The Relationship between Self-Esteem and Anxiety Levels in Final-year Medical Students

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ABSTRACT

Background: Self-esteem is an evaluation of oneself that can be positive or negative. Self-esteem affects the way individuals value and views themselves and others. Self-esteem increases gradually during young adulthood. On the other hand, anxiety disorders are also prone to occur during this time. Individuals with low self-esteem are found to often experience symptoms of anxiety.

Objective: The purpose of this study is to examine the relationship between self-esteem and anxiety levels among final year medical students, Faculty of Medicine, Diponegoro University.

Methods: This research is a correlational analytic observational study with a cross-sectional design. Total sampling was used in this research involving final year medical students, Faculty of Medicine, Diponegoro University (Class of 2018). Self-esteem was assessed using the Rosenberg Self-esteem Scale (RSES), and anxiety levels were assessed using the Zung Self-rating Anxiety Scale (ZSAS) that had been tested valid and reliable. Data were analyzed using Spearman and Lambda Correlation Tests.

Results: There were 226 respondents involved in this study. The majority of respondents had high self-esteem (69.5%) and a mild level of anxiety (84.1%). Gender was known to affect the level of anxiety (p=0.026) but not self-esteem. Academic achievement and residency status was known not to affect self-esteem and anxiety levels. There was a significant relationship (p=0.000) between self-esteem and anxiety levels with a moderate negative correlation (r=-0.289).

Conclusion: There was a significant relationship between self-esteem and anxiety levels.

1. Introduction

All manuscripts must be in English. These guidelines include complete descriptions of the fonts, spacing, and related information for producing your proceedings manuscripts. Self-esteem is an individual's overall positive or negative evaluation of oneself that depends on the desires and expectations of the individual's ability to realize them[1]. Self-esteem refers to individuals' perceptions and appraisements of self-worth, self-respect, self-confidence, and belief in their skills, abilities, and social relationships[2]. The forming of self-esteem is a long process and occurs throughout human life[3]. High self-esteem expresses a positive personal state. Individuals have high resilience, shown by the ability to adapt and survive well under pressure. High self-esteem also certainly influences individuals' well-being and success. In comparison, low self-esteem can foment negative conditions[4]. Low self-esteem can be a pressure for individuals' psychology and tend to aggrevate conditions that lead to sadness or depression, one of which is anxiety[5]. Anxiety disorders are the most prevalent group of mental disorders. According to Riskesdas 2018, the prevalence in Indonesia is 6% (aged

fifteen years and over) or around fourteen million people[6]. Anxiety is an adaptive reaction consisting of physiological symptoms, including worries about something unwanted in the future or fear of actual situations that affect the individual's cognitive, affective, and behavioral[7-9]. Anxiety is a natural thing, in contrast to anxiety disorders. Pathological anxiety is triggered by overstimulation or an error in perceiving a threat that generates an exaggerated and inappropriate response[8]. Symptoms of anxiety come up as a result of the central nervous system mechanism (endocrine system and autonomic nervous system), which influences cognitive, physiological, behavioral, and affective[8-10].

Self-esteem has a close relationship with emotional stability, extraversion, and consciousness, which in young adulthood is found an increase emotional stability and consciousness. Therefore, young adulthood is a significant developmental stage to increase self-esteem[11]. Nevertheless, young adults undergo substantial changes in their physical and cognitive, as well as psychosocial because it is a transition span from adolescence to adulthood. Here and now, symptoms of anxiety frequently emerge and are often neglected. This matter causes young adulthood as the onset of anxiety disorder[12]. The level of

self-esteem is thought to affect anxiety symptoms that appear in young adults. This study aimed to determine the relationship between self-esteem and anxiety levels in final-year medical students, Faculty of Medicine, University of Diponegoro.

2. Methods

This research is a correlational analytic observational study with a cross-sectional design. The study was conducted in June-July 2021, and data collection was carried out once a time. Total sampling was used in this research involving final year medical students, Faculty of Medicine, Diponegoro University (Class of 2018), totalling 233 students. The inclusion criteria in this study were (1) aged 18-25 years, (2) registered as an active final year medical student, Faculty of Medicine, University of Diponegoro, and (3) willing to become respondents in this study by informed consent. Exclusion criteria in this study included (1) being diagnosed with a mental disorder and (2) currently taking psychotropic drugs or therapy for mental disorders.

Self-esteem was assessed by the Rosenberg Self-esteem Scale (RSES) questionnaire consisting of 10 questions. Each question has a score of 0-3 and then will be accumulated. A score of 15 indicates low self-esteem, and >16-30 indicates high self-esteem. Anxiety levels were assessed using the Zung Self-rating Anxiety Scale (ZSAS), consisting of 20 questions. Each question has a score of 1-4. The higher the score, the higher the level of anxiety, and vice versa. The total score of 20-44 indicates a mild level of anxiety, 45-59 indicates a moderate level of anxiety, 60-74 indicates a severe level of anxiety, and 75-80 indicates panic. For subjects who were included as accessible populations and inclusion criteria were asked for their willingness to become respondents in this study through informed consent. Further, subjects were asked to fill out the RSES and ZSAS questionnaires distributed via the Google form link according to the guidelines listed.

Data collected will be analyzed using descriptive analysis to determine the characteristics of the respondents and the Spearman and Lambda test to figure the correlation of the two variables. Data analysis using SPSS Statistics version 26 on Windows.

3. Result

This study involved 226 respondents from final year medical students, Faculty of Medicine, Diponegoro University, who met the inclusion and exclusion criteria. Five respondents were included in the exclusion criteria (currently or had experienced mental disorders), and two respondents did not agree on the informed consent.

Based on table 1, this study involved 81 respondents (35.8%) males and 145 respondents (64.2%) females. Hence, the respondents of this study were dominated by women. Most of the respondents live with their parents, approximately 164 respondents (72.6%). The academic achievement represented by GPA score presents that most respondents have a very good GPA, which is about 91

respondents (40.3%). There are no respondents classified as having a poor GPA. The economic status, represented by monthly allowance, reveals that most respondents obtain 1.000.000-2.000.000 rupiahs every month, approximately 112 respondents (49.6%). The majority of respondents have high self-esteem (69.5%) and mild anxiety (84.1%). There were no respondents who experienced severe anxiety and panic.

Based on Table 2 and 3, gender is known to affect anxiety levels (p=0.026) but not on self-esteem (p>0.05). While academic achievement, residency status, and economic status are known not to affect self-esteem and anxiety levels (p>0.05).

Table 1. Demographic characteristics

Variable	Frequency	%
Gender		
Man	81	35,8
Woman	145	64,2
Residency status		
With parents	164	72,6
Living alone (boarding/rent)	59	26,1
With relatives	3	1,3
Academic achievements		
Very good	91	40,3
Good	90	39,8
Average	45	19,9
Poor	0	0
Self-esteem		
Low	69	30,5
High	157	69,5
Anxiety levels		
Mild	190	84,1
Moderate	36	15,9
Severe	0	0
Panic	0	0
Economic status		
<1.000.000	50	22,1
1.000.000-2.000.000	112	49,6
>2.000.000	64	28,3

Table 2. The relationship between demographic characteristics and self-esteem

Variable	Self-esteem		p	r
	Low	High		
Gender[£]				
Man	21	60	.262	.006
Woman	48	97		
Residency status[£]				
With parents	49	115		
Living alone (boarding/rent)	18	41	.392	.008
With relatives	2	1		
Academic achievements[€]				
Very good	27	64		
Good	26	64	.596	.035
Average	16	29		
Poor	0	0		

[€].Spearman correlation test [£].Lambda correlation test

The Spearman correlation test showed that self-esteem had a significant relationship with anxiety levels (p=0.000) with moderate negative correlation (r=-0.289).

4. Discussion

Data analysis presents that the majority of respondents have high self-esteem. Self-esteem known gradually increases in young adulthood. According to Jenny Wagner et al., self-esteem is influenced by risks and constraints faced at a certain age[13].

In young adulthood, self-esteem is said to increase because individuals begin to attain autonomy and develop social relationships with their surroundings[14]. Parallel with Suparman's 2019 research on self-esteem in college students, where it was found that 55% of respondents had high self-esteem[15]. Jenny Wagner et al. in 2013 also showed self-esteem increased gradually during the transition stage, while delayed development or low self-esteem refers to the variability of the individual[16]. Based on the results of data analysis, there are no significant relationship found between gender (p=0.262), residency status (p=0.392), and academic achievement (p=0.596) with self-esteem.

Results showed that the majority of respondents had mild anxiety. Mild anxiety is an adaptive response that appears as a result of threats faced by individuals. In line with Tri Yuniarti et al., most college students experience mild anxiety (62.8%)[17]. Anxiety can arise due to academic stressors and worries about the future[18]. Academic burdens such as exams and piles of assignments certainly affect individuals' anxiety. In this study, sampling was carried out when the subject almost accomplished learning and exams in the sixth semester which the academic stressors were mild. However, each individual has a different level of anxiety given differences in lifestyle, learning methods, and psychological factors[19].

Based on data analysis, gender and anxiety levels have a significant relationship (p=0.026). Ghodasara et al. also showed significant results between gender and anxiety levels that women had twice the level of anxiety rather than men[20]. Estrogen and progesterone have an essential role in regulating the neurotransmitter system, and so on, they are considered as mediators of anxiety. The female reproductive cycle, characterized by fluctuations in estrogen and progesterone, can also affect the severity and development of anxiety. Estrogen has a trophic effect that can increase neurotransmission of serotonin, has a mood-elevating effect, whereas progesterone is associated with a dysphoric mood effect. This refers to a higher level of anxiety vulnerability in women[21].

Based on the results of data analysis, it was found that residency status (p=0.055) and GPA (p=0.866) did not have a significant relationship with anxiety levels. Economic status is also one of the factors that affect the anxiety level. However the results were not significant between the two variables (p=0.028).

The Spearman correlation test showed a significant relationship (p=0.000) with moderate negative correlation (r=-0.289). This shows that the higher the individual's self-esteem, the lower anxiety, and vice versa. The results are also in line with previous studies, namely in the study of Ntemsia et al. (r=-0.63; p<0.001)[22], Basco et al. (r=-0.514; p=0.000)[23], and Mustafa et al. (r=-0.315; p<0.015)[4]. However, low self-esteem is not the only factor that affects the level of anxiety; thus, the strength of the correlation between variables is moderate[15].

Table 3. The relationship between demographic characteristics and anxiety levels

Variable	Anxiety levels				p	r
	Mild	Moderate	Severe	Panic		
Gender[£]						
Man	74	7	0	0	.026*	.022
Woman	116	29	0	0		
Residency status[£]						
With parents	132	32	0	0		
Living alone (boarding/rent)	55	4	0	0	.055	.026
With relatives	3	0	0	0		
Academic achievements[€]						
Very good	78	13	0	0		
Good	73	17	0	0	.866	-.011
Average	39	6	0	0		
Poor	0	0	0	0		
Economic status[€]						
<1.000.000	40	10	0	0		
1.000.000-2.000.000	94	18	0	0	.280	-.072
>2.000.000	56	8	0	0		

[€].Spearman correlation test [£].Lambda correlation test *significant(p<0,05)

Young adulthood is full of considerable opportunities and challenges. Where individuals are faced with various complex situations and new conditions. As previously discussed, challenges faced can lead to anxiety in each individual, primarily for medical students who are faced with quite heavy academic stressors[24].

Rosenberg found several factors related to self-esteem and affect anxiety levels. Individuals with low self-esteem often experience unclear perceptions of their self-image, which is valuable for each individual. When individuals have instability and uncertainty with their self-image, anxiety could be triggered by this sense of loss. In addition, individuals with low self-esteem are generally sensitive or vulnerable to criticism or negative opinions about themselves. When individuals are disturbed by those conditions, it often triggers psychosomatic symptoms of anxiety. When individuals feel worthless in life, they can also develop feelings of isolation. Individuals are unable to open up to others wholly. This situation triggers physical and psychological loneliness, triggering anxiety due to a lack of social support from surroundings[5].

The statement above shows the importance of self-esteem in influencing individuals' anxiety. High self-esteem can provide confidence in facing challenges (self-efficacy). In addition, the characteristics possessed by individuals with high self-esteem can prevent psychosomatic symptoms of anxiety. Anxiety can happen to anyone, and it is normal. However, excessive and prolonged anxiety can have a negative impact, especially on academic performance[25].

The results of this study indicate that young adults, especially medical students, can overcome challenges in life that can provoke anxiety; one of them is increased self-esteem.

The limitation of this study is unable to analyze other factors that can affect each variable.

5. Conclusion

Based on the research that has been done, it can be concluded that there is a significant relationship between self-esteem and anxiety levels in final year students of the Medical Study Program, Faculty of Medicine, Diponegoro University. Suggestions for further research is to examine the relationship of other factors that have not been studied with the two variables.

Ethical Approval

This study has received ethical clearance from the Health Research Ethics Commission (KEPK) Faculty of Medicine, Diponegoro University number 146/EC/KEPK/FK-UNDIP/V/2021.

Conflicts of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author Contributions

Conceptualization, J.N., F.F., A.F., and T.H.; methodology, J.N., F.F., A.F., and T.H.; software, J.N.; validation, J.N.; formal analysis, J.N.; investigation, J.N. and F.F.; resources, J.N. and F.F.; data curation, J.N. and F.F.; writing—original draft preparation, J.N., F.F., A.F., and T.H.; writing—review and editing, J.N., F.F., A.F., W.S., and T.H.; supervision A.F., W.S., and T.H.; project administration, J.N. and F.F.; funding acquisition, J.N. and F.F.

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