

# Relationship Between Academic Stress and Learning Achievement in Nursing Student

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## Abstract.

*The stress experienced by most students is academic stress. This academic stress is closely related to students' academic processes and the environment that affects the academic process. The purpose of this study was to determine the relationship between academic stress and student learning achievement. This study was a cross-sectional design with purposive sampling of 126 respondents. Data were collected at a nursing academy in Jakarta in 2018. The instrument used was the Student Life Stress Inventory (SLSI) questionnaire. Results showed most students were female (88.9%), from Senior High School majoring in science (38.9%), very satisfying learning achievement (91.3%), and experience severe academic stress (55.6%). There is no significant relationship between learning achievement and academic stress ( $p = 0.317$ ) and gender ( $p$ -value 0.370). There is a significant relationship between learning achievement and senior high school majoring ( $p$ -value 0.005) and age ( $p$ -value 0.007). Institutions should identify sources of the academic stressor and apply appropriate coping mechanisms to reduce academic stress.*

**Keywords:** *academic stress, learning achievement, nursing student.*

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## 1. INTRODUCTION

Academic stress is a disturbing problem in higher education learning, reducing academic achievement [1]. In nursing education, stress is influenced by some issues related to nurses' roles, how to meet the demands of roles, and deal with uncertainty resulting from that role [2]. The rapidly changing and stressful health care environment requires nursing students to play their role effectively both in the classroom and in practice [3].

A study conducted by Edwards et al. [4] showed that there were variations in the level of stress on different data collection times (after two clinical rotations, after five clinical rotations, at the start of the second year, the beginning and end of the third year). Unlike the study conducted by Gorostidi et al. [2], students in the final year (third year) experienced the highest stress level because professional stressors were assigned to third-year students compared to students in an early year. Based on a systematic review conducted by Martos et al. [5], there are three sources of stress in

nursing students: academic stress (fear of failure in training, examinations, and evaluations, workload problems, etc.); clinical stress (work stress, negative responses to death or suffering patients, fear of making mistakes, relationships with other members of the organization, etc.); and personal/social stressors (imbalance between homework and school, economic problems, etc.)

Altiok et al. [6] conducted a study on fifteen respondents using in-depth interviews about stress sources in second-year nursing students. The interview results obtained four main categories of stress sources in second-year nursing students: theoretical, social, clinical practice, and personal life training. Students' stress experienced during theoretical training: stress experienced with other students, stress experienced with the trainer, and stress related to students. In social life, there are three themes: family attitudes, university life, and accommodation. Sources of stress in clinical practice come from coaches, therapists, nurses, patients, students, and practice. Source of stress from a student's personal life is lack of self-confidence, time management, inability to control emotions, and wrong opinions.

Academic achievement refers to performance results in the intellectual domains [7]. It shows the intellectual education level, a group, or a nation [7]. Academic achievement measured through the Grade Point Average (GPA) with three categories: satisfying, very satisfying, and cum laude [8]. The GPA can determine class rankings, job opportunities, and qualifications for post-graduate entrance. In a study conducted on 510 health science students in Saudi Arabia, six variables predict student academic achievement and contribute 43% of the variance [9]. These variables were gender, achievement motivation, depression level, mother's education level, work other than learning, and aptitude test score [9]. Predictors of academic achievement were individual student characteristics (intelligence, motivation, and personality), classroom characteristics (pedagogical approach, teacher education, and selection, financial, applied grading standards, and other resources), and educational system characteristics [7].

The integrative literature review about factor affecting nursing student academic performance found that several factors influence student achievement includes: gender, age, English as a second language, admission qualifications, employment status, within program performance, personality, self-efficacy, critical thinking skills, and academic engagement [10].

There were several studies conducted to assess the relationship of stress on students and its effect on GPA. There was a significant relationship between student stressors with student achievement in pharmacy students [11]. The stressors can be physical environment stressors such as facilities and infrastructure; learning stressor includes many tasks, loss of concentration; social, environmental stressors, tension while interaction, difficulty adapting, and dependence on other people [11]. In contrast,

a study conducted in Indonesia on 104 nursing students found no significant relationship between academic stress and learning achievement [12].

In previous research, there is still debate about the relationship between academic stress and learning achievement. The researcher is interested in finding out more about academic stress, including its relationship with age, senior high school majoring, and learning achievement.

## II. METHODS

This study used a cross-sectional design to determine the nursing student's academic stress level, learning achievement, and the relationship between academic stress and learning achievement. The sample taken using the purposive sampling method with inclusion criteria were nursing students and willing to be respondents. The number of respondents was 126 respondents. This study was conducted in October-December 2018 in a nursing academy in East Jakarta, Indonesia.

The instrument used was the respondent characteristic sheet and the Student Life Stress Inventory (SLSI) questionnaire to assess academic stress levels [13]. The Student Life Stress Inventory (SLSI) questionnaire consists of 51 statements divided into two dimensions, stressors, and reactions to stressors. Stressor categories consist of frustration, conflict, pressure, change, and self-imposed. The reaction to stressor category consists of physiological, psychological, behavioral, and cognitive appraisal. SLSI questionnaire uses a Likert scale with a range of 1-5, 1 (never), 2 (rarely), 3 (sometimes), 4 (often), and 5 (almost every time). The measurement results are based on SLSI scoring wherein favorable items (1-49), scoring is done by adding up according to the answer choices. For unfavorable items (50-51), the scoring of items is reversed 5 to 1. The sum of the scores is done by adding up the scores from each category with a minimum score of 51 and a maximum of 255. Academic stress is categorized into three groups, including mild, moderate, and severe [14]. Mild academic stress if the score range  $\geq 146$ , moderate 120-145, severe 51-119 [15]. This questionnaire has been translated in Bahasa and tested for reliability and validity, with the results of all questions being reliable and valid with Cronbach's alpha 0.905. Academic achievement measured through the cumulative Grade Point Average (GPA) with possible range was from 0 to 4. It was divided into three category: GPA 2.00-2.75 (satisfying), GPA 2.76 - 3.5 (very satisfying) and GPA 3.51-4.00 (cum laude) [8].

Before the study began, the researcher had explained the purpose and benefits of the study to the respondent. If the respondent were willing to participate in the study, they were asked to sign an informed consent. Data analysis was performed using univariate analysis and bivariate analysis. Univariate analysis for numerical data that is not normally distributed, such as age, is presented in median (interquartile range). Univariate data analysis for categorical data such as gender, senior high school

majoring, learning achievement, and academic stress were presented in percentage form. The bivariate test used was Kruskal Wallis and Chi-Squared. Statistical analysis in this study used IBM SPSS Statistic version 21.

### III. RESULT AND DISCUSSION

The results of the analysis in table 1 show that the number of female respondents is 112 people (88.9%), 49 people from Senior High School majoring in sciences (38.9%), learning achievement was very satisfying for 115 people (91.3%), and experienced severe academic stress as many as 70 people (55.6%).

**Table 1.**  
**Respondent Characteristic (N=126)**

Karakteristik	N	%
<b>Age</b> ( $M= 19.50$ , $SD= 1.222$ , $Min-Max= 17-25$ years)		
<b>Gender</b>		
Female	112	88.9
Male	14	11.1
<b>Senior High School Majoring</b>		
Science	49	38.9
Social	40	31.7
Vocational	36	28.6
Technique	1	0.8
<b>Learning achievement</b>		
Less satisfying	0	0
Satisfying	8	6.3
Very satisfying	115	91.3
Cum Laude	3	2.4
<b>Academic stress</b>		
Mild	12	9.5
Moderate	44	34.9
Severe	70	55.6

Catatan:  $M$ = Median,  $SD$ = Standar deviation,  $n$ = frequency, %= percentage

**Table 2**

Relationship between Academic Stress, Gender, Senior High School Origin, Visits to Health Service with Learning Achievement in Nursing Student (N=126)

Variable	Learning Achievement						Total		<i>p-value</i>
	Satisfying		Very satisfying		Cum laude		n	%	
	n	%	n	%	n	%			
<b>Academic stress</b>									
Mild	2	16.7	9	75	1	8.3	12	100	0.317
Moderate	2	4.5	41	93.2	1	2.3	44	100	
Severe	4	5.7	65	92.9	1	1.4	70	100	
Total	8	6.3	115	91.3	3	2.4	126	100	
<b>Gender</b>									

Male	2	14.3	12	85.7	0	0	14	100	0.370
Female	6	5.4	103	92	3	2.7	112	100	
Total	8	6.3	115	91.3	3	2.4	1126	100	
<b>Senior High School majoring</b>									
Science	1	2	46	93.9	2	4.1	49	100	0.005*
Social	4	10	36	90	0	0	40	100	
Vocational	2	5.6	33	91.7	1	2.8	36	100	
Technique	1	100	0	0	0	0	1	100	
Total	8	6.3	115	91.3	3	2.4	126	100	

\* $p$ -value <  $\alpha$  0,05

Table 2 showed bivariate analysis between academic stress and learning achievement; there was no significant relationship between learning achievement and academic stress ( $p$ -value 0.317) and gender ( $p$ -value 0.370). In contrast, there was a significant relationship between learning achievement and senior high school origin ( $p$ -value 0.005) and age ( $p$ -value 0.007).

Table 3

Relationship between Age and Learning Achievement in Nursing Student (N=126)

Variable	N	P-value
Satisfying	8	0.007*
Very satisfying	115	
<i>Cum laude</i>	3	

\* $p$ -value <  $\alpha$  0,05

The mean age of this study was 19.59 years. Previous research also stated respondents mean age 19,38 years [12], 21,3 years, and about 17% of respondents have at least one child [3]. Another study reported nursing students were 19 years old (45%), 20 years old (40%), and 21 years (15%) [11]. It was in line with Al-Zayyat& Al-Gamal [16] with a mean of age 21,15 years. In the present study, most of the respondents were female. A previous study also showed most nursing students were female, with 84.6%[16], and another study 95,2% female respondents [12].

Senior High School majoring characteristics showed that the respondents came from senior high school majoring in science, social studies, vocational, and technique. Most of the respondents came from senior high school, majoring in science. They choose the nursing study program because they felt they had learned basic science while in high school, later used in the nursing academy.

Most of the respondents in this study experienced severe stress. In contrast, a study about nursing students' perceived stress used the Perceived Stress Scale showed most nursing students experience moderate stress ( $21.5 \pm 4.8$ )[3]. The study conducted by Wirastuty[11] also reported most of the respondents experienced moderate stress (79.7%), 40 respondents (53.3%) experienced mild physical stress includes headaches, heartburn, and sleep disturbances. Sixty respondents (81,3%) experienced mild psychological stress, including fear, anxiety, confusion, and forgetfulness. In a literature review on stress and coping mechanisms in nursing students, Labrague et

al.[17]reported that nursing students experience moderate stress levels during nursing education. Stress can be beneficial if it occurs in minimal amounts. However, exceeding tolerance levels can affect the individual. Nursing students' stress sources include caring for patients, assignments and workloads, negative interactions with staff and faculty, lack of clinical competence, and taking examinations[17].

Adequate coping mechanisms are needed when dealing with stress and sources. The coping strategies used by Jordanian nursing students during clinical practice in mental health courses are problem-solving, avoidance, and staying optimistic [16]. Problem-solving strategies are most often used as a coping mechanism was problem-solving because nursing students have various clinical learning opportunities during the nursing program. These opportunities allow students to develop problem-solving skills related to stress [10].

Most of the respondents had very satisfying achievements in this study. This finding is supported by a previous study on pharmacy students, which found that the student achievement index was very good (10.6%), good (30.1%), enough (52.2%), and less (7.1%)[11]. In contrast, another study reported a mean GPA in health sciences students in Saudi Arabia was 2.51 with scores ranging from 0 to 4 [9].

There was no significant relationship between academic stress and student achievement in this study. Consistent with previous research on nursing students, there is no significant difference between academic stress and the learning achievement index[12]. On the contrary, the study in midwifery students in Banda Aceh, Indonesia, found a significant relationship between stress and learning achievement in second-level students. Other research also stated that students' stress levels affect academic achievement[18]. A study conducted in the Republic of South Africa on the influence of the causes of student stressor (personal and academic stressor) reported that students who had higher stress levels describe feelings of anger, fear, and existence being overwhelmed, which can have a negative impact on academic performance [19]. There was no significant relationship between gender and student achievement in this study. It was in line with a previous study conducted in Indonesia [12].

Factor affecting learning achievement in this study were age and senior high school majoring. A previous study on 638 nursing students in Scotland reported older students' had better academic performance than younger students in the first year of the common foundation program[20]. Age is a better predictor of student success, whereas the younger applicants are less successful[21]. Age also a significant predictor for academic performance [18]. Another study conducted on 104 nursing students in Indonesia showed increasing age and academic stress decreases [12]. There were no studies that reported a relationship between senior high school majoring and learning achievement. The researcher assumed that majoring in sciences could more easily

understand nursing courses because they have previously studied science in high school.

#### IV. CONCLUSION

This study showed that most respondents were female, Senior High School majoring in sciences, learning achievement was very satisfying, and experienced severe academic stress. There was significant relationship between age and senior high school majoring in learning achievement. There was no significant relationship between academic stress and gender with learning achievement.

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