The Effectiveness of Group Counseling Using Relaxation Techniques in Reducing Learning Stress among First-Year University Students

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ABSTRACT

This study examined the effectiveness of group counseling using relaxation techniques in reducing learning stress among first-year students in Universitas Negeri Medan, during the 2024/2025 academic year. A quantitative approach with a one-group pretest-posttest quasi-experimental design was employed. Ten students from who met the criteria for learning stress were purposively selected. Data were collected using a 34-item learning-stress scale reported as valid and reliable. The intervention was delivered in four sessions, followed by a post-test. Data were analyzed descriptively and using the Wilcoxon signed-rank test. The mean stress score decreased from 101.70 at pre-test to 88.60 at post-test, representing a 13.10-point or 12.9% reduction. All participants showed lower scores, and the three participants initially classified as having high stress moved to the moderate category. The Wilcoxon test yielded W = 0 with an exact two-sided p-value of .002. The findings indicate that group counseling with relaxation techniques may help first-year students manage learning stress. However, because the design had no control group and the sample was small, the findings should be regarded as preliminary evidence rather than strong causal evidence.

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Introduction

Higher education places students in a learning environment characterized by more complex academic demands and greater expectations for independent self-management. During the transition to university, students must adjust to coursework, assessment systems, time management, performance expectations, and new social environments. Persistent demands that are perceived as exceeding one's coping capacity may develop into learning or academic stress. Bariyyah and Latifah (2015) showed that university students may experience academic stress as a response to educational demands, while Shahmohammadi (2011) identified examinations, extensive learning materials, academic work, and demanding schedules as potential sources of pressure. For first-year students, these demands are particularly important because academic pressures occur simultaneously with the adjustment process associated with entering university.

Learning stress is not merely an uncomfortable experience; it can affect how students engage in academic activities. Academic pressure may manifest as psychological tension, worry about assignments and academic outcomes, difficulty achieving a calm state, and physical or emotional responses. Nurcahyani and Fauzan (2016) positioned learning stress as a condition that can be addressed through counseling when pressure begins to interfere with learning functioning. Ali (2021) likewise demonstrated the relevance of relaxation techniques as an approach to reducing academic stress. Therefore, addressing learning stress requires interventions that do not focus solely on academic problem solving but also help students regulate the tension that emerges while facing academic demands.

Group counseling is one potentially relevant approach. Rasimin and Hamdi (2022) explain that group counseling uses group dynamics to facilitate problem resolution. In the context of learning stress, the group can provide interpersonal support, opportunities to share experiences, and a setting in which students can learn more adaptive responses to pressure. Within this context,

relaxation techniques can be used to reduce physical and psychological tension. Fatahilah et al. (2017) showed that relaxation training can reduce anxiety, while Nurcahyani and Fauzan (2016) found that relaxation techniques within behavioral group counseling were effective in reducing learning stress. These findings provide a rationale for combining relaxation with group dynamics as an intervention for learning stress.

The current state of the art indicates that group-counseling interventions for academic stress have been developed through several approaches. Ningtias et al. (2019), for example, used CBT-based group counseling incorporating stress inoculation training and cognitive restructuring to reduce academic stress. Putrikita and Sari (2021) reported an effect of group counseling on students' academic stress, while Pujowati et al. (2022) showed that solution-focused brief group counseling can strengthen psychological resources among students experiencing academic stress. In parallel, Pan et al. (2024) found through meta-analysis that mindfulness-based stress reduction has an effect on perceived stress among university students, while Alrashdi et al. (2024) reported benefits of online mindfulness-based interventions for psychological distress and well-being. Collectively, these findings demonstrate an empirical basis for group-based interventions and stress-regulation strategies, although the intervention mechanisms and participant characteristics vary.

Despite this progress, an important research gap remains. First, many counseling-based interventions for academic stress have focused on secondary-school students, whereas studies specifically testing group counseling with relaxation techniques among first-year university students remain limited. Second, previous studies have often emphasized cognitive restructuring, stress inoculation training, or problem solving as the principal intervention mechanisms, while the use of relaxation as a central component of group counseling among first-year university students has received less attention. Third, pretest-posttest intervention studies often emphasize mean differences, although category transitions and individual response patterns can provide additional information about how participants respond to an intervention. These gaps indicate the need for research that examines relaxation within a group-counseling context while documenting change at both the group and individual levels.

As a novel solution, this study positions relaxation techniques as an intervention component within group counseling for first-year university students experiencing learning stress. The novelty lies in integrating three elements: the context of first-year Guidance and Counseling students, group counseling incorporating relaxation techniques, and an evaluation framework that includes mean scores, individual changes, category transitions, and paired statistical testing. This approach is intended to provide context-specific empirical evidence regarding the use of relaxation techniques in university counseling services. Based on the background, state of the art, and research gap, this study aimed to examine the effectiveness of group counseling using relaxation techniques in reducing learning stress among first-year students in the Guidance and Counseling Study Program, Faculty of Education, Universitas Negeri Medan, during the 2024/2025 academic year.

Method

This study employed a quantitative approach with a one-group pretest-posttest quasi-experimental design. The design was used to compare learning-stress levels in the same participants before and after the intervention. Operationally, the study consisted of three main stages: baseline assessment (pre-test), group counseling using relaxation techniques, and post-intervention assessment (post-test). The intervention was delivered across four sessions as reported in the source manuscript. The design allows within-participant change to be examined; however, because it does not include a control group, it cannot fully rule out the influence of external factors.

The population comprised students in the Guidance and Counseling Study Program, Faculty of Education, Universitas Negeri Medan. The sample consisted of 10 students from the BK Reguler E 2025 cohort. Purposive sampling was used, with eligibility based on being a first-year student who demonstrated learning stress at the initial assessment. Purposive selection was intended to ensure that the counseling service targeted students with an identified need. Because the sample was small and drawn from a single class/group, the findings are interpreted contextually and are

not directly generalized to the wider student population.

The instrument was a 34-item learning-stress scale. The source manuscript reported that all items had been established as valid and reliable. Each item used a 1–4 scoring range, resulting in a theoretical minimum score of 34 and maximum score of 136. However, the source did not provide the validity and reliability coefficients, so no unsupported coefficients have been added. For interpretation, mutually exclusive categories were used: 102–136 = high, 68–101 = moderate, and 34–67 = low.

Data collection followed three stages. First, participants completed the learning-stress scale as a pre-test to establish baseline conditions. Second, the 10 eligible students received group counseling using relaxation techniques across four sessions. Third, after the intervention was completed, participants completed the same scale as a post-test to assess change. The source manuscript does not provide the duration of each session, the specific relaxation protocol, the sequence of session activities, or between-session exercises. These details have therefore not been reconstructed. For replication and publication purposes, such implementation details should be added if they are available in the researcher's records.

Data were analyzed descriptively and inferentially. Descriptive analysis included individual scores, total scores, means, minimum and maximum values, score changes, percentage reductions, and pretest-posttest category distributions. Inferential analysis used the Wilcoxon signed-rank test because the observations were paired within participants, the sample was small, and a nonparametric procedure was appropriate for examining paired differences without relying on a normality assumption. The null hypothesis stated that there was no difference in learning-stress scores before and after the intervention, whereas the alternative hypothesis stated that a difference existed. Statistical significance was set at $\alpha = .05$. In addition to the Wilcoxon statistic, the exact two-sided p-value and an effect-size estimate were reported to describe the magnitude of change.

Result and Discussion

Result

Pre-test results showed that all participants had moderate or high learning stress. Three participants—NON, N, and GS—were classified as high, with scores of 115, 114, and 102, respectively. The remaining seven participants were classified as moderate, with scores ranging from 95 to 101. The total pre-test score was 1,017, with a mean of 101.70.

After four sessions of group counseling using relaxation techniques, all participants showed lower scores. The total post-test score decreased to 886, with a mean of 88.60. Thus, the mean score decreased by 13.10 points or 12.9%. All participants were classified as moderate after the intervention. The three participants initially classified as high moved to the moderate category.

The largest individual reduction occurred for participant N, with a decrease of 36 points (31.6%), whereas the smallest reduction occurred for KHS, with a decrease of 3 points (3.1%). No participant showed an increase in stress. The consistent direction of change indicates that all participants improved, although the magnitude of change varied across individuals.

The Wilcoxon test produced a positive-rank sum of 0 and a negative-rank sum of 55, yielding $W = 0$. The exact two-sided p-value was .002, which is below $\alpha = .05$. Thus, learning-stress scores differed significantly before and after the intervention. The estimated effect size $r \approx .87$ indicates a large within-group change, although it must be interpreted cautiously because the study did not include a control group.

Table 1. Individual pre-test and post-test scores.

No.	Participant	Pre-test	Category	Post-test	Category	Decrease	Reduction
1	NON	115	High	95	Moderate	20	17.4%
2	N	114	High	78	Moderate	36	31.6%
3	GS	102	High	91	Moderate	11	10.8%
4	YSH	101	Moderate	90	Moderate	11	10.9%
5	NS	100	Moderate	86	Moderate	14	14.0%
6	FA	99	Moderate	92	Moderate	7	7.1%
7	GT	98	Moderate	87	Moderate	11	11.2%
8	KHS	97	Moderate	94	Moderate	3	3.1%
9	MRS	96	Moderate	83	Moderate	13	13.5%
10	HPS	95	Moderate	90	Moderate	5	5.3%

Table 2. Descriptive summary of learning-stress scores.

Measure	Pre-test	Post-test	Change
Total score	1,017	886	131-point decrease
Mean	101.70	88.60	13.10-point decrease
Minimum	95	78	17-point decrease
Maximum	115	95	20-point decrease

Table 3. Wilcoxon signed-rank test.

N	Positive ranks	Negative ranks	W	Exact p (two-sided)	Effect size r
10	0	55	0	.002	0.87

Discussion

The main finding was a consistent reduction in learning stress following group counseling with relaxation techniques. The mean score decreased from 101.70 to 88.60, a reduction of 13.10 points (12.9%). All participants had lower post-test than pre-test scores, and the three participants initially classified as having high stress moved into the moderate category. Thus, the change was evident not only in the group mean but also at the individual level. Substantively, the findings provide preliminary evidence that the intervention may help first-year students reduce tension associated with academic demands.

The baseline profile indicates that learning stress is a relevant concern among first-year students. Three participants were classified as high and seven as moderate. This pattern is consistent with Bariyyah and Latifah (2015), who found that university students may experience moderate to high levels of academic stress. Shahmohammadi (2011) also identified examinations, extensive learning materials, homework, and demanding schedules as educational stressors. For first-year students, these demands may occur alongside adjustment to new learning systems, social environments, and expectations for independence. The elevated baseline scores can therefore be understood as an indication that students may need strategies for regulating their responses to academic demands.

The reduction in scores after the intervention can be explained partly through the role of relaxation in reducing physical and psychological tension. Fatahilah et al. (2017) showed that relaxation training can reduce anxiety. More directly relevant, Nurcahyani and Fauzan (2016) found that relaxation techniques within behavioral group counseling were effective in reducing learning stress. Mechanistically, relaxation exercises provide an opportunity for individuals to reduce tension and reach a calmer state before returning to demanding situations. In group counseling, this process occurs within an interpersonal environment in which participants can also receive support and reinforcement from peers.

Group dynamics may therefore represent an important supporting mechanism. Rasimin and Hamdi (2022) emphasize interpersonal interaction as a central component of group counseling. Students may recognize that stress is shared by others, exchange experiences, and receive social support. Such a context may create a sense of safety that facilitates participation in relaxation exercises and more open discussion of academic pressure. The reduction observed in this study may therefore be understood as emerging from an intervention that combines tension-regulation practice with an interpersonal group context, although the present design cannot isolate the contribution of each component.

The findings can also be compared with previous research on group counseling for academic stress. Ningtias et al. (2019) demonstrated the effectiveness of CBT-based group counseling incorporating stress inoculation training and cognitive restructuring in reducing academic stress. Putrikita and Sari (2021) reported an effect of group counseling on academic stress, while Pujowati et al. (2022) found benefits of solution-focused brief group counseling for psychological resources among students experiencing academic stress. The consistency across these studies suggests that the group context has intervention potential. The distinguishing feature of the present study is its principal mechanism: relaxation techniques were used to directly target tension and stress responses, providing additional evidence for a stress-regulation pathway within group counseling.

The findings also relate to international literature on stress-regulation interventions for university students. Pan et al. (2024), through a systematic review and meta-analysis of 29 randomized controlled trials, found that mindfulness-based stress reduction affected perceived stress and several indicators of university students' mental health. Alrashdi et al. (2024) likewise reported benefits of online mindfulness-based interventions for psychological distress and well-

being. Mindfulness and relaxation are not identical interventions, so these studies should not be treated as direct evidence for the effectiveness of the present relaxation protocol. However, they support a broader theoretical direction in which students benefit from learning to regulate their responses to stress. The present study extends that direction by applying relaxation within a group-counseling setting.

The magnitude of change also varied across participants. Participant N showed the largest reduction, 36 points (31.6%), whereas KHS showed the smallest reduction, 3 points (3.1%). This variation indicates that responses to the same intervention are not uniform. Baseline severity, readiness to engage in counseling, personal experiences, coping resources, or current academic conditions could potentially influence responsiveness, but these variables were not measured. They therefore cannot be presented as empirical explanations. Practically, the finding supports the need for individual assessment and follow-up for participants who show limited change after group counseling.

Statistically, all paired differences were in the same direction, producing W = 0 with an exact two-sided p-value of .002. This indicates a statistically significant difference between pre-intervention and post-intervention scores. Statistical significance, however, is not equivalent to causal evidence. The one-group pretest-posttest design lacks a control group, so reductions may also reflect natural adaptation to university life, changes in workload, measurement timing, or other experiences during the study period. The most defensible interpretation is therefore that learning stress decreased significantly after the intervention, rather than that relaxation alone was proven to cause the decrease.

Theoretically, the study supports the view that university counseling can integrate interpersonal processes with stress-regulation strategies. Group counseling provides an interactional and supportive context, while relaxation offers a practical procedure for managing tension. This combination extends the application of group-counseling approaches to academic stress in higher education. Practically, the findings suggest that university counselors may use learning-stress assessment to identify service needs and consider group counseling with relaxation techniques as one early intervention option. When stress is driven by time-management difficulties, academic beliefs, interpersonal conflict, or family demands, however, relaxation should be combined with other counseling strategies based on assessment.

Several limitations should be considered. The sample consisted of only 10 students from one group and one study program, limiting transferability. The absence of a control group limits causal inference. The source manuscript also did not provide validity and reliability coefficients for the instrument, preventing a complete psychometric report. In addition, details of the four intervention sessions—including duration, specific relaxation procedures, session sequence, and between-session practice—were not available. This limits exact replication. Future studies should use randomized controlled or at least nonequivalent control-group designs, larger and more diverse samples, follow-up assessments, and a clearly documented intervention protocol.

Future research should also compare group counseling with relaxation techniques, group counseling without the relaxation component, and a control condition to determine the specific contribution of each component. Subsequent studies could examine mediating variables such as physiological arousal, coping, self-regulation, or perceived stress to explain the mechanisms of change more precisely. The present study can therefore be positioned as preliminary evidence that provides a basis for stronger tests of the effectiveness and mechanisms of relaxation-based group counseling for university students.

Conlusion

This study found that group counseling using relaxation techniques was followed by a reduction in learning stress among first-year university students. The mean score decreased from 101.70 to 88.60, a reduction of 13.10 points or 12.9%. All participants showed lower scores, and three participants moved from the high to the moderate category. The Wilcoxon test yielded W = 0 with an exact two-sided p-value of .002, indicating a significant pretest-posttest difference. These findings support group counseling with relaxation techniques as a potential counseling option for helping students manage learning stress. However, because the study used a single-group design with a small sample and no control group, causal conclusions should remain limited. Future

research should include comparison groups, larger samples, follow-up assessments, and a clearly documented intervention protocol.

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