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## Academic stress following progressive muscle relaxation among grade XII nursing students

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### Abstract

**Background:** Nursing practical examinations can impose substantial academic and psychological pressure on students. A preliminary study found that 87% of grade XII nursing students at Senior High School Citra Medika Sragen experienced symptoms of academic stress, including anxiety, sleep difficulties, headaches, and decreased concentration before examinations. Progressive Muscle Relaxation (PMR) is a simple, non-pharmacological intervention that may help reduce physical and psychological tension associated with academic stress.

**Purpose:** To determine the effect of Progressive Muscle Relaxation on academic stress levels among grade XII nursing students before practical examinations.

**Method:** This pre-experimental study employed a one-group pretest-posttest design without a control group. The sample consisted of 23 female grade XII nursing students selected using purposive sampling. Academic stress was measured using the Perceived Academic Stress Scale (PASS). Data were analyzed using the Shapiro-Wilk normality test and a paired-samples t-test.

**Results:** The mean academic stress score before the intervention was  $52.00 \pm 6.79$ , with the majority of respondents categorized as experiencing high academic stress (69.6%). Following the PMR intervention, the mean academic stress score decreased to  $45.04 \pm 3.50$ , with 65.2% of respondents categorized as experiencing low academic stress. The mean reduction in academic stress score was  $6.96 \pm 3.29$ , with a statistically significant difference between pretest and posttest scores ( $p < 0.001$ ).

**Conclusion:** Progressive Muscle Relaxation significantly reduced academic stress levels among grade XII nursing students before practical examinations. PMR may therefore be considered a simple non-pharmacological intervention for managing academic stress in nursing students.

**Keywords:** Academic Stress; Nursing Students; Practical Examination; Progressive Muscle Relaxation.

### INTRODUCTION

Late adolescence is a transitional phase toward adulthood characterized by increasingly mature cognitive, emotional, and social development. However, adolescents are also confronted with various demands and responsibilities, particularly in the educational context, which may increase their vulnerability to psychological stress. Academic demands may become a significant source of stress when students perceive the demands of their educational environment as exceeding their available coping resources. Academic stress has been

associated with academic demands, psychological consequences, and the need for appropriate coping strategies among students (Fiqih & Ratnawati, 2023). Stress may also affect learning-related functioning among nursing students, particularly their study skills self-efficacy and self-directed learning (Zhang, Guo, Wang, Li, Gui, Yang, & Zhang, 2024). Nursing education involves both theoretical learning and practical or clinical competency assessment. Practical examinations require students to demonstrate technical skills, accuracy, and adequate mental

preparedness within a limited assessment setting. These demands may increase psychological pressure and anxiety among students. Anxiety has been identified as an important concern among nursing students during their first objective structured clinical examinations (Eyüboğlu, Baykara, Çalışkan, Eyikara, Doğan, Aydoğan, & İstek, 2021). Similar concerns have been reported in medical students undergoing objective structured clinical examinations (Yalcin, Unal, Pirdal, & Karahan, 2024) and among nursing students participating in objective structured clinical examinations (Mojarrab, Bazrafkan, & Jaber, 2020). Nursing students may also experience stress and anxiety during clinical practice (Ortega, Pascual, & Araque, 2021). These findings indicate that clinical and practical assessments may represent important psychological challenges for students in health-related education.

Academic stress and examination-related anxiety may manifest through psychological and physical symptoms that interfere with students' functioning. Academic stress has been identified among nursing students, indicating that academic demands represent an important concern within nursing education (Manery, Zuneldi, Embisa, Ukratalo, & Pattimura, 2024). Relaxation techniques have also been investigated as an approach to managing academic stress and test anxiety among nursing students (Manansingh, Tatum, & Morote, 2019). Furthermore, various intervention strategies have been identified for reducing test anxiety among nursing students (Kaur Khaira, Raja Gopal, Mohamed Saini, & Md Isa, 2023). Therefore, appropriate non-pharmacological strategies are needed to help students manage psychological pressure associated with academic and examination demands. One non-pharmacological intervention that may be used to manage psychological stress is Progressive Muscle Relaxation (PMR). PMR is a relaxation technique involving the systematic tensing and relaxing of different muscle groups to reduce physical and psychological tension and promote relaxation. PMR, deep breathing, and guided imagery have been demonstrated to promote psychological and physiological states of relaxation (Toussaint, Nguyen, Roettger, Dixon, Offenbacher, Kohls, & Sirois, 2021). Previous research has demonstrated the potential of PMR to reduce stress among nursing students, including Jordanian nursing students and

undergraduate nursing students (Alhawtmeh, 2017; Gangadharan & Madani, 2018). PMR combined with nature sounds has also been associated with beneficial effects on anxiety and physiological parameters among nursing students (Korkut, Ülker, Çidem, & Şahin, 2021). Similarly, PMR has been reported to reduce stress among nursing students in Indonesia (Kusuma, Pratama, & Pratama, 2025).

The potential benefits of progressive relaxation have also been reported in other student populations experiencing performance-related psychological pressure. Progressive relaxation training was associated with reduced precompetition anxiety among collegiate student athletes (Liang, Chen, Zhang, Xu, Li, Li, & Liu, 2021). PMR has also been investigated in relation to anxiety surrounding a national examination try-out (Fauzi, Nugraha, & Hidayat, 2019). These findings suggest that relaxation-based interventions may be useful in situations involving academic, examination, or performance-related psychological pressure. Previous studies have specifically examined relaxation interventions in examination contexts among nursing students. Music therapy combined with PMR was reported to reduce stress before examinations and improve academic performance among nursing students (Gallego-Gómez, Balanza, Leal-Llopis, García-Méndez, Oliva-Pérez, Doménech-Tortosa, & Rivera-Caravaca, 2020). A muscle relaxation exercise programme was also associated with improvements in test anxiety and sleep quality among fourth-year nursing students before a comprehensive examination (Amro, Malak, & Ayed, 2025). PMR has further been reported to reduce anxiety among nursing students before critical care clinical training (Toqan, Ayed, & Khalaf, 2023). Among adolescents, PMR has also demonstrated potential for reducing stress, anxiety, and depression (Kabakcioğlu & Ayaz-Alkaya, 2024). Collectively, these findings suggest that PMR may be a practical non-pharmacological approach for students experiencing high academic and examination-related demands.

Despite these findings, evidence specifically addressing academic stress among grade XII nursing students immediately before practical examinations remains limited. This population is important because vocational nursing students at the Senior High School level face practical competency assessments while

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simultaneously undergoing the developmental transition of late adolescence. A preliminary study conducted at Senior High School Citra Medika Sragen found that 13 of 15 grade XII nursing students (87%) reported symptoms of academic stress before practical examinations. The reported symptoms included anxiety, sleep difficulties, headaches, irritability, and decreased motivation. These findings indicate the presence of academic stress among grade XII nursing students approaching practical examinations and highlight the need for an appropriate intervention to help manage stress in this population. Therefore, this study aimed to determine the effect of Progressive Muscle Relaxation on academic stress among grade XII nursing students before practical examinations.

## RESEARCH METHOD

This study used a quantitative approach with a pre-experimental one-group pretest-posttest design. The study population consisted of 90 grade XII nursing students at Senior High School Citra Medika Sragen, distributed across three classes with 30 students in each class. A total of 23 students were selected using purposive sampling based on the sample size determined using the Isaac and Michael formula. Participants received Progressive Muscle Relaxation (PMR) in a single session lasting 15 minutes. The intervention was administered by the researcher, who had been trained in the PMR procedure, in a designated classroom at the school. PMR was conducted after the students completed

their practical examination, and the posttest was administered immediately after the intervention to assess short-term changes in perceived academic stress. The intervention was implemented according to a standardized Standard Operating Procedure (SOP) to ensure consistency.

The research instruments consisted of the PMR intervention SOP and the Perceived Academic Stress Scale (PASS). The PASS is an 18-item instrument designed to assess perceived academic stress, with total scores ranging from 18 to 90. Scores of 18–45 indicate low academic stress, whereas scores of 46–90 indicate high academic stress. The PASS was used in accordance with its established measurement procedures, and its validity and reliability were considered based on the original instrument development and validation study. The Indonesian version used in this study should also be supported by the corresponding validity and reliability evidence, if available. Before the intervention, participants completed the PASS as a pretest, followed by the 15-minute PMR session and immediate posttest using the same instrument. Data were analysed using the Shapiro-Wilk test to assess data normality. Because the data met the normality assumption, a paired-samples *t*-test was performed to examine differences in academic stress scores before and after the PMR intervention. Statistical significance was set at  $p < 0.05$ . This study received ethical approval from the Health Research Ethics Committee of Universitas Muhammadiyah Purwokerto (No. KEPK/UMP/03/IV/2026).

## RESEARCH RESULTS

Table 1. Distribution of Respondent (N = 23)

| Variable                              | Results            |
|---------------------------------------|--------------------|
| <b>Age (n%)(Mean±SD)(Range)(Year)</b> | (17.8±0.42)(17-18) |
| 17                                    | 5/21.7             |
| 18                                    | 18/78.3            |
| <b>Gender (n%)</b>                    |                    |
| Male                                  | 0/0.0              |
| Female                                | 23/100.0           |
| <b>Pretest Stress Level (n%)</b>      |                    |
| Low                                   | 7/30.4             |
| High                                  | 16/69.6            |

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| Posttest Stress Level (n/%) |         |
|-----------------------------|---------|
| Low                         | 15/65.2 |
| High                        | 8/34.8  |

The mean age of the respondents was  $17.78 \pm 0.42$  years, with an age range of 17–18 years. Most respondents were 18 years old (18; 78.3%) and all respondents were female (23; 100.0%). Before the intervention, most respondents had a high level of academic stress (16; 69.6%), while 7 respondents (30.4%) had low academic stress. After the intervention, the proportion of respondents with low academic stress increased to 15 (65.2%), whereas those with high academic stress decreased to 8 (34.8%).

**Table 2. Mean Academic Stress Scores Before and After the Intervention (N = 23)**

| Variable | Mean  | Min | Max | SD   |
|----------|-------|-----|-----|------|
| Pretest  | 52.00 | 38  | 70  | 6.79 |
| Posttest | 45.04 | 36  | 58  | 3.50 |

Academic stress scores decreased after the intervention. The mean score decreased from  $52.00 \pm 6.796$  at pretest to  $45.04 \pm 3.509$  at posttest, indicating a reduction in academic stress following progressive muscle relaxation.

**Table 3. Shapiro-Wilk Normality Test of Academic Stress Scores (N = 23)**

| Variable | P-Value | Distribution |
|----------|---------|--------------|
| Pretest  | 0.051   | Normal       |
| Posttest | 0.925   | Normal       |

The Shapiro-Wilk test showed that both pretest and posttest academic stress scores were normally distributed, with p-values of 0.051 and 0.925, respectively ( $p > 0.05$ ).

**Table 4. Effect of Progressive Muscle Relaxation on Academic Stress (N = 23)**

| Variable | Mean $\pm$ SD    | Mean Difference $\pm$ SD | P-Value |
|----------|------------------|--------------------------|---------|
| Pretest  | $52.00 \pm 6.79$ | $6.96 \pm 3.29$          | <0.001  |
| Posttest | $45.04 \pm 3.50$ | -                        | -       |

Academic stress scores decreased from  $52.00 \pm 6.79$  before the intervention to  $45.04 \pm 3.50$  after the intervention, with a mean difference of  $6.96 \pm 3.29$ . The difference was statistically significant ( $p < 0.001$ ), indicating that progressive muscle relaxation significantly reduced academic stress among the participants.

## DISCUSSION

Most respondents were 18 years old (78.3%), which falls within the late-adolescent stage. At this developmental stage, students experience increasing emotional and cognitive maturity while preparing for future educational, occupational, and social roles. At

the same time, educational demands may become an important source of psychological pressure. Academic stress may emerge when students experience difficulty managing academic requirements and associated expectations (Fiqih & Ratnawati, 2023). Stress among nursing students may also have implications for learning-related processes, including study skills self-efficacy and self-directed learning (Zhang et al., 2024).

All respondents in the present study were female. This finding reflects the composition of the study sample and should be interpreted cautiously because the study did not include male students. Therefore, the findings may not be directly generalizable to

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nursing students of both sexes. Previous research has identified test anxiety as an important concern among nursing students and has examined various strategies for managing examination-related anxiety (Kaur Khaira et al., 2023). However, because the present study did not compare academic stress according to sex, no conclusion regarding sex-based differences in stress can be drawn from the present findings.

Before the intervention, 69.6% of respondents were categorized as experiencing high academic stress. Based on observations and respondents' descriptions, students primarily used individual coping strategies, such as extending study hours, staying up late, sharing concerns with friends, withdrawing from social interactions, reducing sleep duration, and suppressing anxiety. These strategies appeared to be insufficient for managing the academic pressure experienced before practical examinations, as reflected by the relatively high proportion of students in the high-stress category. Academic stress has also been reported among nursing students, indicating that academic demands represent an important concern within nursing education (Manery et al., 2024). Relaxation techniques have previously been examined as a strategy for managing academic stress and test anxiety among nursing students (Manansingh et al., 2019).

The practical examination context may further contribute to psychological pressure. Nursing students are expected to demonstrate technical skills accurately within a limited assessment situation. Anxiety has been reported among nursing students during their first objective structured clinical examinations (Eyüboğlu et al., 2021). Similar concerns have been reported among medical students undergoing objective structured clinical examinations (Yalcin et al., 2024) and among nursing students in relation to objective structured clinical examination performance (Mojarab et al., 2020). Stress and anxiety have also been observed among nursing students during clinical practice (Ortega et al., 2021). These findings support the relevance of examination and clinical assessment as potential sources of psychological pressure among students in health-related education.

Following the 15-minute Progressive Muscle Relaxation intervention, the proportion of respondents categorized as having low academic stress increased

from 30.4% at pretest to 65.2% at posttest, while the proportion categorized as having high academic stress decreased from 69.6% to 34.8%. PMR involves systematically tensing and relaxing different muscle groups and is intended to promote physical and psychological relaxation. Previous evidence indicates that PMR and other relaxation techniques can promote psychological and physiological states of relaxation (Toussaint et al., 2021). The relaxation response associated with PMR may therefore help students manage physical and psychological tension associated with stressful situations.

The reduction in academic stress observed in the present study is consistent with previous studies involving nursing students. Abbreviated PMR has been investigated among Jordanian nursing students and was associated with reduced stress (Alhawtmeh, 2017). PMR has also demonstrated beneficial effects on depression, anxiety, and stress among undergraduate nursing students (Gangadharan & Madani, 2018). Similarly, PMR combined with nature sounds has been associated with beneficial effects on anxiety and physiological parameters among nursing students (Korkut et al., 2021). Research conducted among nursing students in Indonesia also reported a reduction in stress following PMR (Kusuma et al., 2025). These findings provide supporting evidence for the potential application of PMR as a non-pharmacological strategy for managing psychological stress among nursing students.

The present findings are also consistent with studies conducted in examination and performance-related contexts. Music therapy combined with PMR was reported to reduce stress before examinations among nursing students and was associated with improved academic performance (Gallego-Gómez et al., 2020). A muscle relaxation exercise programme was also associated with improvements in test anxiety and sleep quality among fourth-year nursing students before a comprehensive examination (Amro et al., 2025). PMR has further been reported to reduce anxiety among nursing students before critical care clinical training (Toqan et al., 2023). These findings are relevant to the present study because practical examinations similarly require students to demonstrate performance under assessment pressure.

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Evidence from other populations also provides supporting evidence for the potential role of progressive relaxation in performance-related situations. Progressive relaxation training was associated with reduced precompetition anxiety among collegiate student athletes (Liang et al., 2021). PMR has also been examined in relation to anxiety associated with a national examination try-out (Fauzi et al., 2019). Although these studies involved different populations and stressors, their findings suggest that progressive relaxation may be useful in situations involving psychological pressure related to performance and evaluation.

The paired-samples *t*-test showed a *p*-value of  $<0.001$  ( $p < 0.05$ ), indicating a statistically significant difference in academic stress scores before and after the PMR intervention. This finding is consistent with previous evidence showing beneficial effects of relaxation interventions on stress and anxiety among nursing students. Relaxation techniques have been reported to reduce academic stress and test anxiety among nursing students (Manansingh et al., 2019). Similar beneficial effects have been reported following PMR among undergraduate nursing students (Gangadharan & Madani, 2018) and nursing students in Indonesia (Kusuma et al., 2025). These consistent findings suggest that PMR may have practical value as a non-pharmacological approach to managing stress among students experiencing academic and examination-related demands.

The findings also have implications for nursing education at the Senior High School level. PMR is a relatively simple non-pharmacological relaxation technique that can be implemented in an educational setting without requiring complex equipment. Its application before practical examinations may provide students with an opportunity to reduce psychological tension and improve their readiness for assessment. However, because the present study used a one-group pretest-posttest design without a control group, the observed reduction in academic stress should be interpreted as a significant pretest-posttest difference rather than definitive evidence of a causal effect. Other factors, such as changes in examination-related circumstances, individual coping, social support, or familiarity with the assessment, may also have contributed to the observed change.

Overall, the present study found a statistically significant reduction in academic stress scores

following a 15-minute PMR intervention. The findings, together with previous evidence from nursing students, adolescents, and examination-related settings, suggest that PMR may be a practical non-pharmacological strategy for managing academic stress among grade XII nursing students before practical examinations. Further research using randomized controlled designs, larger samples, and longer follow-up periods is recommended to strengthen the evidence regarding the effectiveness of PMR in this population.

## CONCLUSION

Before the intervention, most respondents (69.6%) were categorized as having high academic stress. Following the Progressive Muscle Relaxation intervention, most respondents (65.2%) were categorized as having low academic stress. The paired-samples *t*-test showed a *p*-value of  $<0.001$  ( $p < 0.05$ ), indicating a significant difference in academic stress levels before and after the intervention. Progressive Muscle Relaxation may therefore be considered an effective non-pharmacological intervention for reducing academic stress among grade XII nursing students preparing for practical examinations.

## REFERENCES

- Alhawtmeh, H. N. (2017). Effects of abbreviated progressive muscle relaxation on stress in Jordanian nursing students. *Doctoral dissertation, Kent State University*.
- Amro, M., Malak, M. Z., & Ayed, A. (2025). Effects of a muscle relaxation exercise programme on test anxiety and sleep quality among fourth-year nursing students before comprehensive examination in Palestine. *Counselling and Psychotherapy Research*, 25(1), e12831.
- Eyüboğlu, G., Baykara, Z. G., Çalışkan, N., Eyikara, E., Doğan, N., Aydoğan, S., & İstek, N. (2021). Effect of music therapy on nursing students' first objective structured clinical exams, anxiety levels and vital signs: A randomized controlled study. *Nurse Education Today*, 97, 104687.

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DOI: <https://doi.org/10.56922/mhc.v5i5.4314>

- Fauzi, J. H., Nugraha, E., & Hidayat, Y. (2019). The progressive muscle relaxation and try out of national exam to the level of anxiety. In *3rd International Conference on Sport Science, Health, and Physical Education (ICSSHPE 2018)* (pp. 26–30). Atlantis Press.
- Fiqih, A., & Ratnawati, V. (2023). Mengurai stres akademik mahasiswa tingkat akhir: Faktor pemicu, dampak dan strategi pengelolaan di Universitas Nusantara PGRI Kediri. In *Prosiding SEMDIKJAR (Seminar Nasional Pendidikan dan Pembelajaran)* (Vol. 6, pp. 755–765).
- Gallego-Gómez, J. I., Balanza, S., Leal-Llopis, J., García-Méndez, J. A., Oliva-Pérez, J., Doménech-Tortosa, J., & Rivera-Caravaca, J. M. (2020). Effectiveness of music therapy and progressive muscle relaxation in reducing stress before exams and improving academic performance in nursing students: A randomized trial. *Nurse Education Today*, 84, 104217.
- Gangadharan, M. P., & Madani, M. A. H. (2018). Effectiveness of progressive muscle relaxation techniques on depression, anxiety and stress among undergraduate nursing students. *International Journal of Health Sciences and Research*, 8(2), 155–163.
- Kabakcioğlu, N. K., & Ayaz-Alkaya, S. (2024). The effect of progressive muscle relaxation on stress, anxiety, and depression in adolescents: A quasi-experimental design. *Journal of Pediatric Nursing*, 78, 89–96.
- Kaur Khaira, M., Raja Gopal, R. L., Mohamed Saini, S., & Md Isa, Z. (2023). Interventional strategies to reduce test anxiety among nursing students: A systematic review. *International Journal of Environmental Research and Public Health*, 20(2), 1233.
- Korkut, S., Ülker, T., Çidem, A., & Şahin, S. (2021). The effect of progressive muscle relaxation and nature sounds on blood pressure measurement skills, anxiety levels, and vital signs in nursing students. *Perspectives in Psychiatric Care*, 57(4), 1782–1790.
- Kusuma, G. E. D., Pratama, A. A., & Pratama, A. A. (2025). Pengaruh terapi progressive muscle relaxation (PMR) untuk mengurangi stres pada mahasiswa jurusan keperawatan STIKes Buleleng dalam menghadapi beban SKS. *Bali Health Published Journal*, 7(1), 15–26.
- Liang, D., Chen, S., Zhang, W., Xu, K., Li, Y., Li, D., & Liu, C. (2021). Investigation of a progressive relaxation training intervention on precompetition anxiety and sports performance among collegiate student athletes. *Frontiers in Psychology*, 11, 617541.
- Manansingh, S., Tatum, S. L., & Morote, E. S. (2019). Effects of relaxation techniques on nursing students' academic stress and test anxiety. *Journal of Nursing Education*, 58(9), 534–537.
- Manery, D. E., Zuneldi, T., Embisa, Y. A., Ukratalo, A. M., & Pattimura, N. (2024). Gambaran tingkat stres akademik pada mahasiswa keperawatan STIKes Pasapua Ambon tahun 2024. *Jurnal Anestesi*, 2(3), 193–206.
- Mojarrab, S., Bazrafkan, L., & Jaber, A. (2020). The effect of a stress and anxiety coping program on objective structured clinical examination performance among nursing students in Shiraz, Iran. *BMC Medical Education*, 20(1), 301.
- Ortega, R. H., Pascual, J. L. G., & Araque, A. M. F. (2021). Impact of an intervention program with reinforcement on nursing students' stress and anxiety levels in their clinical practices. *Nurse Education in Practice*, 55, 103179.
- Toqan, D., Ayed, A., & Khalaf, I. A. (2023). Effect of progressive muscle relaxation exercise on anxiety among nursing students prior to critical care clinical training. *Journal of Public Health Research*, 12(2), 22799036231181668.

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DOI: <https://doi.org/10.56922/mhc.v5i5.4314>

- Toussaint, L., Nguyen, Q. A., Roettger, C., Dixon, K., Offenbächer, M., Kohls, N., & Sirois, F. (2021). Effectiveness of progressive muscle relaxation, deep breathing, and guided imagery in promoting psychological and physiological states of relaxation. *Evidence-Based Complementary and Alternative Medicine*, 2021(1), 5924040.
- Yalcin, B. M., Unal, M., Pirdal, H., & Karahan, T. F. (2024). The effect of a stress and anxiety coping programme on objective structured clinical exam performance in medical students: A randomised clinical trial. *Educational Psychology*, 44(8), 911–924.
- Zhang, X., Guo, L. L., Wang, Y., Li, Y., Gui, J., Yang, X., & Zhang, L. (2024). Effect of stress on study skills self-efficacy in nursing students: The chain mediating role of general self-efficacy and self-directed learning. *BMC Nursing*, 23(1), 839.

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