stress threshold, eliminate negative emotions, and induce a sense of calm (Ghiasi & Keramat, 2018).

Koran has a positive effect in increasing serotonin levels in an individual (Ishak et al., 2021). Jones et al. (2020) explained that an increase in serotonin can improve mood, reduce anxiety, and enhance sleep quality. In a systematic literature review, Svob et al. (2016) reported that serotonin enhances attention, focus, working memory, decision-making, and reversal learning.

Listening to the Koran readings can improve cognitive function and mitigate the effects of academic anxiety. Julianto et al. (2016) found that listening to Koran can improve concentration. Suteja Putra et al. (2018) conducted an experimental study and found that listening to Koran can improve short-term memory abilities. This finding was reinforced by Hussain (2021), who found that listening to Koran readings could improve short-term memory and reduce mood disturbances.

These studies suggest that listening to the Koran can be beneficial in addressing the cognitive aspects of academic anxiety. Individuals who suffer from academic anxiety often experience a decline in their ability to recall information, concentrate, focus, and solve problems. However, these issues can be mitigated by increasing serotonin levels, as serotonin has been shown to improve attention, focus, working memory, decision-making, and reversal learning (Svob, Pivac, & Seler, 2016).

The insignificance of listening to As-Sakinah verses in this study serves as evidence that the claim made by Al-Jurani (2018) in his book cannot yet be concluded as effective in reducing anxiety. Furthermore, there is a lack of prior research on the effectiveness of As-Sakinah verses in alleviating anxiety, particularly academic anxiety. This highlights the need for further studies to validate the findings regarding the potential of listening to As-Sakinah verses in reducing anxiety, especially academic-related anxiety.

The findings of this study provide significant theoretical contributions to the field of emotion regulation and neurophysiology, particularly in the context of culturally specific interventions. The results demonstrate that listening to Quranic recitation for a duration of 20–30 minutes leads to a measurable reduction in academic anxiety, aligning with theories on the calming effects of consistent auditory stimuli in stress regulation. Specifically, this supports neurophysiological models indicating that rhythmic auditory inputs, such as Quranic recitation, enhance alpha brain wave activity, which is associated with a state of relaxation and reduced arousal (Shekha et al., 2013).

Furthermore, this study extends prior research by Mahjoob et al. (2016) and Babamohamadi et al. (2017), which utilized shorter recitation durations of 15–20 minutes. The observed effectiveness of slightly extended durations (20–30 minutes) in the present study suggests that the therapeutic impact of Quranic recitation may

benefit from cumulative exposure. This finding contributes to the refinement of intervention protocols for future applications, emphasizing the importance of optimizing session durations to balance feasibility with therapeutic efficacy.

The differential impact observed between the recitation of Surah Fussilat and Ayat As-Sakinah also provides a novel contribution to the discourse on the therapeutic qualities of Quranic verses. While Al-Jurani (2018) highlighted the specific calming effects of As-Sakinah verses, the significant reduction in anxiety seen with Surah Fussilat suggests that other factors, such as the rhythmic qualities or phonological structure of the recitation, may play a critical role. This insight opens avenues for further exploration into the characteristics of Quranic recitation that optimize its psychological benefits, offering a nuanced understanding of its impact on emotional regulation.

Moreover, the findings underscore the relevance of integrating religious and culturally tailored interventions into modern psychological practices. By demonstrating the efficacy of Quranic recitation as a non-pharmacological approach, this study contributes to the broader theoretical framework of culturally sensitive mental health interventions, supporting their inclusion as viable complements to conventional therapeutic strategies.

In summary, the present research advances theoretical understanding by not only confirming the neurophysiological and emotional benefits of Quranic recitation but also providing empirical evidence to refine the parameters of its application. This contributes to the evolving discourse on the intersection of cultural, spiritual, and psychological approaches to mental health.

The findings of this study highlight the potential of Quranic recitation as a viable and accessible intervention for addressing academic anxiety among university students. Academic institutions, particularly those in culturally and religiously diverse settings, can integrate this intervention into their mental health support services to provide an effective, non-pharmacological approach to anxiety management. The adoption of this intervention by universities can provide a dual benefit: it offers an empirically validated method to reduce academic anxiety while promoting a holistic approach to student mental health that respects and integrates cultural and spiritual values. Future studies could focus on developing standardized protocols for implementation and evaluating the scalability of such interventions in diverse academic environments.

The current investigation was not without its limitations, which must be taken into account when assessing the validity of the findings. Firstly, the researcher was unable to ensure that all participants attentively listened to the Koran recitation, as a number of them were observed to have dozed off during the session. Secondly, the room's air conditioning was occasionally shut down due to exposure to water. Lastly, the pre-to post-test measurement was based on self-reporting, and the study's population was limited to first year psychology students only. In conclusion, the results of this study provide evidence that listening to Koran recitation has a significant effect in reducing academic anxiety among new psychology college students.

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