The Effect of the Adaptive Mentality "MANTAP" Program on Resilience and Stress Levels in Nursing Students: A Quasi-Experimental Study

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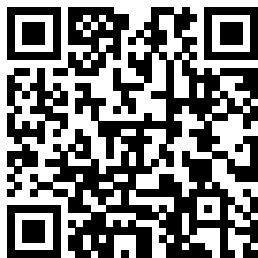
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ABSTRACT

The "MANTAP" (Adaptive Mentality) program as a management strategy can strengthen the resilience of students studying at Sultan Ageng Tirtayasa University. This study was conducted using a quasi-experimental design with two control groups and an intervention group by conducting pre- and post-tests on students of the Nursing Department, Faculty of Medicine, Sultan Ageng Tirtayasa University-Banten. Data were collected at baseline, immediately post-intervention, and at a two-month follow-up. The MANTAP (Adaptive Mentality) Program intervention was carried out for one month. The total sample recruited was 120 in the control group and 120 in the intervention group. Bivariate analysis using paired t-tests was. Data was processed using SPSS version 22. Statistically detectable differences were observed ($p < .001$). Average stress levels decreased in both groups, with a greater reduction in the intervention group (from 11.71 to 7.16) compared to the control group (from 10.52 to 9.39), indicating a stronger effect of the intervention. Meanwhile, the average resilience level showed a slight increase in the control group (from 84.11 to 84.31), while the intervention group experienced a substantial improvement (from 81.81 to 91.23), confirming the intervention's effectiveness in enhancing students' psychological resilience. Resilience or mental toughness helps students recover from difficulties and adapt to academic pressure. Appropriate psychological interventions can reduce stress levels and increase students' mental toughness. The application "MANTAP" (Adaptive Mentality) program can be programmed as a management strategy to strengthen the resilience of nursing students.

Key Messages:

- The MANTAP (Adaptive Mentality) program is an effective psychological intervention to strengthen academic resilience among nursing students.
- Structured mental adaptation programs help students cope better with academic stress, leading to improved well-being and performance.
- Integrating mental resilience programs into university management strategies can promote sustainable student mental health support.
- Collaboration between educators, mental health professionals, and institutional leaders is essential for program scalability and long-term impact.

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GRAPHICAL ABSTRACT

Enhancing Resilience in Nursing Students
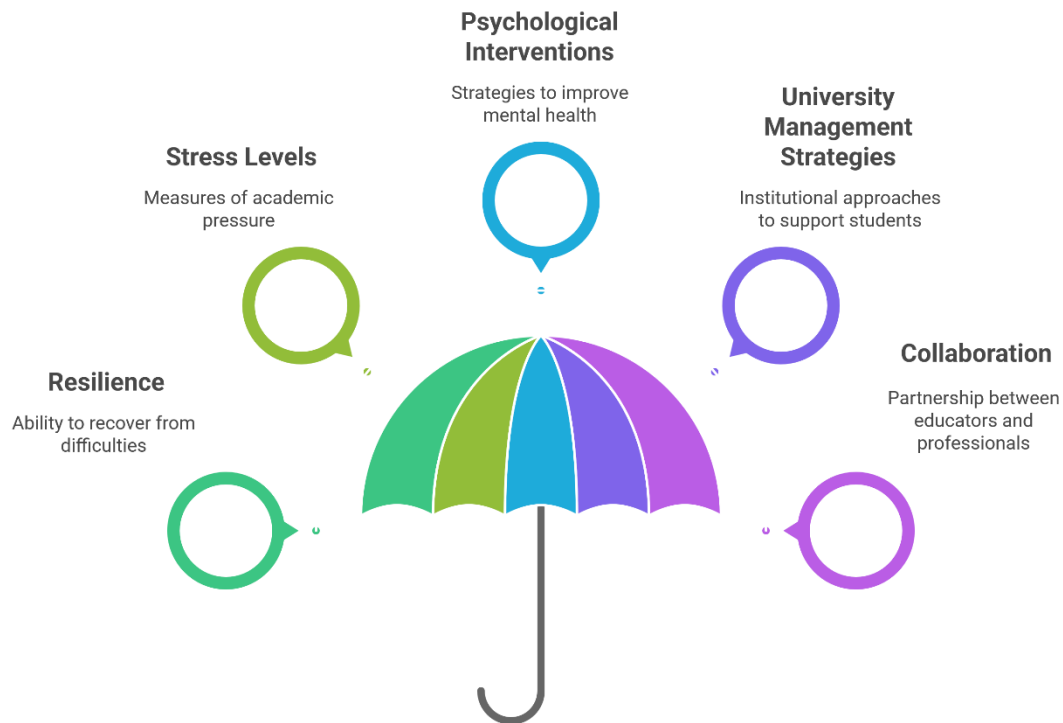
INTRODUCTION

The World Mental Health International College Student project surveyed 19 universities across eight countries. It found that 35% of students had experienced at least one DSM-IV mental disorder in their lifetime such as anxiety, mood, or substance use disorders and 31.4% had experienced one within the past 12 months (1). These findings highlight the widespread prevalence of mental health issues among college students across diverse cultural and educational settings (2). Globally, it is estimated that one in five students suffers from a mental health disorder, with depression and anxiety being the most common (3).

Problems that can cause mental health disorders in students include excessive use of social media can affect students' mental health, increase the risk of anxiety, and reduce direct social interaction, academic pressure especially for health students such as medical, nursing and other health study programs have a very high mental burden when carrying out practices that deal with human lives, undergoing practical exams, and carrying out other tasks (4). This will affect the Cumulative Achievement Index (GPA) negatively. Resilience is an individual's ability to bounce back and adapt from pressure or difficult conditions, is one of the important factors that can help nursing students overcome these challenges (5,6). Students who have a good level of resilience tend to be better able to manage stress, have a positive outlook, and are more adaptable to various changes or pressures (7). Resilience can be strengthened through health education, which is essential to support students' academic success and professional development. Based on the description above, mental health is a very important multidisciplinary approach that includes the promotion of well-being, mental health and disease prevention (8).

Resilience refers to an individual's capacity to bounce back, adapt positively, and maintain healthy psychological functioning despite facing stress or life challenges. For university students, resilience is a crucial ability in confronting various difficulties such as heavy academic workload, challenges in adapting to a new social environment, and personal pressures stemming from self or family expectations (9). Students with a high level of resilience tend to be better at managing stress, maintaining motivation to

learn, and displaying adaptive coping behaviors. However, despite the acknowledged importance of resilience, systematic and structured interventions to develop resilience within the campus environment remain limited (10). Most mental health programs in higher education institutions emphasize curative rather than preventive and promotive approaches, thus the opportunity to build students' psychological resilience in a sustainable manner has not been fully optimized (11).

Common stress management strategies implemented in universities such as individual counseling services, mental health seminars, or brief coping skills training while beneficial, often fail to comprehensively address students' needs (12). These approaches tend to be passive and rely on students' initiative to seek help, which results in low participation rates. Moreover, the intervention models used are often not tailored to the psychosocial development context of today's students, who live in a fast-paced and digitalized era, thereby limiting their effectiveness (13). The lack of integration between student affairs units, academic departments, and campus organizations further weakens collaborative efforts in creating a campus environment that supports holistic mental health (14).

The "Mantap" Program (Adaptiful Mental) was designed based on a strong theoretical foundation, integrating resilience theory, positive psychology approaches, and the cognitive-behavioral framework. These three approaches complement each other in forming an intervention that not only focuses on reducing stress symptoms but also strengthens individuals' internal capacity to adapt healthily (15). This program is specifically designed to develop three key aspects in students: adaptability to change and pressure, healthy emotional regulation to manage psychological reactions constructively, and the reinforcement of a growth mindset so that students become more resilient in facing failures and challenges.

The MANTAP program integrates core components from resilience theory, positive psychology, and cognitive-behavioral therapy (CBT) to address the unique needs of Indonesian students. From resilience theory, the program incorporates skill-building modules on adaptive coping (e.g., problem-solving simulations) to enhance students' capacity to navigate academic and social stressors (16). Positive psychology principles are embedded through activities that cultivate gratitude journals and strengths identification, aligning with research showing their efficacy in boosting psychological well-being (17). Meanwhile, CBT techniques (e.g., cognitive restructuring via role-playing) target maladaptive thought patterns common in high-pressure academic environments (18). This tripartite approach ensures the program not only mitigates distress but also proactively builds competencies—addressing the critique that existing interventions are overly reactive (12). By contextualizing these evidence-based strategies within Indonesian campus culture (e.g., incorporating group *gotong royong* activities), MANTAP bridges the gap between Western-derived theories and local applicability, a limitation noted in prior studies.

Previous studies have examined interventions aimed at enhancing student resilience, including coping training, mindfulness programs, and peer-group-based approaches (19,20). However, most of these studies have been limited to Western cultural contexts, with intervention models whose effectiveness has not been fully tested in higher education settings in developing countries, including Indonesia. In addition, many of these programs are fragmented and fail to consider local factors such as campus social dynamics, cultural norms, and the psychological characteristics of Indonesian students. The purpose of this study is to determine the effect of the MANTAP program on resilience among Indonesian nursing students.

METHODS
Design

This study employed a quasi-experimental design with a pre-test and post-test approach, comparing outcomes between an intervention group and a control group. The intervention group received the MANTAP (Adaptive Mentality) Program, a structured psychological intervention aimed at enhancing resilience and reducing academic stress, while the control group received no treatment. Data were collected at three time points: before the intervention (baseline), immediately after the one-month intervention, and during follow-up assessments conducted one and two months post-intervention. This design allowed for the evaluation of both immediate and sustained effects of the program on students' stress and resilience levels.

Sample

The study involved 240 nursing students from the Faculty of Medicine at Sultan Ageng Tirtayasa University, Banten, equally divided into an intervention group (n=120) and a control group (n=120). Participants were selected based on their enrollment in the nursing program and willingness to participate. The majority of students in both groups were female (95% in control, 95.83% in intervention) and aged between 18-20 years (60% in control, 55.83% in intervention). Baseline characteristics, including mental health screening history and chronic disease status, showed no significant differences between groups, ensuring comparability at the outset of the study.

Interventions

The intervention was conducted in several sessions, held in the form of socialization, education, discussion, and role play. By researchers in health centers using educational aids such as PowerPoint presentations, videos, educators, chairs, and tables. Based on valid scientific texts under the supervision of experts in this field. Participants in the control group did not receive any training. During the training, caregivers were asked to practice the training content provided in front of respondents to eliminate possible ambiguity. The MANTAP (Adaptive Mentality) program is implemented through the following steps (Table 1).

Table 1. Intervention program

Stage	Content and activities
1	In the first stage of the Adaptive Mental Model, participants are given socialization, education, and discussion.
	in two sessions on Improving Resilience in controlling student anxiety or stress in facing learning in nursing, increasing the intensity and sensitivity felt by participants.
	The training session ended with a series of questions and answers to ensure everyone understood
	understand.
2	Problem-solving skills are emphasized. Students as participants participate in a series of one-on-one problem-solving sessions to achieve this goal.
	Participants discuss various problems and strategies for solving them in these sessions. They should provide specific information about their anxiety and stress states and the steps they have taken to cope with these problems.
	In addition, the impact of not regulating these two variables and their normal values is discussed thoroughly, as are practical techniques for monitoring the levels of anxiety and stress experienced.
	The next step in Role Play is to ask students to practice these skills. What are the strategies for dealing with anxiety and academic stress?
	Now that we have identified the students' strengths, we can choose an approach most effective in solving their difficulties.
3	Students were reassigned by the researcher to convey the obstacles in strengthening resilience to control academic anxiety and stress or in facing OSCE exams.
4	Both groups were evaluated using the Adaptive Mental/resilience questionnaire one and two months after the intervention respectively.
	In addition, participants can resolve issues or ask any questions that may arise by contacting the researcher by telephone during the study.

Instruments

Resilience was measured using the Connor-Davidson Resilience Scale (CD-RISC), a validated tool with established reliability (Cronbach's $\alpha > 0.85$). Stress levels were assessed using a standardized academic stress questionnaire developed for this study. Demographic data, including age, gender, and health history, were collected through a self-administered questionnaire. All instruments were pretested for clarity and relevance in the target population.

Data Collection

Data collection occurred between January and December 2025. The MANTAP intervention was delivered through four structured stages: 1) education and discussion sessions on resilience-building strategies, 2) problem-solving training with role-playing exercises, 3) identification of personal barriers to

stress management, and 4) follow-up evaluations. Sessions utilized PowerPoint presentations, instructional videos, and printed modules. Control group participants completed the same assessments but received no training. Researchers supervised all sessions to ensure protocol adherence.

Data Analysis

Quantitative data were analysed using SPSS version 22. Paired t-tests compared pre- and post-intervention scores within groups, while independent t-tests assessed differences between groups. Multivariate analysis using General Linear Modeling (GLM) examined the intervention's effect over time, controlling for age as a potential confounder. Statistical significance was set at $p < 0.05$.

RESULTS

Table 2 shows demographic characteristics of both groups were relatively similar. In terms of age, most participants in both the control (60%) and intervention (55.83%) groups were between 18–20 years old. The majority were female, accounting for 95% in the control group and 95.83% in the intervention group. Most respondents had never undergone mental health screening (85% control; 87.5% intervention), and the majority reported no history of chronic illness (88.3% control; 89.17% intervention). These similarities suggest baseline comparability between the two groups.

Table 2. Characteristics of Control and Intervention Groups

Category	Subcategory	Control Group (n = 120)	Intervention Group (n = 120)
Age	18–20 Years	72 (60%)	67 (55.83%)
	21–23 Years	48 (40%)	53 (44.17%)
Gender	Male	6 (5%)	5 (4.17%)
	Female	114 (95%)	115 (95.83%)
Mental Health Screening History	Once	18 (15%)	15 (12.5%)
	Never	102 (85%)	105 (87.5%)
Chronic Disease History	Yes	14 (11.7%)	13 (10.83%)
	No	106 (88.3%)	107 (89.17%)

Table 3. Frequency of Stress and Resilience among Intervention and Control Group

Group	Variable	Category	Pre-Test	Pre (%)	Post-Test	Post (%)
Control Group	**Stress Level**	No Stress – Light Stress	67	55.83%	63	52.5%
		Moderate – Severe Stress	53	44.17%	57	47.5%
	Resilience Level	High Resilience	46	38.33%	49	40.83%
		Low Resilience	74	61.67%	71	59.17%
Intervention Group	**Stress Level**	No Stress – Light Stress	64	53.3%	77	64.17%
		Moderate – Severe Stress	56	46.7%	43	35.83%
	Resilience Level	High Resilience	46	38.3%	72	60%
		Low Resilience	74	61.7%	48	40%

Table 3 shows a comparison of stress and resilience levels between the control and intervention groups before and after treatment. In the control group, changes were minimal, with a slight decrease in low stress levels and a small increase in high resilience. In contrast, the intervention group showed a notable improvement: low stress levels rose from 53.3% to 64.17%, and high resilience in the intervention group increased from 38.3% to 60.0%. These results indicate that the intervention was effective in reducing stress and enhancing resilience among students.

Table 4. Average Stress and Resilience Levels of Students

Variable	Time	Control Group	Intervention Group
Stress Level	Before Treatment	10.52	11.71
	After Treatment	9.39	7.16
Resilience Level	Before Treatment	84.11	81.81
	After Treatment	84.31	91.23

Table 4 shows that average stress levels decreased in both groups, with a greater reduction in the intervention group (from 11.71 to 7.16) compared to the control group (from 10.52 to 9.39), indicating a stronger effect of the intervention. Meanwhile, the average resilience level showed a slight increase in the control group (from 84.11 to 84.31), while the intervention group experienced a substantial improvement (from 81.81 to 91.23), confirming the intervention's effectiveness in enhancing students' psychological resilience.

Table 5. Independent T-Test Results for Stress and Resilience Levels

Variable	Time	p-value (Sig)	Information
Stress Level	Before Treatment	0.068	No significant difference
	After Treatment	0.000	Significant difference
Resilience Level	Before Treatment	0.068	No significant difference
	After Treatment	0.000	Significant difference

Table 5 shows that independent t-tests revealed no significant baseline differences (p = 0.068) but significant post-intervention improvements in the intervention group (p < 0.001), indicating that the intervention had a statistically significant effect in reducing stress and enhancing student resilience.

DISCUSSION

The characteristics of respondents in both the control and intervention groups were relatively homogeneous, with the majority aged between 18–20 years, predominantly female, having no prior mental health screening, and with no history of chronic illness. This demographic profile suggests a group of young adults who may be vulnerable to psychological distress but have not previously accessed formal mental health services, possibly due to stigma, lack of awareness, or limited access. The similarity in baseline characteristics between the two groups supports the internal validity of the study, as any post-intervention changes are more likely attributable to the intervention itself rather than pre-existing differences. Young female college students often show lower levels of mental health literacy and are less likely to seek psychological help despite experiencing stress (21). Most adolescents had never undergone mental health screening and did not have chronic illnesses, reinforcing that these characteristics are typical in this population. Hence, the current study reflects a common student profile and establishes a balanced starting point for evaluating the intervention's impact (22).

The majority of respondents were 18–20 years old and female, both in the control and intervention groups. This age is included in the late adolescence to emerging adulthood stage, is an important transition period that is vulnerable to stress and identity crises due to high academic and social demands (23). The dominance of female respondents show that women are more susceptible to symptoms of psychological disorders due to hormonal factors and more complex social burdens (24). In addition, the low proportion of those who have undergone mental health screening indicates limited access and awareness of adolescents regarding the importance of early detection. Lack of education and stigma are the main barriers to students seeking psychological help (25,26).

College students often face academic, social, and emotional stress that can affect their mental health. Prolonged stress can reduce quality of life and academic achievement. Conversely, resilience or mental toughness helps individuals to recover from difficulties and adapt to stress (27). Appropriate psychological interventions can reduce stress levels and increase student resilience. Before the intervention, 44.17% of students experienced moderate to severe stress. After time without treatment,

there was a small decrease (to 47.5%). Some individuals are able to adapt to stress naturally through passive or adaptive coping mechanisms (28).

However, the absence of an intervention strategy causes the decrease to be insignificant. A Without psychosocial-based intervention, stress reduction in students tends to stagnate. The proportion of students experiencing moderate to severe stress in the intervention group declined from 46.7% to 35.83%. This is supported by the mean stress data which decreased sharply from 11.71 to 7.16. The interventions provided, possibly in the form of education, counseling, and emotional regulation training, have proven effective. Cognitive behavioral intervention-based approach to students can significantly reduce stress levels and increase student resilience levels, especially if accompanied by social support and visual educational media (29).

In the control group, high resilience only increased slightly (38.33% to 40.83%). This shows that without special training or intervention, resilience capacity does not increase significantly. Resilience is an ability that can be trained through a program of positive thinking habits and self-control (30). In contrast, the intervention group experienced an increase in high resilience from 38.3% to 60%, and an average score from 81.81 to 91.23. This proves that the intervention program not only reduces stress but also develops students' psychological resilience (31).

Psychosocial-based interventions, such as mindfulness and emotional regulation training, can increase resilience by 20–30% in adolescent and young adult populations (32). Several studies have shown that interventions such as mindfulness, biofeedback, and cognitive training can be effective in reducing stress levels in college students (33,34). Cognitive and mindfulness-based interventions can reduce symptoms of anxiety and depression in college students (35). In addition, multicomponent programs that include mindfulness and biofeedback training have been shown to improve students' ability to manage academic stress. 66% of participants experienced improvements in academic stress management after participating in the program (36).

Interventions designed to enhance resilience, such as coping skills training and mindfulness, have shown positive results in improving mental resilience in college students. Resilience-based interventions can improve college students' mental well-being and adaptability (37).These results suggest that appropriate psychological interventions can significantly reduce stress levels and increase resilience in students (38,39). Higher education institutions are advised to integrate such programs into their student support services to improve their mental and academic well-being. Well-designed psychological interventions can be effective in reducing stress and increasing resilience in students. Implementing such programs in a campus environment can help students better cope with academic and daily life challenges.

The study's implementation in an Indonesian nursing student population raises important cultural considerations that may influence the generalizability of findings. Collectivist cultural norms in this setting could have amplified the intervention's effectiveness through enhanced group cohesion and shared learning experiences, particularly during role-playing and problem-solving sessions (40). However, these same cultural factors might also introduce unique barriers, such as reluctance to disclose personal struggles in group settings due to concerns about social harmony or saving face. The predominance of female participants (95%) further reflects gender dynamics in nursing education that may not translate to more gender-balanced academic programs. Future adaptations of the MANTAP program should explore culturally specific stressors (e.g., family academic expectations, religious coping mechanisms) and examine whether the intervention's effectiveness varies across educational systems with different academic pressures and support structures.

The current study design does not permit analysis of dose-response relationships, which limits understanding of whether certain intervention components or session frequencies drove the observed outcomes. While the standardized protocol ensured consistency, real-world implementation might require flexibility in session duration or frequency to accommodate academic schedules. The reported fidelity measures (checklists, session audits) appropriately addressed adherence but did not capture qualitative aspects of implementation quality, such as facilitator warmth or participant engagement levels factors known to moderate intervention effectiveness in educational settings (41). Subsequent studies should incorporate process evaluations to examine how variations in delivery quality influence outcomes,

particularly since resilience-building interventions often show stronger effects when participants form meaningful connections with facilitators and peers (42).

The findings provide compelling evidence for the efficacy of the MANTAP program in enhancing psychological resilience and reducing academic stress among nursing students. This success appears attributable to three key intervention components working synergistically: (1) the psychoeducational modules that improved stress literacy and cognitive restructuring, (2) the problem-solving workshops that developed concrete coping strategies, and (3) the role-playing exercises that provided safe behavioral rehearsal of stress management techniques. The intervention's phased approach - moving from knowledge acquisition to skill application - mirrors established principles of adult learning theory (43), potentially explaining its effectiveness. Our results align with meta-analytic findings showing combined cognitive-behavioral and experiential approaches for stress reduction in health professions students compared to didactic-only interventions (44). However, the 1-month duration may represent a limitation - while sufficient for initial skill acquisition, longitudinal research suggests 3-month reinforcement periods are optimal for sustained resilience gains (45). Future iterations should consider incorporating booster sessions and digital reinforcement tools to maintain intervention benefits throughout academic cycles. The group delivery format, while cost-effective, may also have contributed therapeutic factors beyond the specific curriculum through peer modeling and social support.

The promising post-intervention results beg the question of whether effects persist through critical academic transitions (e.g., clinical rotations, licensure exams). The two-month follow-up provides preliminary evidence of medium-term maintenance, but the natural history of resilience development suggests that booster sessions or integrated curricular support might be necessary for sustained impact (46). Scalability challenges emerge when considering resource requirements: trained facilitators, small-group formats, and multimedia materials may prove impractical for institution-wide implementation. Hybrid models combining digital self-guided modules with periodic group sessions could optimize cost-effectiveness while preserving key interactive elements. These findings contribute to growing evidence that tiered support systems combining universal resilience training with targeted interventions for high-risk students may represent the optimal approach for academic mental health promotion (26).

Limitations

While the MANTAP program demonstrated significant effectiveness, several limitations should be acknowledged. First, the study's quasi-experimental design, though practical, limits causal inference compared to a randomized controlled trial. Second, reliance on self-reported measures for stress and resilience may introduce response bias, as participants might underreport stress due to social desirability. Third, the sample consisted primarily of female nursing students aged 18–20, which may restrict generalizability to older students, male populations, or other academic disciplines. The group-based delivery makes it difficult to isolate whether improvements stemmed from the intervention's core components or nonspecific factors like peer support. Future studies should address these limitations by incorporating objective biomarkers of stress (e.g., cortisol levels), extending follow-up duration, and testing the intervention in more diverse student populations.

CONCLUSION

The MANTAP (Mental Adaptif) program has proven highly effective in building psychological resilience and reducing academic stress among nursing students at Sultan Ageng Tirtayasa University. This structured psychosocial intervention successfully addresses the unique pressures of nursing education by combining cognitive-behavioral techniques with practical stress-management strategies. The program's effectiveness highlights the critical need for targeted mental health support in professional education programs where academic demands are particularly rigorous.

These findings carry important implications for higher education institutions. Universities should consider integrating resilience-building programs like MANTAP into their student support services or academic curricula. Such integration could take various forms, from mandatory wellness modules to elective workshops, depending on institutional resources and student needs. Beyond immediate implementation, there are several promising directions for future research. The program's efficacy should

be examined across different academic disciplines to determine its broader applicability, with potential modifications for fields with distinct stress profiles. Developing digital versions of the intervention could enhance accessibility while maintaining effectiveness, particularly for students with limited schedule flexibility. Future studies should also investigate the underlying mechanisms of the program's success by exploring how factors like baseline resilience levels, personality traits, or social support networks influence outcomes. Longitudinal follow-up studies combined with qualitative interviews would provide valuable insights into the program's lasting impacts and help identify optimal intervals for booster sessions. This comprehensive approach to research and implementation will ensure that resilience-building interventions continue to evolve and meet the changing needs of student populations.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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