



The Relationship Between the Degree of Severity of Acne Vulgaris and the Level of Self-Esteem in Students of Private High School Muhammadiyah 02 Medan

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Abstract. Acne vulgaris is often seen on the face which increases a person's self-esteem problem. This study aims to see whether there is a relationship between the severity of acne vulgaris and the level of self-esteem in students of Muhammadiyah 02 Medan Private High School. This study involved 88 student subjects who had acne vulgaris. It is a descriptive analytical study with a cross-sectional design. The collected data were analyzed using the Chi square test. The findings of the study explain that the proportion of the severity of acne vulgaris based on gender is dominated by moderate severity acne vulgaris with male gender, namely 22 people (19.9%). The proportion of the severity of acne vulgaris based on age is dominated by mild severity acne vulgaris aged 17 years (22.3%). The proportion of the level of self-esteem of the majority is in the normal category with a total of 36 people (40.9%). There was a significant relationship between the severity of acne vulgaris and self-esteem levels ($p=0.029$). The conclusion of this study explains that there is a significant relationship between the severity of acne vulgaris and self-esteem levels in students at Muhammadiyah 02 Medan Private High School.

Keyword: Acne Vulgaris; Adolescents; Self-Esteem; Severity; Skin Health

1. INTRODUCTION

Acne vulgaris is caused by hypersensitivity of the sebaceous glands to normal circulating androgen levels, which is exacerbated by Propionibacterium acnes, leading to inflammation. Acne vulgaris is a common, chronic inflammatory disorder of the pilosebaceous glands, which consist of hair follicles and sebaceous glands. This is primarily caused by increased sebum production, follicular hyperkeratinization, bacterial colonization, and inflammation. Acne vulgaris most commonly occurs on areas of the body with numerous sebaceous glands, such as the face and trunk, where sebaceous follicles predominate. It can also occur on the neck and upper extremities. Whiteheads appear as white or flesh-colored, dome-shaped papules without readily visible central pores and without clinical signs of inflammation. Blackheads typically appear as flat or slightly raised black lesions with a dilated central follicular opening containing black keratotic plugs, typically measuring 1-3 mm in diameter. Acne vulgaris can lead to scarring due to inflammation, depression, anxiety, poor facial aesthetics, and low self-esteem. Acne vulgaris is not life-threatening but will have a psychosocial impact on sufferers.

According to Rosenberg, self-esteem is defined as a person's attitude based on their perception of how they value and evaluate themselves. Essentially, self-esteem reflects an attitude toward themselves, expressed through cognitive and affective processes.⁷ Self-esteem

reflects how a person feels about themselves and is an understanding related to psychological constructs such as self-image, self-concept, self-perception, and self-acceptance. Many factors determine the development of self-esteem. However, the most common are reduced physical capacity and mental abilities, increased symptoms due to comorbidities, gender, ethnicity, socioeconomic status, social relationships, and stressful life events.

A study by Saiya et al. conducted in Ambon, Indonesia in 2023 found a significant relationship between the severity of acne vulgaris and self-esteem ($p < 0.001$). This suggests that facial skin with acne vulgaris can impact a person's self-esteem. Low self-esteem can lead sufferers to withdraw from their environment. Furthermore, it can also be a risk factor for depression, anxiety, and other psychological disorders.

Based on the explanation above, the researcher intended to determine whether there was a relationship between the severity of acne vulgaris and self-esteem levels in students at Muhammadiyah 02 Private High School, Medan.

2. METHOD

This research is a descriptive analytical study with a cross-sectional design. It was conducted at Muhammadiyah 02 Private High School, Medan, from July to November 2023. The population and sample were students at Muhammadiyah 02 Private High School, Medan, who suffered from acne vulgaris. The basic data collection method in this study was conducted using direct observation at the research location. Data were collected through a questionnaire and administered to the study sample who met the inclusion criteria.

The data were analyzed by the author and a general practitioner to assess the severity of acne vulgaris. Afterward, the Rosenberg Self-Esteem Scale (RSES) questionnaire was administered to assess individuals' self-esteem.

The data collected through the questionnaire were reprocessed and analyzed using Statistical Product and Service Solutions (SPSS) software. Univariate analysis was conducted to assess the proportion of each variable, namely acne vulgaris severity and self-esteem. Bivariate analysis was used to prove the research hypothesis, namely whether there is a relationship between the severity of acne vulgaris and the level of self-esteem in students at Muhammadiyah 02 Private High School, Medan. Data analysis was performed using the Chi-Square test.

3. RESULT AND DISCUSSION

Table 1. Results of Frequency Distribution of Respondent Characteristics.

Respondent Characteristics	Frecuency	percentage
Respondent Age		
16 years	25	28.4
17 years	56	63.6
18 years	6	6.8
19 years	1	1.1
Gender		
Male	53	60
Female	35	40
Respondent Class		
X	29	33
XI	29	33
XII	30	34.1
Severity of Acne Vulgaris		
Light	35	39.8
Medium	33	37.5
Heavy	20	22.7
Total	88	100

Table 1 shows that the total sample size in this study was 88, with the largest age group being 17 years old. The majority were male, with the largest sample size being in grade 12, and the highest level of acne vulgaris severity being mild.

Table 2. Proportion of Acne Vulgaris Severity by Gender.

Severity of Acne Vulgaris	Gender	
	Male	Female
Light	14 (21,1)	21 (13,9)
Medium	22 (19,9)	11 (13,1)
Heavy	17 (12)	3 (8)
TOTAL	53	35

Table 2 concludes that in this study, male subjects were more predominant, with moderate acne vulgaris severity.

Table 3. Proportion of Acne Vulgaris Severity by Age.

Severity of Acne Vulgaris	Usia (n%)		
	16th	17th	18th
Light	8 (9,9)	24 (22,3)	3 (2,8)
Medium	9 (9,4)	20 (21)	4 (2,6)
Heavy	8 (5,7)	12 (12,7)	0 (1,6)
TOTAL	25	56	7

Table 3 shows that in this study, subjects aged 17 years and older were more likely to have mild acne.

Table 4. Proportion of Self-Esteem Levels.

CATEGORY	FREQUENCY	PERCENTAGE (%)
Normal	21	23.9
Low	36	40.9
High	30	34.1
TOTAL	88	100

From Table 4, it can be concluded that in this study, the subjects with the highest number of cases were those with normal skin, followed by those with high and low self-esteem.

Table 5. Relationship between Acne Vulgaris Severity and Self-Esteem Levels.

Severity of Acne Vulgaris	Self-Esteem Level								P value
	Normal		Low		High		Total		
	n	%	n	%	n	%	n	%	
Light	13	14.3	6	8.8	16	11.9	35	35.0	<0.029*
Medium	17	13.5	6	8.3	10	11.3	33	33.0	
Heavy	6	8.2	10	5.0	4	6.8	20	20.0	
Total	36	36.0	22	22.0	30	30.0	88	88.0	

After analysis, the Chi-square test yielded a p-value of <0.029, which is <0.05. Therefore, it can be concluded that there is a significant relationship between the severity of acne vulgaris and self-esteem levels in students at Muhammadiyah 02 Medan Private High School.

Discussion

In this study, the researchers used the Rosenberg Self-Esteem Scale (RSES) questionnaire as a self-esteem measurement tool. The researcher used this questionnaire because it has been used to measure self-esteem and has demonstrated good concurrent validity. Furthermore, the RSES is easy to administer and understandable to adolescents.¹⁰ In this study, it was found that acne vulgaris sufferers were predominantly male, with 53 people (60.2%) compared to females with 35 people (39.8%). This result is in line with Luthfianissofa's research conducted in Tangerang, Indonesia in 2019 where the majority of acne vulgaris sufferers were male, with 71 people (53.8%) compared to females with 61 people (46.2%). Another study conducted in Surabaya, Indonesia in 2019 also revealed that acne vulgaris sufferers were more male, with 91 people (58.3%) compared to females with 65 people (41.7%). Similarly, a study conducted in Jakarta, Indonesia in 2022 where acne vulgaris sufferers were predominantly male, with 69 people (73.4%) compared to females with 25 people (26.6%).^{3,11,12}

In contrast, Damayanti's research conducted in Surabaya, Indonesia, in 2022 found that acne vulgaris sufferers were predominantly female (63 people (57.8%), compared to males (46 people (42.2%). Another study conducted by Chesia in Tangerang in 2023 also revealed that females predominated, with 23 people (71.87%) compared to males (9 people (28.13%).^{13,14}

The differences in each study are due to various factors, one of which is because the prevalence of acne in boys increases from 40% at age 12 to 95% at age 16. In girls, the prevalence increases similarly from 61% to 83%.¹⁵ Acne vulgaris is more common in adolescent boys than in adolescent girls. Conversely, acne vulgaris is more common in adult women. Most patients with acne vulgaris usually have normal androgen levels in their bodies. However, in conditions such as polycystic ovary syndrome, adrenal or ovarian tumors, excessive androgen production in the body results in acne. Some of the roles of androgens in the development of acne involve several mechanisms, namely the adrenal glands and gonads secrete androgens, sebaceous glands can also synthesize androgens through the conversion of dheas to testosterone through the action of several enzymes, type i 5-alpha reductase in the sebaceous glands converts testosterone to 5-alpha-dihydrotestosterone (dht), sebaceous glands and keratinocytes of the outer root sheath of the follicular epithelium have androgen receptors that bind dht and testosterone, androgens stimulate the growth and secretory function of the sebaceous glands, causing seborrhea and acne formation, a lipid-rich anaerobic environment allows c acnes to thrive.¹⁰

The prevalence of acne vulgaris is higher in males because sebum production is mediated by stimulation from androgens, which direct the growth, differentiation, and secretory activity of the sebaceous glands. Pubertal males have greater sebum production, regardless of the presence of acne vulgaris, largely due to increased androgen levels.¹⁶ Although the onset of acne vulgaris in both males and females begins at puberty, it likely persists into late adolescence due to transient increases in insulin and IGF-1 levels. Furthermore, the severity of acne vulgaris is estimated to be greater in males than in females in late adolescence.¹⁷

In this study, the majority of subjects were 17 years old. Acne vulgaris generally first appears during early puberty, between 12 and 15 years of age, with a peak incidence rate between 17 and 21 years of age.¹⁸

Interpreting self-esteem levels revealed that the majority of study subjects had normal self-esteem, with 36 (40.9%) having low self-esteem, compared to 21 (23.9%) having low self-esteem and 30 (34.1%) having high self-esteem. This finding aligns with a 2018 study by Febrina et al., which found that adolescents experiencing puberty tend to experience a decline in self-esteem.¹⁹ The results of this study are similar to those conducted by Agustin, Muhammad, and Prasetya, which found that more students experienced normal self-esteem compared to those who underwent various treatments.²⁰ A normal self-esteem score reflects a person's sense of happiness. Individuals with normal self-esteem experience greater levels of

happiness, optimism, and motivation than those with low self-esteem. They also experience less depression, anxiety, and negative moods.²¹

Self-esteem can be influenced by several factors. In school-age adolescents, their social relationships, talents, psychological well-being and positive emotions, how they use social media, their satisfaction with their lives, their tendency to avoid social interactions (shyness), their friendships, psychological distress, loneliness, and so on are all influencing factors.²²

Based on the Chi-square test, the p-value was 0.029 ($p < 0.05$). It can be concluded that there is a significant relationship between the severity of acne vulgaris and self-esteem levels in students at Muhammadiyah 02 Private High School, Medan. These results align with previous research conducted by Saiya et al. in Ambon, Indonesia, in 2023, which found a significant relationship between the severity of acne vulgaris and self-esteem ($p < 0.001$).⁹

This contrasts with research by Elga, Lydia, and H. conducted in Manado, Indonesia, in 2015, which found no significant relationship between self-esteem and acne (acne vulgaris) in adolescents at SMAN 7 Manado, with a significance value of 0.532 (> 0.05).²³

The difference between these two studies is due to several factors. Self-esteem is defined as a person's image in the eyes of others, their self-evaluation of their qualifications, and their sense of dignity and honor as a human being.²⁴ Various factors influence self-esteem, one of which is physical condition.²⁵ Acne vulgaris is a condition that affects a person's physical condition. Previous research has shown that acne vulgaris affects adolescents' quality of life and tends to worsen it.⁶

Acne vulgaris affects many people worldwide. Patients with acne vulgaris continue to suffer from comedonal and inflammatory lesions, often affecting the most visible areas of the skin during the most sensitive time of psychosocial development. In many cases, acne vulgaris lesions leave visible, permanent scars and contribute to psychosocial impairment.²⁶ The visual appearance of acne vulgaris and its sequelae, including scarring and pigmentation changes, often result in psychological and social morbidity due to a person's preoccupation with their appearance.²⁷

In this study, the severity of acne vulgaris and self-esteem were associated with reduced physical and mental capacity, increased symptoms due to comorbid factors, gender, ethnicity, socioeconomic status, social relationships, and stressful life events. Low self-esteem can lead sufferers to withdraw from their environment. It can also be a risk factor for depression, anxiety, and other psychological disorders.²⁸

From these discussions, it can be concluded that there is a significant relationship between the severity of acne vulgaris and self-esteem. The more severe the acne vulgaris, the

lower the person's self-esteem. This aligns with the researchers' hypothesis. After obtaining the research results, several limitations were identified. These include the existence of other variables that must be assessed in examining the relationship between the two variables, as well as the heterogeneity of precipitating factors in terms of academics, dietary patterns, and environmental factors among the study subjects.

4. CONCLUSION

There is a significant relationship between the severity of acne vulgaris and self-esteem levels among students at Muhammadiyah 02 Medan Private High School. The frequency distribution of acne vulgaris severity among students at Muhammadiyah 02 Medan Private High School shows a predominance of low-level students, with 35 students (39.8%). The frequency distribution of respondents' ages among students at Muhammadiyah 02 Medan Private High School shows a predominance of 17-year-olds, with 56 students (63.6%). The frequency distribution of respondents' gender among students at Muhammadiyah 02 Medan Private High School shows a predominance of males, with 53 students (60%). The self-esteem levels of students at Muhammadiyah 02 Medan Private High School are dominated by those with normal self-esteem, with 39 students (44.3%).

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