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Modified breathing relaxation in OSCE participants: A randomized controlled trial

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Abstract

Background: Academic examinations, especially practical exams such as OSCE, often trigger high levels of anxiety among nursing students. Anxiety arises from environmental pressure, limited time, and strict regulations, which negatively affect students' performance. Non-pharmacological interventions, particularly breathing relaxation techniques combined with spiritual elements, are considered effective to reduce anxiety before examinations.

Purpose: To identify the effect of modified deep breathing relaxation techniques with *dzikr* on the anxiety levels of nursing students facing OSCE at Muhammadiyah University of Sukabumi.

Method: This research was a randomized control trial with parallel group design. A total of 36 nursing students were recruited and divided equally into intervention and control groups using simple random sampling. The intervention group received modified deep breathing relaxation combined with *dzikr* prior to OSCE, while the control group did not receive the intervention. Anxiety was measured using the Zung Self Anxiety Scale (ZSAS) before and after the OSCE. Data were analyzed using Shapiro-Wilk, Levene test, paired t-test, independent t-test, and Cohen's d.

Results: The findings showed a significant reduction in anxiety in the intervention group, with the mean score decreasing from 66.72 to 53.72 ($p = 0.000$). Conversely, the control group experienced an increase in anxiety, from 43.17 to 48.39 ($p = 0.017$). The difference between groups was statistically significant ($p = 0.049$) with a medium effect size (0.682).

Conclusion: Modified deep breathing relaxation combined with *dzikr* is effective in reducing anxiety among OSCE participants. Nursing education institutions are encouraged to apply this technique as part of routine preparation to help students manage anxiety before practical examinations.

Keywords : Anxiety; Deep Breathing Relaxation Technique; *Dzikr*; OSCE.

INTRODUCTION

Education in nursing is a planned effort to develop self-potential through nursing knowledge so that it can be applied in professional services in the form of bio-psycho-socio-spiritual, aimed at individuals, families, groups, and society, both healthy and sick, which covers the entire process human life with the aim of to change through various assessment methods. There are various kinds of evaluation methods, which are intended to evaluate the teaching and learning process according to competence. Competencies that need to be possessed are cognitive, holistic, and

skills (Herlianita, & Pratiwi, 2012). Laboratory practicum provides an understanding of skills procedures and mentoring processes is a significant step in assessing skills.

Objective Structured Clinical Examination (OSCE) and Objective Structural Clinical Assessment (OSCA) are appropriate learning evaluation methods in student clinical assessment. The most widely used evaluation method is the OSCE method. This OSCE has received much attention because of its high effectiveness, credibility, objectivity, relevance of

skills acquired, fairness, motivation to learn, and satisfaction of lecturers and students (Eldarir, Nagwa, & Hamid, 2013). However, on the strength side, OSCE also has weaknesses, namely 70% of students experience anxiety, significantly affecting student achievement. Nursing students feel anxious because there is much pressure from the surrounding environment, limited time given by ringing the bell (Mantika, Rochdiat, Syafitri, & Yogyakarta, 2019). The emergence of feelings of anxiety and tension caused by strict regulations (Sari & Dewi, 2018).

Academic anxiety is a type of anxiety that is often experienced, especially by students (Kusumawardhani, Prihartanti, & Karyani, 2014). Academic anxiety is a feeling of danger, fear and tension obtained because of the pressure in a person's place of education. Anxiety is very worrying for students, according to research of Mohebi et al., (2012) that some students with academic anxiety have committed suicide. The anxiety rate in Indonesia was 11.6% and it was estimated that 8-22% were teenagers or college students (Budiarto, Nugrahayu, & Riastiti, 2021). That students who experienced anxiety (17.9%), mild anxiety (21.6%), moderate anxiety (21.6%), severe anxiety (3.6%) (Yuhelrida, Andriani, & Sofya, 2016). The feelings of anxiety become a complication because it will have an essential role in the level of self-confidence and assessment of student competence (Stunden, Halcomb, & Jefferies, 2015). The students of semester 2 with a percentage of 47% affective response, and 44% percentage of somatic symptoms while semester 4 students with a rate of 47% affective response and 40% percentage of somatic symptoms (Dewi & Pusparatri, 2016). The somatic symptoms of students include feeling hot in the face, often feeling dizzy, back or neck pain, abdominal pain, tingling, palpitations, feeling of always wanting to urinate, and loss of appetite. The above has the impact of anxiety for students who face OSCE so that it ends in exam results that are not optimal or remedial occurs due to lessons that were previously unable to recall (Mantika et al., 2019).

Anxiety in students can affect student competence, even though this anxiety is only temporary, considering that the assessment of student competence is determined in the OSCE process. There are several ways to reduce anxiety: pharmacological therapy (using drugs) and non-

pharmacological therapy (without drugs). Various non-pharmacological treatments to reduce anxiety levels have emerged, such as; aromatherapy, relaxation techniques, music therapy and much more (Mahdavi, Gorji, Gorji, Yazdani, & Ardebil, 2013). Literature study showed that all non-pharmacological therapies (listening to Al-Quran reading, mindfulness-based stress reduction (MBSR), peppermint aromatherapy, relaxation techniques and music) can reduce anxiety in college students (Gerliandi, Pratiwi, & Agustina, 2021). Among these therapies, the therapy that is easy to do is breathing relaxation techniques.

Deep breathing relaxation technique is a form of nursing care, where the nurse will provide guidance and training to the client to perform effective deep breathing so that the pulmonary ventilation capacity increases (Rasyidin & Pratiwi, 2022). Deep breathing relaxation techniques can relax muscle spasms caused by an increase in prostaglandin reactions, can stimulate the body to release endogenous opioids, namely enkephalin and endogen, stabilize breathing, blood pressure and pulse, decrease oxygen consumption and increase alertness. They are relaxed, awake and peaceful. The effect deep breathing relaxation will be more effective if it is modified by remembering Allah (dhikr) (Mawardika, Rahmawati, & Kurniawati, 2020).

The attitude of the exam supervisor, the atmosphere of the exam influenced students' anxiety in dealing with laboratory test skills. Factors that influence anxiety include OSCE examiners, limited time, a quiet and tense environment, student skills and feelings of worry about not graduating (Budi, Wardaningsih, & Afandi, 2016). This study aimed to identify the effect of modification of deep breathing relaxation therapy on anxiety.

RESEARCH METHOD

This study employed a randomized clinical trial with a parallel group design to examine the effect of modified deep breathing relaxation combined with *dzikr* on nursing students' anxiety before the OSCE at Muhammadiyah University of Sukabumi. The research was conducted in the university laboratory from November 1–15, 2023, after obtaining ethical approval from the Ethics Committee (No. 472/F0/A/2022). The population consisted of sixth-semester nursing students registered as OSCE

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participants, with a total of 36 respondents selected through simple random sampling. They were divided into two groups: the experimental group (n = 18) received deep breathing relaxation combined with *dzikir* for approximately 10 minutes before the exam, while the control group (n = 18) did not receive the intervention. The intervention was guided directly by the researcher through verbal instruction without the use of additional tools such as speakers or headsets.

Anxiety levels were measured using the *Zung Self Anxiety Scale (ZSAS)*, which consists of 20 items with a scoring range of 20–80. This instrument has been tested for validity ($p < 0.05$) and reliability ($\alpha = 0.658$). Data analysis was performed using IBM SPSS 22 with the Shapiro-Wilk test, Levene test, paired t-test, independent t-test, and Cohen's d. A p-value < 0.05 was considered statistically significant.

RESEARCH RESULTS

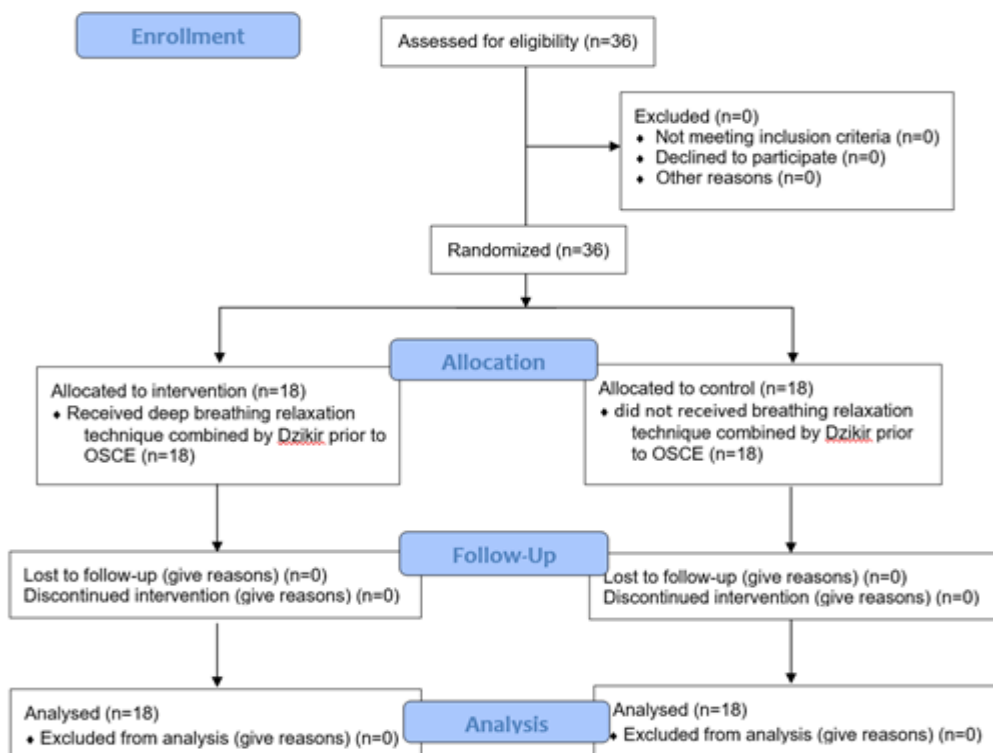


Diagram Consort Flow Diagram

Table 1. Students' Characteristics (N=36)

Variable	Group	
	Intervention (n = 18)	Control (n = 18)
Gender (n/%)		
Male	6/33.3	6/16.7
Female	12/66.7	12/33.3
Age (n/%)		
16–18 Years	5/27.8	0/0
19–21 Years	13/72.2	18/100

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Table 1 shows that based on gender, respondents were dominated by 12 female students (66.7%) and 6 male students (33.3%) in both the intervention and control groups. Based on age, most respondents were aged 19-21 years, namely 13 students (72.2%) in the intervention group and in the control group all were in the age range of 19-21, namely 18 (100%).

Table 2. Score of Anxiety (N=36)

Variable	Group		p-value	p-value	p-value	Effect Size
	Intervention (n=18)	Control (n= 8)				
Pre-test (Mean±SD)	66.72±3.214	43.17± 7.595	0.000	0.017	0.049	0.682
Post-test (Mean±SD)	53.72±5.879	48.39 ± 9.369				

Table 2 showed that the mean of anxiety decreased from 66.72 (3.214) to 53.72 (5.879) in the intervention group with p-value is 0.000. On the other hand, mean of anxiety increased from 43.17 (7.595) to 48.39 (9.369) in the control group with a p-value of 0.017. Additional data showed that the p-value of intervention vs control is 0.049, meaning there was a difference in score anxiety between intervention and control group with effect size is 0.682 (moderate).

DISCUSSION

The results of this study indicate that the sex of the respondents is dominated by female. Female are more susceptible to anxiety and stress, because these conditions are controlled by hormones, namely oxytocin and estrogen hormones (Perry & Potter, 2010). Gender is one of the variables that can make a difference in the incidence of male and female, the incidence of women's anxiety levels is two times more vulnerable than male, because female are more anxious about their inability and are more sensitive. The presence of the hormone estrogen makes female prone to experiencing anxiety criteria including eating disorders, sleep disturbances, feelings of guilt, and an increase or even a decrease in appetite.

The results of this study also reported that the majority of respondents involved in the study were aged 19-21 years where these respondents belonged to late adolescents. Adolescence is a transitional period when you start to think critically, but are still influenced by emotional conditions that are still unstable.

Adolescence also often experiences anxiety, physical and mental health and disruption of interpersonal relationships (Hamidah, Fauziah, & Novryanthi, 2022). Adolescence is at the transitional limit of an adult child's life, the body looks mature, but

if it is treated like an adult, it fails to show its maturity. There are not many experiences about adulthood because it is often seen in adolescents that there is anxiety, conflict, confusion, and conflict within themselves as well as how adolescents perceive the events they experience will determine their behavior in dealing with events.

The results of this study indicate that the pre-test data on all respondents in the intervention group had severe anxiety. Then, the pre-post-test different test in the intervention group showed that anxiety was significantly reduced when given an intervention with deep breathing relaxation modifications to mild anxiety (11.1%), moderate anxiety (83.3%) and severe anxiety to (5.6%). So it can be concluded that modifying breathing relaxation reduces anxiety by a p-value of 0.000 ($p < 0.05$). The occurrence of a decrease in anxiety explains that there is an improvement from the previous condition, where the lower the anxiety, the better the state of the respondent. The higher the level of student anxiety, the lower the level of student achievement, conversely the lower the level of student anxiety, the better the condition of the respondents which ultimately has an impact on the level of achievement (Kusumastuti, 2020).

Using deep breathing relaxation modifications proved effective in reducing and controlling the respondent's anxiety (Apriady, Yanis, & Yulistini, 2016). Previous researchers also said that deep breathing relaxation and remembrance can reduce exam students' anxiety levels, create a calm, non-threatening atmosphere, decrease adrenaline and cortisol hormones, and increase endorphins and serotonin hormones, creating pleasure and calm (Silvitasari & Hermawati, 2018). Breathing relaxation therapy accompanied by dhikr (based on Islam) could

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help reduce student anxiety with $p = 0.019$ ($p < 0.05$) (Syifa, Khairiyah, & Asyanti, 2019).

The results of this study showed that the pretest of all students in the control group had mild and moderate anxiety. Then, the pre-post-test different test in the control group showed increased anxiety without intervention. This result is in no significant change or decrease in the group was not given the intervention. Emotional conditions, both positive and negative, cause activation of the HPA (Hypothalamic Pituitary Adrenal) axis which stimulates the hypothalamus to increase the production of the hormone corticotrophin releasing factor (CRF) and then affect the pituitary to release adrenocorticotrophic hormone (ACTH). Its effect on the body depends on the stimulation that drives the process.

Anxiety and relaxation are the triggers for this process, so that patients who are anxious without deep breathing relaxation will find it difficult to be free from anxiety. The benefits of relaxation can reduce anxiety while the benefits of using belief include increasing faith. If the physical condition is relaxed, the psychological state is also calm. The stronger a person's belief is combined with the relaxation response, the greater the relaxation effect will be (Syifa et al., 2019).

Furthermore, the posttest difference test between groups showed that the deep breathing relaxation intervention significantly affected changes in anxiety. The results of this study that using modified breath relaxation as a non-pharmacological therapy has proven effective in reducing and controlling student anxiety (Silvitasari & Hermawati, 2018). Respondents need approaches such as relaxation techniques and spiritual care to reduce anxiety. The individuals who have faith can get up even in problems that cause unpleasant feelings, but still overcome their discomfort by performing rituals of worship (Ghorbani, Watson, Tahbaz, & Chen, 2017).

The sample size in this study is sufficient to answer the researcher's objectives, this is because the researcher refers to previous research as the basis for calculations. Apart from the sampling technique in this study using simple random sampling where the advantage of this method is that it facilitates the achievement of research objectives because it is based on the required criteria.

The difference between this study and other studies lies in the number of samples and research design. Using a sample without a control group for 4 days with the intervention of reading letters Al-

Fatihah, Al-Ikhlās, An-Nas, Al-falaq, Taha verses 25-28 while in this study using 36 samples with the control group, as for the intervention of reciting remembrance its *lahaula wala quwwata illa billah* (Silvitasari & Hermawati, 2018).

Anxiety as a body stressor has a negative impact on sufferers. Both healthy and sick conditions, anxiety is something that is not desirable. As an effort to prevent and overcome anxiety, the results of this study can be applied in society both in healthcare service and academic settings.

CONCLUSION

Deep breathing techniques as non-pharmacological therapy combined with dhikr as a spiritual approach have been proven effective in reducing anxiety in OSCE participants. On the other hand, OSCE participants who did not receive intervention experienced increased anxiety.

SUGGESTION

Nursing education institutions are advised to provide stress and anxiety management briefings to students, especially ahead of the implementation of the OSCE. The application of deep breathing relaxation techniques modified with dhikr can be considered as a routine intervention in clinical practice learning, especially to help students overcome anxiety. More research is needed to evaluate the long-term effectiveness of modified breathing relaxation therapy on the anxiety and academic outcomes of nursing students. And cross-disciplinary collaboration, such as with psychologists or campus counselors, should be done to provide comprehensive psychological support for students who experience severe anxiety.

REFERENCES

- Apriady, T., Yanis, A., & Yulistini, Y. (2016). Prevalensi ansietas menjelang ujian tulis pada mahasiswa kedokteran fk unand tahap akademik. *Jurnal Kesehatan Andalas*, 5(3).
- Budi, Y. S., Wardaningsih, S., & Afandi, M. (2016). Pengaruh Situasional terhadap Kecemasan Mahasiswa Program Studi D III Keperawatan Menghadapi Ujian Skill Laboratorium: Studi Mixed Methods. *IJNP (Indonesian Journal of Nursing Practices)*, 1(1), 77-83.

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- Budiarto, F., Nugrahayu, E. Y., & Riastiti, Y. (2021). Hubungan tingkat kecemasan dengan penyesuaian diri pada mahasiswa baru kedokteran umum saat pembelajaran online. *Jurnal Verdure*, 3(1), 18-24.
- Dewi, E., & Pusparatri, E. (2016). Gambaran gejala somatik kecemasan mahasiswa keperawatan semester awal saat melakukan OSCA. *Jurnal Komunikasi Kesehatan (Edisi 13)*, 7(02).
- Gerliandi, G. B., Pratiwi, R. D. N., & Agustina, H. S. (2021). Intervensi Non-Farmakologis Untuk Mengurangi Kecemasan Pada Mahasiswa: Sebuah Narrative Review. *Jurnal Keperawatan BSI*, 9(2), 234-245.
- Ghorbani, N., Watson, P. J., Tahbaz, S., & Chen, Z. J. (2017). Religious and psychological implications of positive and negative religious coping in Iran. *Journal of Religion and Health*, 56(2), 477-492.
- Hamidah, E., Fauziah, S., & Novryanthi, D. (2022). Hubungan Internet Addiction dengan Hubungan Interpersonal dan Kecemasan pada Remaja di Mts Persatuan Islam Cianjur. *Malahayati Nursing Journal*, 4(8), 2018-24.
- Eldarir, S. A., Nagwa, A., & Hamid, A. (2013). Objective structured clinical evaluation (OSCE) versus traditional clinical students achievement at maternity nursing: A comparative approach. *IOSR Journal of Dental and Medical Sciences*, 4(3), 63-68.
- Kusumastuti, D. (2020). Kecemasan dan prestasi akademik pada mahasiswa. *Analitika: Jurnal Magister Psikologi UMA*, 12(1), 22-33.
- Kusumawardhani, A., Prihartanti, N., & Karyani, U. (2014). *Pelatihan resiliensi untuk menurunkan tingkat kecemasan akademik pada remaja* (Doctoral dissertation, Universitas Muhammadiyah Surakarta).
- Mahdavi, A., Gorji, M. A. H., Gorji, A. M. H., Yazdani, J., & Ardebil, M. D. (2013). Implementing benson's relaxation training in hemodialysis patients: Changes in perceived stress, anxiety, and depression. *North American journal of medical sciences*, 5(9), 536.
- Mantika, N. I., Rochdiat, W., Syafitri, E. N., & Yogyakarta, U. R. (2019). Perbandingan Skor OSCE Mahasiswa Keperawatan Angkatan 2015, 2016 Dengan 2017 Berdasarkan Kecemasan. *Jurnal Medika Respati*, 14(4), 277-286.
- Mawardika, T., Rahmawati, I. N., & Kurniawati, W. (2020). Relaksasi pernafasan dan dzikir menurunkan tingkat kecemasan pada ibu hamil HIV positif: Literature review. *Jurnal Penelitian Dan Pemikiran Ilmiah Keperawatan*, 6(2), 101-108.
- Perry, A. G., & Potter, P. A. (2010). *Mosby's Pocket Guide to Nursing Skills and Procedures-E-Book*. Elsevier Health Sciences.
- Rasyidin, M. U., & Pratiwi, T. I. (2022). Penerapan Teknik Relaksasi untuk Menangani Kecemasan dalam Menghadapi Ujian pada Siswa. *Universitas Negeri Surabaya*, 12, 865-877.
- Sari, D. P., & Dewi, E. (2018). *Pengaruh Relaksasi Otot Progresif Terhadap Tingkat Kecemasan Mahasiswa Keperawatan Sebelum Osca* (Doctoral dissertation, Universitas Muhammadiyah Surakarta).
- Silvitasari, I., & Hermawati, H. (2018). Pengaruh Spiritual relaksasi terhadap kecemasan mahasiswa menghadapi ujian OSCA di STIKES AISIYAH Surakarta. *Infokes: Jurnal Ilmiah Rekam Medis dan Informatika Kesehatan*, 8(1).
- Stunden, A., Halcomb, E., & Jefferies, D. (2015). Tools to reduce first year nursing students' anxiety levels prior to undergoing objective structured clinical assessment (OSCA) and how this impacts on the student's experience of their first clinical placement. *Nurse Education Today*, 35(9), 987-991.
- Syifa, A., Khairiyah, M., & Asyanti, S. (2019). Relaksasi pernafasan dengan zikir untuk mengurangi kecemasan mahasiswa. *Jurnal Intervensi Psikologi*, 11(1), 1-10.
- Yuhelrida, Y., Andriani, P., & Sofya, P. A. (2016). Tingkat kecemasan dalam menghadapi Objective Structured Clinical Examination (OSCE): Studi pada peserta UKMP2DG Unsyiah periode II tahun 2016. *Journal Caninus Dentistry*, 1(4), 26-31.

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