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Does Self-Esteem Affect Stress Levels in Final Year Medical Students?

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ABSTRACT

Background: During young adulthood, individuals are forced to encounter countless and overwhelming challenges and responsibilities. Individuals are very prone during this period due to the fluctuation in self-esteem. Low self-esteem might significantly impact individuals as they could perceive challenges as distress, putting them at an increased risk of harming physical or mental health.
Objective: To examine the relationship between self-esteem and stress levels among final year medical students, Faculty of Medicine, Diponegoro University.
Methods: This research is an observational analytic correlational study with a cross-sectional design. Samples were obtained by total sampling method involving final year medical students, Faculty of Medicine, Diponegoro University (Class of 2018). Self-esteem was measured using the Rosenberg Self-esteem Scale (RSES), and stress levels were measured using the Perceived Stress Scale (PSS-10) that had been tested valid and reliable. Data were analyzed using Spearman and Lambda Correlation Tests.
Results: There were 226 subjects involved in this research. Most subjects had high self-esteem (69,5%) and moderate level of stress (67,3%). Demographic factors (gender, residency status, academic achievement and economic status) were not significantly associated with self-esteem and stress levels. However, there was a significant relationship (p=0.000) between self-esteem and stress levels with moderate negative correlation (r=-0.385).
Conclusion: There was a significant relationship between self-esteem and stress levels.

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1. Introduction

Young adulthood is a transition period from adolescent to adult ranging from 18-25 years old. It is a critical developmental period as individuals start to live independently and encounter a variety of possible aspects of life goals. Self-esteem is often misunderstood as confidence in one's ability. However, self-esteem is defined as one's evaluation of oneself (either positive or negative) related to confidence in one's competence, respecting and accepting oneself wholly.[1] Research showed that average individuals have low self-esteem during young adulthood. Nevertheless, it will gradually increase through age until it drops again. Fluctuation in self-esteem reflects the changes in social environment and maturity changes in individuals.[2] Individuals who fail to adapt to the changes notably, individuals with high stress levels, tend to percept these changes as threats. On the other hand, individuals with lower stress levels presume them as challenges.[3] Stress is any stimuli that threaten human's well-being and is defined as a process in which environmental demands exceed organisms' adaptive capacity resulting in psychological and biological changes risking individuals' health.[4] Research conducted in the Medical Faculty of Lampung University showed the prevalence of stress in medical students reached 71% which 23,6% of them were females and 76,4% of them were males.[5] It is essential to manage stress properly. Otherwise, it will cause clinical manifestations that might affect either the physical or mental health of individuals.[6]

The current research aimed to examine the relationship between self-esteem and stress levels among final year medical students, Faculty of Medicine, Diponegoro University.

2. Methods

An observational analytic correlational study with a cross-sectional design was conducted online from June to July 2021. Samples were obtained by total sampling method involving final year medical students, Faculty of Medicine, Diponegoro University (Class of 2018). This study involved 226 subjects with inclusion criteria: 1) 18-25 years old, 2) registered as an active final year student in Medical Department, Faculty of Medicine, Diponegoro University and 3) willing to become a subject through informed consent. Exclusion criteria were 1) subjects diagnosed with mental disorders and 2) subjects using psychotropic drugs and/or undergoing therapy for mental disorders.

Data obtained were demographic factors (gender, residency status, academic achievement and economic status), Rosenberg Self-Esteem Scale (RSES) and Perceived Stress Scale (PSS-10) questionnaire data. Research subjects who met the inclusion and exclusion criteria were given informed consent as a form of approval and were asked to fill out an identity form, Rosenberg Self-Esteem Scale (RSES) questionnaire and Perceived Stress Scale (PSS-10) questionnaire according to the instructions and guidelines provided.

Self-esteem was measured using Rosenberg Self-Esteem Scale (RSES) questionnaire, in its Indonesian validated version, consisting of 10 items and was categorized into low self-esteem (score ≤15) and high self-esteem (score 16-30). Stress levels was assessed using the Indonesian validated version of Perceived Stress Scale (PSS-10) questionnaire, which uses a Likert scale by giving a value ranging from 0 to 4, and higher scores refer to higher stress levels. Scores ranging from 0-12 indicate mild stress, 13-26 indicate moderate stress and 27-40 indicate severe stress. We performed an analysis using the Statistical Product and Service Solutions (SPSS) application and examine the correlation between each variable using Spearman and Lambda Correlation Tests. This study had acquired ethical clearance and was approved by the Ethical Committee of Faculty of Medicine, Diponegoro University.

3. Result

On the other hand, the two other factors, virtual issues and virtual information, did not show a significant correlation with self-esteem as indicated by a p-value greater than 0.05.

There were 226 final year medical students, Faculty of Medicine, Diponegoro University, involved in this research. Initially, 233 questionnaires were distributed. However, five students were diagnosed with mental disorders and two subjects did not approve the informed consent.

Demographic factors used in this study were gender, residency status, academic achievement and economic status, as shown in Table 1.

Table 1. Demographic characteristics of the subjects

Characteristics	Frequency	%
Gender		
Male	81	35,8
Female	145	64,2
Residency status		
With parents	164	72,6
Alone (rent/boarding)	59	26,1
With relatives	3	1,3
Academic achievement		
Very good	91	40,3
Good	90	39,8
Average	45	19,9
Poor	0	0
Economic status (rupiah)		
<1.000.000	50	22,1
1.000.000-2.000.000	112	49,6
>2.000.000	64	28,3

Table 1 reveals that the majority of the subjects (64.2%) were females. Subjects living with parents were represented by 72.6% of the students. Most subjects (40.3%) also had a very good academic achievement. Subjects with monthly allowance ranging from 1-2 million rupiah were represented by 49,6% of the students.

Table 2. Characteristics of the subjects based on self-esteem (RSES) and stress levels (PSS-10)

Variables	Frequency	%
Self-esteem (RSES)		
Low	69	30,5
High	157	69,5
Stress levels (PSS-10)		
Mild	65	28,8
Moderate	152	67,3
Severe	9	4,0

Table 2 shows that 157 subjects (69.5%) had high self-esteem, while the other 69 subjects (30.5%) had low self-esteem. Among 226 subjects, 152 subjects (67.3%) were found to have moderate stress, 65 subjects (28.8%) had mild stress, and nine subjects (4.0%) had severe stress.

Demographic factors (gender, residency status, academic achievement and economic status) showed no significant relationship with neither *self-esteem* nor stress levels (p>0.05) (Table 3).

Table 4. Relationship between self-esteem and stress levels

Spearman Correlation Test	
Correlation coefficient	-.385
Sig. (two-tailed)	.000*
Frequency	226

*. Significant (p<0,05)

There was a significant relationship (p=0.000) between self-esteem and stress levels with a moderate negative correlation (Table 4).

4. Discussion

In this study, 2.2% of respondents were found to have a very low level of social media addiction,

The result of this study showed that the majority of the subjects had high self-esteem. This result was consistent with past research by Suparman which the majority of the subjects (55%) also had high self-esteem.[7] According to previous studies, young adults tend to have higher self-esteem as they have more power, achievements and control over themselves and their environment than adolescents.[2,8]

Gender was insignificantly associated with self-esteem, which is consistent with previous research by Srivastava N, et al. and Teoh HJ, et al.[9,10] Bleidorn W, et al. correspondingly stated that a universal mechanism influenced self-esteem. Even though males tend to have higher self-esteem than females in their study, but it was reported that both genders had higher self-esteem in developed countries with individualistic and affluent

tendencies. Thus, explaining why self-esteem is more likely to be the result of cultural influences than gender.[11]

Residency status also showed an insignificant relationship with self-esteem. This finding was in conformance with a previous study by Marron, which involved 160 students in America. According to previous research, individuals who do not live with their parents tend to have higher self-esteem because they are no longer dependent on their parents. Hence, they feel more competent and independent than individuals living with their parents. However, individuals who no longer live with their parents face more significant challenges in life, thereby lowering their self-esteem. On that account, the two contradictory things explained why self-esteem does not experience changes.[12]

The result also suggested an insignificant relationship between academic achievement and self-esteem, which seem to align with several previous studies.[13–15] Most students consider a degree is more of a priority than GPA, for this reason, they focus more on assessing the characteristics and competence of other individuals.[15] Research by Pullmann H, et al. suggested two possibilities explaining why individuals with poor academic achievement did not necessarily have low self-esteem: 1) individuals with superior academic achievement seemed more likely to have a critical view of themselves and 2) individuals with poor academic achievement compensated their academic deficiency by elevating their self-esteem.[16] Therefore, self-esteem does not entirely affect self-esteem.[15]

Economic status was found to be insignificantly associated with self-esteem. Contrary to this finding, Parmar SD reported a significant relationship between economic status and self-esteem.[17] A possible explanation regarding this discrepancy was likely a result of sample homogeneity. The present finding pronounced that the majority of students (67.3%) had moderate stress levels. Parallel to this finding, Ambarwati PD, et al. reported that 57.4% of students experienced moderate stress. A previous study by Pasaribu BS also had moderate stress.[18,19] According to Pasaribu BS, moderate stress could occur when individuals are exposed to stressors for several hours to days.[19] Symptoms that arise include irritability, excessive action, resting difficulty, and anxiety to the point of fatigue.[20]

Tabel 3. Relationship between demographic characteristics of the subjects, self-esteem, and stress levels.

Variables	Self-esteem		*p*	r	Stress levels			*p*	r
	Low	High			Mild	Moderate	Severe		
Gender[£]									
Male	21	60	.262	.006	29	50	2	.107	.010
Female	48	97			36	102	7		
Residency status[£]									
With parents	49	115	.392	.008	48	108	8	.931	.002
Alone (rent/boarding)	18	41			16	42	1		
With relatives	2	1			1	2	0		
Academic achievement[€]									
Very good	27	64	.596	.035	27	61	3	.541	-.041
Good	26	64			28	57	5		
Average	16	29			10	34	1		
Poor	0	0			0	0	0		
Economic status[€]									
<1.000.000	18	32	.286	.071	13	34	3	.497	-.045
1.000.000-2.000.000	34	78			34	72	6		
>2.000.000	17	47			18	46	0		

[£]. Lambda Correlation Test
[€]. Spearman Correlation Test

The present study showed an insignificant relationship between gender and stress levels, which was in accordance with several previous studies. Although there was no significant relationship, this finding was in line with several previous studies, which stated that the relationship between the two variables was not significant and females tend to have higher stress levels.[21–23] Research showed that females were physically and emotionally more vulnerable and experienced greater levels of sadness, disappointment, and nervousness when dealing with stress than males.[24,25]

Residency status was also found to have an insignificant relationship with stress levels in this study. A study conducted by Shadid A, et al. reported that higher stress was found in students who lived with their family or relatives.[26] Nonetheless, several other studies reported that students had different perceptions regarding stressors. When individuals perceive something to be harmless, their stress levels are lower and vice versa. Therefore, the study results were consistent with previous studies that also stated that the relationship between residence status and stress levels was insignificant.[27,28]

The result of this study showed an insignificant relationship between academic achievement and stress levels. Despite countless workloads and intensive class hours, the adaptive mechanism of final year medical students helped them in averting high stress, resulting minimal impact on their stress levels. Hence, this result was parallel with previous studies.[23,27,29,30]

The current study also revealed an insignificant relationship between economic status and stress levels, which is consistent with previous research conducted by Legiran et al. and Amiruddin.[27,31] It seems plausible that students did not perceive pocket money as a threat. Thus, students handled the stressors well.[27]

The Spearman Correlation Test results showed a significant relationship between self-esteem and stress levels with a negative correlation coefficient with a value of -0.385. This finding suggested that an increase in self-esteem causes a decrease in stress levels and vice versa. Significance value (Sig.) of 0.000 ($p<0.05$) revealed a significant relationship between self-esteem and stress levels with moderate correlation strength. An alternative explanation would be that stress levels were not purely influenced by self-esteem, but other factors such as academic, physical, social and emotional factors also played a role.[32]

Although there have been few studies on self-esteem by far, this significant result was consistent with a study conducted by Juniartha IGN, et al., which revealed the same result. However, their study suggested a weak correlation strength between the two variables.[33]

Previous studies revealed that higher self-esteem in individuals allows them to dissociate oneself from various stress episodes. Individuals with higher self-esteem had a positive approach to perceiving things. Thus, individuals could deal with them realistically and truly understand their strengths and weaknesses when faced with stressors.[3] In this regard, high self-esteem could be a powerful weapon to effectively adapt to stressful situations.

On the other hand, individuals with low self-esteem established low confidence in their competence and critical of their own self-worth and tend to be more susceptible to stress symptoms.[34] With that intention, the current finding showed the importance of self-esteem to contend against high-stressor environments. Thus, it could be a potent encouragement for students to control their stress levels better.

The limitation of this study was the incapability to analyze other factors that might affect each variable.

5. Conclusion

This study has shown a significant relationship between self-esteem and stress levels in final year medical students, Faculty of Medicine, Diponegoro University. Future research should address the relationship between each variable and other factors that had not been analyzed in this study.

Ethical Approval

This study had acquired ethical clearance and was approved by the Ethical Committee of Faculty of Medicine, Diponegoro University

Conflicts of Interest

The authors declare that there was no conflict of interest.

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