

The development of stress management model among nursing students in private higher education institutions

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Abstract: The research on developing a stress management model for nursing students at private higher education institutions aims to create an effective stress management approach. This study applies the concepts of Health-Related Hardiness and Resilience using a research and development methodology divided into three phases, 1) Synthesis of a draft prototype: In this phase, an initial stress management model was conceptualized. 2) Development of the stress management prototype: The finalized prototype comprises three main concepts and five activities, Concept 1: Self-commitment – Strive for Success (Activities: Motivation and Opportunity), Concept 2: Internal and External Control – Finding Solutions (Activities: Novelty and Encourage) and Concept 3: Facing Challenges, I Can Do It (Activity: Yourself). 3) Effectiveness testing of the prototype: This phase involved a trial with 30 experimental participants and 30 in a comparison group. Results showed a statistically significant reduction in stress levels within the experimental group before and after the intervention ($t = 24.286$, $p < .001$). Post-intervention stress levels were significantly lower in the experimental group compared to the comparison group ($t = -12.079$, $p < .001$). Overall resilience in the experimental group also showed a statistically significant improvement after the intervention ($t = -9.761$, $p < .001$), with increases across all three dimensions of resilience and The resilience levels of the experimental group were significantly higher than those of the comparison group ($t = 1.829$, $p < .001$). The researcher developed this stress management model to enhance health-related hardiness and psychological resilience among nursing students, naming it the MONEY MODEL.

Keywords: *Nursing students, Private higher education institutions, Stress management model.*

1. Introduction

Nursing Students: Challenges and the Importance of Resilience and Stress Management. Nursing students, as future healthcare professionals, play a critical role in the healthcare system. Upon graduation, they are expected to work under significant societal expectations, given their direct involvement in the lives and safety of patients across all ages and health conditions. Nursing is a profession requiring a blend of science and art, encompassing clinical practice in wards, preparation for hands-on training, patient assessment, care planning, nursing interventions, and procedural skills (Nudla, P., Balathip, K., & Phasri, P. 2022). Most nursing students are aged 18–22, a transitional period requiring adaptation to numerous changes, such as moving from home to dormitory life, adjusting to specialized curricula, and transitioning from adolescence to adulthood, with rapid physical, emotional, cognitive, and psychological development (Limthongkul & Aree-Ue, 2009). Additionally, as members of Generation Z, they thrive in a technologically advanced era but often lack soft skills such as communication, problem-solving, and critical decision-making under pressure (Singh & Dangmei, 2016). These challenges can impact their academic engagement, lead to low academic performance, reduced satisfaction, and, in some cases, dropouts. These outcomes not only affect individual students but also the quality of patient care and future workforce adequacy in nursing (Nudla, P., Balathip, K., & Phasri, P. 2022). Studies reveal that nursing students experience high levels of stress, (Sirisab Siha-wong, 2018)

often resulting from intensive curricula, time management demands, and social challenges, such as being away from family and forming new relationships. Stress factors include academic pressure, financial issues, loneliness, and personal conflicts, with the most significant stressor being academic performance, particularly in private universities (Grotberg, E.H. 1999).

In Thailand, mental health assessments from January to July 2022 reported that 3.65% of the population experienced stress, 4.53% were at risk of depression, 2.4% were at risk of suicide, and 4.5% experienced burnout (Department of Mental Health, 2022). Globally, studies have found depression prevalence among nursing students at 9.73% in Brazil (Grazziano et al., 2015), 44% in Portugal (Furegato et al., 2010), and 8.3–50.1% in Thailand (Limthongkul, M., & Aree-Ue, S. 2009). Resilience and Health-Related Hardiness, Health-related hardiness is an individual's internal characteristic that helps them maintain stability during crises (Pollock, 1989). It comprises three core attributes: 1) health commitment, 2) health control, and 3) health-related challenge. Similarly, resilience, as defined by Grotberg (1999), refers to an individual's ability to adapt and recover after crises or difficulties. Resilient individuals demonstrate emotional stability, perseverance, and problem-solving abilities, crucial traits for nursing students as future healthcare providers. Stress Management in Nakhon Pathom Nursing Schools, In Nakhon Pathom, several higher education institutions train nursing students, including Mahidol University, Nakhon Pathom Rajabhat University, and Christian University of Thailand. At Christian University, a private institution, stress factors among nursing students were identified as educational commitment (24.3%), practical training (20.6%), financial issues (14.6%), theoretical learning (14.2%), and personal traits (Student Development Division, Faculty of Nursing, 2023).

Recognizing these challenges, the researcher aims to develop a stress management model for nursing students by integrating Pollock's Health-Related Hardiness Theory (1986) and Grotberg's Resilience Framework (1999). Collaboration with academic committees, student development departments, and student clubs is proposed. Literature indicates that fostering resilience reduces stress and anxiety, mitigating risks of depression (Kaewmart, N., Koedbangkham, J., & Nabkasorn, C. 2011). Students with self-efficacy and a belief in their abilities are more likely to exert effort and achieve positive change (Mokkhaw, K., et al. 2021). This initiative highlights the necessity of equipping nursing students with robust stress management tools to enhance their well-being and ensure high-quality healthcare delivery in the future.

2. Objectives

1. To study the levels of stress and mental resilience among nursing students.
2. To develop a stress management model for nursing students.

3. Methodology

This study is a research and development (R&D) project conducted between June and September 2024. Participants engaged in activities over four weeks, with an evaluation conducted six weeks post-intervention. The study comprises three phases:

Phase 1: Situation Analysis and Synthesis of a Draft Prototype for Stress Management. The situation analysis was conducted in June 2024. The key informants included: 1) Personnel and Nursing Students from private higher education institutions, selected through simple random sampling. A total of 194 participants from the Faculty of Nursing at Private Higher Education Institution A were included. 2) Mental Resilience Study Participants: Ten nursing students experiencing moderate to high levels of stress were selected via purposive sampling and 3) Stress Reduction Activity Design Informants: Five student development staff members with at least five years of experience in implementing health promotion programs were selected via purposive sampling.

Data Collection Instruments, 1) A nursing student stress questionnaire with 20 items, scored 0–3 per item, for a total score of 60 points. 2) An in-depth interview protocol focusing on mental resilience among nursing students, consisting of 10 open-ended questions and 3) A semi-structured interview guide with seven questions to gather insights on stress-reduction activity designs from student development staff.

Validation and Reliability, The instruments were revised and validated by experts for content validity. The Content Validity Index (CVI) scores were as follows, 1) Self-assessment stress questionnaire: 1.00. 2) Mental resilience assessment: 1.00 and 3) In-depth interview guide 0.80. A try-out was conducted with 30 non-sample participants to test internal consistency, and reliability was calculated using Cronbach's Alpha Coefficient, Self-assessment stress questionnaire 0.834 and Mental resilience assessment 0.757

Phase 2: Development of a Stress Management Model for Nursing Students. This phase, conducted from June to July 2024, involved developing a draft prototype of the stress management model. Participants resembling the target group were selected via simple random sampling from the Faculty of Nursing at Private Higher Education Institution A. A small group (five participants per session) was selected through purposive sampling to co-develop the prototype across three activities, 1) Self-Commitment and "I Am". 2) Internal/External Control and "I Have" and 3) Challenge Management and "I Can".

Data Collection Instruments, 1) A prototype stress management model comprising the three activities from Phase 1 and 2) Feedback forms for participants after trialing each activity (five participants per session).

Phase 3: Implementation and Evaluation of the Stress Management Model. This phase, conducted from July to September 2024, evaluated the effectiveness of the stress management model. **Sample Groups:** Two groups of 30 nursing students each were selected via simple random sampling, 1) Experimental group: Nursing students from Private Higher Education Institution A and 2) Control group: Nursing students from Private Higher Education Institution B.

Sample size was calculated using G*Power with an 80% power level, a significance level of .05, and a medium effect size for a t-test comparison. Intervention Tools, 1) Committed to Success Activities: Motivation and Opportunity enhancement. 2) Think & Conquer the Solution Activities: Novelty and Encouragement enhancement and 3) I Can Do It Activities: Building self-identity.

Data Collection Instruments, 1) Personal information questionnaire (gender, age, religion, student loan status, housing, monthly expenses) and 2) Self-assessment stress questionnaire (20 items, 0–60 points). 2.1) Scores 0–5: Below normal stress, 2.2) Scores 6–17: Normal stress, 2.3) Scores 18–25: Slightly above normal stress, 2.4) Scores 26–29: Moderately high stress and 2.5) Scores 30–60, Very high stress. 3) Mental resilience assessment (20 items) and 4) In-depth interview guide (10 questions) for focus group discussions.



Figure 1.
Synthesis of the draft stress management model.

4. Results

Phase 1: Situation Analysis and Synthesis of a Draft Prototype for Stress Management. The findings from Phase 1 were based on data collected through, 1) A stress questionnaire administered to nursing students at private higher education institutions. 2) In-depth interviews with 10 nursing students from private higher education institutions focusing on mental resilience. 3) Semi-structured interviews with five student development staff members regarding stress-reduction activities for nursing students. Key Findings, 1) Demographics, The majority of key informants were female

(95.90%), with males accounting for 4.10%. Most participants were Buddhist (95.90%), with 2.10% each identifying as Christian or Muslim. A significant proportion (88.70%) relied on student loans from the Student Loan Fund, while 11.30% did not. Most students resided in off-campus housing (80.90%), with 19.20% living on campus. Monthly expenses varied as follows, 4,001–6,000 THB: 30.90%, 8,001–10,000 THB: 25.30%, 6,001–8,000 THB: 17.50%, Over 10,000 THB: 13.90% and 2,001–4,000 THB: 12.40%. 2) Stress Levels, Average stress levels were slightly above normal (18.75 ± 8.40) and 12.90% of participants had slightly elevated stress levels, while 11.90% had significantly high stress levels. 3) Sources of Stress and Impact, Common stressors included academic demands, patient care during internships, and financial challenges and Stress-related health issues included insomnia, drowsiness during lectures, lack of focus, headaches, back pain, and nausea. 4) Coping Mechanisms, Students coped by seeking support from close friends, avoiding solitude, crying in private, confiding in friends, listening to music, reading novels, browsing social media (e.g., TikTok), taking walks, visiting parks or shopping malls, and praying, University stress-reduction activities included recreational events (e.g., from the student loan club), environmental workshops, language and expression activities, and volunteer work organized by faculties or the university and Specific resources included senior students' study notes, shifts covered by peers, and financial support from the student loan fund. 5) Staff Perspectives on Stress Management Activities, The five student development staff members (four female, one male; ages 33–51; with 6–18 years of experience) highlighted existing initiatives, 5.1) Motivational programs, such as dormitory bonding activities and campus sports events. 5.2) Nursing students often showed high participation and were among the first to join volunteer groups. 5.3) Staff used a direct communication approach through Line groups for each academic year, creating a supportive and accessible environment. 5.4) The student development office is centrally located on campus, ensuring privacy and safety. 5.5) Additional support included psychiatric faculty members, financial aid, and opportunities for part-time employment. Figure 1 illustrates the proposed stress management framework.

Phase 2: Development of a Stress Management Model for Nursing Students in Private Higher Education Institutions. The development in this phase resulted in a prototype stress management model consisting of three core concepts and five activities. 1) Concept 1: Self-Commitment...Committed to Success, 1.1) Activity 1: Motivation – fostering inspiration and determination and 1.2) Activity 2: Opportunity – enhancing opportunities for growth and development. Concept 2: Internal and External Control...Think & Conquer the Solution, 2.1) Activity 3: Novelty – encouraging innovative and fresh perspectives. 2.2) Activity 4: Encouragement – boosting morale and confidence. Concept 3: Facing Challenges, I Can Do It, Activity 5: Yourself – strengthening self-identity and resilience. Figure 2 illustrates the synthesized stress management model.

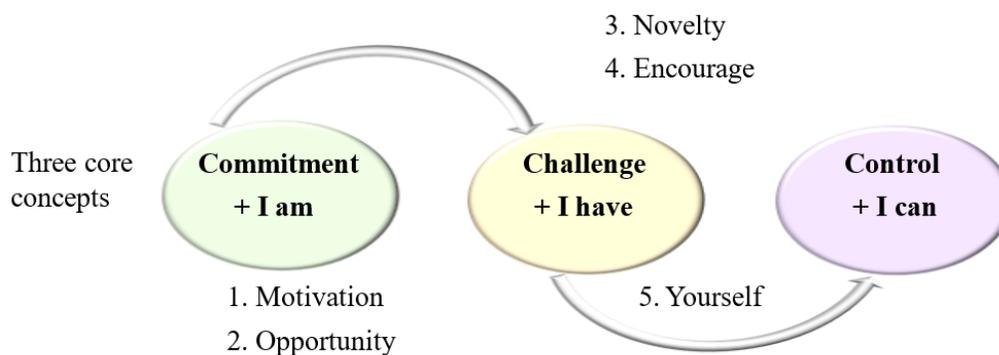


Figure 2.
Illustrates the synthesized stress management model.

Phase 3: Implementation and Evaluation of a Stress Management Model Among Nursing Students in Private Higher Education Institutions. Part 1: Demographic Data The study included 60 participants equally divided into experimental and comparison groups (n=30 per group). Both groups had a higher proportion of females than males (93.3% and 100%, respectively). Most participants in both

groups were aged 20 (56.7% in the experimental group and 46.7% in the comparison group). The majority identified as Buddhist (96.7% and 90.0%, respectively). Regarding student loan fund usage, most participants in both groups utilized student loans (86.7% and 93.3%, respectively). Housing differences were observed, with most experimental group participants living off-campus (83.3%) and most comparison group participants residing on-campus (93.3%). Monthly expenses for the experimental group were primarily 8,001–10,000 THB (33.3%, $\bar{X}=8,176.67\pm 2,564.43$), while the comparison group's expenses were mostly 4,001–6,000 THB (36.7%, $\bar{X}=6,359.00\pm 2,697.86$).

Part 2: Assessment of Mental Toughness Levels, The mental toughness levels of both groups were evaluated before and after the intervention across three domains: emotional stability, morale, and problem-solving.

1) Experimental Group, **1.1) Overall mental toughness** before the experiment was normal (73.3%), with most participants achieving above-normal levels post-experiment (70.0%). **1.2) Emotional Stability:** Initially normal (66.6%), with most participants achieving above-normal levels post-experiment (56.7%). **1.3) Morale:** Initially normal (86.7%), with 40.0% above normal post-experiment. **1.4) Problem-Solving:** Initially normal (80.0%), with 33.3% above normal post-experiment.

2) Comparison Group, **2.1) Overall mental toughness** remained primarily normal before (70.0%) and after (83.3%) the intervention and **2.2) Improvements** were observed in emotional stability (73.3% to 86.7%) and morale (70.0% to 80.0%), while problem-solving remained predominantly normal (83.3% to 86.7%).

Part 3: Pre- and Post-Intervention Mental Toughness Comparison, **3.1) Experimental Group:** Statistically significant improvements were observed in overall mental toughness ($t=9.761$, $p\text{-value} < .001$) and across all domains: emotional stability ($t=5.461$), morale ($t=5.037$), and problem-solving ($t=5.113$). **3.2) Comparison Group:** Significant differences were noted for overall mental toughness ($t=2.693$, $p\text{-value}=.012$) and emotional stability ($t=2.693$, $p\text{-value}=.012$), but not for morale ($t=1.795$, $p\text{-value}=.083$) or problem-solving ($t=.571$, $p\text{-value}=.073$).

Part 4: Between-Group Mental Toughness Comparison Before the intervention, overall mental toughness significantly differed between groups ($t=2.898$, $p\text{-value}=.005$), particularly in emotional stability ($t=2.046$, $p\text{-value}=.046$) and morale ($t=2.958$, $p\text{-value}=.004$). Post-intervention, ANCOVA analysis revealed statistically significant differences in all domains when controlling for pre-intervention averages.

Part 5: ANCOVA Analysis Results, Pre-intervention scores in emotional stability, morale, problem-solving, and overall mental toughness significantly influenced post-intervention scores. Post-adjustment analysis showed significant differences between groups in all areas (e.g., emotional stability: $F=78.48$, $p\text{-value} < .001$).

Part 6: Stress Levels, **6.1) Experimental Group:** Pre-intervention stress levels were predominantly high (76.7%). Post-intervention, most participants achieved normal stress levels (76.7%) and **6.2) Comparison Group:** Pre-intervention stress levels were moderate to high. Post-intervention, most participants maintained moderate stress levels (60.0%).

Part 7: Within-Group Stress Level Comparisons, Significant reductions in stress levels were observed in both groups post-intervention, **7.1) Experimental group** ($t=24.286$, $p\text{-value} < .001$) and **7.2) Comparison group** ($t=4.097$, $p\text{-value} < .001$).

Part 8: ANCOVA Analysis of Stress Levels, Pre-intervention stress levels significantly influenced post-intervention outcomes ($F=11.52$, $p\text{-value}=.001$). After controlling for pre-intervention scores, significant differences were observed between the groups in post-intervention stress levels ($F=233.75$, $p\text{-value} < .001$).

In-Depth Interviews Nursing students reported stress from academic exams, clinical practice, teamwork, financial issues, personal and family problems. Stress impacts included insomnia, fatigue, mood instability, and physical discomfort. Coping mechanisms included socializing, entertainment, and participation in university activities, such as sports, planting trees, and creative events. This comprehensive analysis highlights the effectiveness of the stress management model in enhancing mental toughness and reducing stress levels among nursing students.

5. Conclusions

The experimental results showed that, after the intervention, the experimental group had significantly higher mental toughness than before the experiment ($t= 9.761$, $p\text{-value} < .001$) and higher than the control group ($t= 6.913$, $p\text{-value} < .001$) at a statistical significance level of .05. Additionally, after the experiment, the experimental group had lower stress levels than before the experiment ($t= 24.286$, $p\text{-value} < .001$) and lower than the control group ($t= 12.079$, $p\text{-value} < .001$), with statistical

significance at a .05 level. Specifically, in terms of overall mental toughness and its subcomponents, the experimental group had normal levels of mental toughness, emotional stability, motivation, and problem-solving skills before the experiment at 73.30%, 66.60%, 86.70%, and 80.00%, respectively. After the experiment, these percentages increased beyond normal levels to 70.00%, 56.70%, 40.00%, and 33.30%, respectively. Before the experiment, the experimental group exhibited high stress levels (76.70%), which normalized to 76.70% after the experiment.

This demonstrates that the experimental group, after participating in a stress management program consisting of three concepts and five activities developed from health-related hardiness and resilience concepts, experienced notable improvements. These activities included: 1) Self-commitment to success, Strengthening determination to face current challenges, developed from the concept of health commitment (Commitment) and self-identity (I am). Students reflected on their personal experiences and realized their strengths and weaknesses, finding motivation to pursue their education for the benefit of their family, even in the face of adversity. This enhanced their emotional endurance and helped reduce stress. 2) Internal and external control: Think & Conquer the solution, Strengthening self-regulation, developed from health control (Control) and self-empowerment (I have). The group engaged in activities such as relaxation and changing their environment, such as spending time outside the dormitory, which rejuvenated them and improved emotional resilience. Physical exercises like sports, walking, and yoga were also integrated, leading to reduced stress levels and improved mental toughness. 4) Facing challenges: I can do it: Strengthening life crafting, developed from the health challenge concept (Challenge) and self-efficacy (I can). The experimental group participated in volunteer activities, such as the "Open House" event, which initially made them anxious due to shyness, but eventually boosted their self-confidence and sense of value. This increased their ability to cope with challenges.

Overall, the five activities contributed to a significant reduction in stress levels and improved mental toughness in emotional endurance, motivation, and problem-solving, with the experimental group outperforming the control group in both areas. Therefore, the researcher developed the MONEY MODEL for stress management for nursing students, based on the concepts of health-related hardiness (Kobasa) and resilience (Grotberg). As shown in Figure 3.

M	O	N	E	Y
Motivation	Opportunity	Novelty	Encouragement	Yourself
Commitment		Control		Challenge
I am		I have		I can

Figure 3.
The stress management model for nursing students - money model.

6. Recommendations

1. Further research should focus on strengthening emotional resilience to help individuals develop the mental strength needed to overcome life's challenges beyond the normal level, with promotion strategies such as: 1) Mental nourishment 2) Friendship nourishment 3) Faith nourishment.
2. Further study should explore enhancing mental resilience in problem-solving to build individuals' confidence in overcoming challenges and obstacles. This can be achieved by incorporating critical thinking, analytical reasoning, and logical decision-making skills to effectively address problems. Additionally, training in coping mechanisms intentional efforts to solve problems—should be included to help individuals manage stress or feelings of frustration.
3. A comparative study should be conducted on the levels of stress and mental resilience between nursing students at private higher education institutions and those at public institutions offering nursing programs under government oversight, as there may be contextual differences.
4. Further research should focus on undergraduate students from other institutions or programs, both public and private, to broaden the understanding of mental resilience and stress levels.

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