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Self-esteem, self-perception, and self-image of women with acne vulgaris at different age ranges

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Abstract

Acne vulgaris is a common inflammatory dermatosis and the most common disease affecting the hair and sebaceous unit. It usually localizes to the face and, on average, affects 9.4% of the population. Many patients treated for acne vulgaris experience symptoms of anxiety, depression, and social withdrawal, often accompanied by feelings such as anger. This can be particularly exacerbated when dermatological treatment fails to have the expected effect. Given the significant psychosocial effects of the aforementioned dermatosis, early intervention is crucial.

The survey was conducted between September 2023 and July 2024. The participants were patients of a cosmetology and aesthetic medicine clinic located in the city of Katowice, Poland. The Teenagers' Quality of Life Index (T-QoL) and Self-Esteem Scale by M. Rosenberg (RSES) were used to conduct the survey.

The study confirmed the significant impact of acne vulgaris on psycho-social aspects in women of different ages. Acne significantly lowers self-esteem and negatively affects the sufferers' perception of themselves and their appearance. The impact was shown to be more severe in a group of women over 27 years of age, who exhibited lower self-esteem compared to the younger group. Women with acne often feel the need to hide skin lesions and pay a lot of attention to their appearance, which can lead to reduced quality of life and emotional disturbances. A significant number of women have disturbed self-esteem and negative beliefs about themselves, which may be related to current beauty canons and social pressure for an unblemished appearance.

The study underscores the need for a holistic approach to female patients with acne vulgaris, considering both medical and psychological aspects, in order to effectively treat and improve psychological well-being.

Introduction

Acne vulgaris is a common inflammatory dermatosis and the most common disease affecting the hair and sebaceous unit. It usually localizes to the face and, on average, affects 9.4% of the population.[1] It is the eighth most commonly diagnosed disease worldwide. It mainly affects adolescents with a male predominance.[2,3]

It is manifested by non-inflammatory (blackheads) and inflammatory lesions (papules, pustules, cysts, and nodules). The etiopathogenesis of acne vulgaris is well understood and includes changes in the keratinization of hair follicle outlets, overproduction of sebum, and excessive colonization of the sebaceous gland by the anaerobic bacteria *Cutibacterium acnes*. The

influence of the produced inflammation on endocrine disorders with particular emphasis on sex hormones also seems to be not without influence.[4]

The localization of acne lesions directly correlates with the density of sebaceous glands, which is why the lesions are most often located in the upper body, especially on the face, chest, and back. The aforementioned areas are usually exposed and visible in daily functioning; therefore, acne can significantly impact psychosocial aspects.[5]

Many patients treated for acne vulgaris experience symptoms of anxiety, depression, and social withdrawal and are also accompanied by feelings such as anger. This can be particularly exacerbated when dermatological treatment fails to have the expected effect. Due to the profound psychosocial impact of the described dermatosis, it is important to take treatment early. The first changes occur during adolescence, when the formation of personal identity and self-esteem is a crucial moment for mental health. Prompt intervention can also prevent the formation of acne lesions such as scars and hyperpigmentation.[6] The most serious psychiatric disorders diagnosed in the course of acne vulgaris are depression and anxiety disorders. Studies clearly confirm the increased risk of developing these disorders in patients treated for acne.[7,8] When analyzing other psychiatric disorders, studies have shown a correlation with the occurrence of post-traumatic stress disorder. Patients with acne exhibited a greater incidence compared to the control group. Likewise, with the incidence of obsessive-compulsive disorder. The study indicated a greater prevalence of patients within the cohort diagnosed with acne vulgaris.[9,10]

The aim of the study was to analyze psychological aspects in women with acne vulgaris, assessing their self-esteem and how the presence of the skin disease affects daily functioning. The study also aimed to analyze whether the age of acne vulgaris sufferers affects their self-perception. It was hypothesized that acne vulgaris significantly affects sufferers' self-perception and causes them to feel embarrassed and ashamed in their relationships with others.

Materials and Methods

Study design

The survey was conducted between September 2023 and July 2024. The participants were patients of a cosmetology and aesthetic medicine clinic located in Katowice. After completing a consultation with a specialist and agreeing to participate in the study, patients filled out the survey form they received.

All survey participants were informed about the purpose of the study and its anonymity and were asked to accept the rules of data sharing. Information about informed and voluntary

participation in the study was at the beginning of the questionnaire. The study was conducted in accordance with the Declaration of Helsinki established by the World Medical Association and received approval from the Bioethics Committee.

Research tools

To conduct the study, we used the Teenagers' Quality of Life Index (T-QoL) questionnaire[11,12] to measure the current impact of skin disease on the quality of life of adolescents (people in the age range of 12-19) and the Self-Esteem Scale by M. Rosenberg (RSES).[13]

The T-QoL questionnaire contained 18 questions divided into categories: self-image, physical well-being and aspirations for the future, and psychological impact and relationships. Each question elicited responses including "never", "sometimes", and "always". A "never" response received 0 points, a "sometimes" response received 1 point, and an "always" response received 2 points. The maximum score of the questionnaire was 36 points, while the minimum score was 0 points. The higher the score, the greater the impact of the skin disease on the deterioration of the subject's quality of life. The Cronbach's alpha coefficient for this test was 0.893.

The study also used the RSES in the Polish adaptation by Łaguna *et al.*[13] (Cronbach's alpha=0.81-0.83). The scale contained 10 statements about beliefs about oneself. Respondents were presented with response options including "strongly agree", "agree", "disagree", and "strongly disagree". For questions 1-5, 1 point was awarded for the answer "strongly agree", 2 points for the answer "agree", 3 points for the answer "disagree", and 4 points for the answer "strongly disagree". For questions 6-10, the reverse scoring was applied according to the rules of interpretation of the scale (1 point was awarded for the answer "strongly disagree", 2 points for the answer "disagree", 3 points for the answer "agree", and 4 points for the answer "strongly agree"). The number of points obtained ranges from 10 to 40 maximum. In the Polish interpretation of the scale, the higher the score, the greater the impact of the skin disease on the deterioration of the subject's quality of life. A score ranging from 0 to 24 points signifies high self-esteem, 25 to 32 points indicates average self-esteem, and a score exceeding 33 points reflects very low self-esteem.

Study group

226 women participated in the survey. The largest age group was 21-26 years old (N=118, 52.21%), followed by 30-40 years old (N=41, 18.14%), 27-30 years old (N=38, 16.81%), 15-20 years old (N=19, 8.41%), and those over 40 years old (N=10, 4.42%). The subjects were divided into two age groups, an older group (OG) (over 27 years old, N=89) and a younger

group (YG) (11-26 years old, N=137), to assess whether the subjects' age affects self-perception.

Each subject had a dermatologist's diagnosis of acne vulgaris and acne lesions on their facial skin. Patients were asked how long they had been suffering from acne vulgaris. Most indicated more than 10 years (N=75, 33.19%), followed by 4-6 years (N=51, 22.57%), 7-10 years (N=46, 20.35%), 1-3 years (N=39, 17.26%), and less than a year (N=15, 6.64%).

The study's inclusion criteria were: i) consent from the participant or their legal guardian, in the case of minors, for participation and publication of results; ii) a diagnosis of acne vulgaris by a dermatologist; and iii) status as a patient at a cosmetology and aesthetic medicine clinic in Katowice, Silesian Voivodeship, Poland. The exclusion criteria included: i) absence of acne confined to the facial region; ii) refusal to consent to participate in the study or to the subsequent publication of results; and iii) presence of other facial skin conditions (*e.g.*, psoriasis, atopic dermatitis, rosacea, vitiligo).

Statistical analysis

Statistical analysis was performed using Statistica 13.3 software (TIBCO Software Inc., Palo Alto, CA, USA). Both parametric tests were used when assumptions about the normality of the data distribution were met, and non-parametric tests were used when these assumptions were not met to analyze the data. A normal distribution was tested for conformance using the Shapiro-Wilk test. Measurable parameter values (*e.g.*, measurement results) were presented using the arithmetic mean (average) and standard deviation. Non-measurable parameters (*e.g.*, qualitative scale scores) were presented using percentages. Independent qualitative characteristics were analyzed using the Chi^2 test of homogeneity.

A value of $p<0.05$ was taken as the level of statistical significance.

Results

When asked whether the appearance of facial skin causes feelings of embarrassment, 30.53% (N=69) of women answered "always", and 61.06% of respondents answered "sometimes". Embarrassment about their appearance was reported by 82.74% (n=187) of respondents. The presence of acne in 83.63% of women (N=189) made them feel uncomfortable around other people. The question of avoiding meeting new people was answered positively by 42.92% of respondents (N=97). Lack of acceptance from other people was feared by 54.42% (N=123) of respondents. Due to the occurrence of acne, 53.98% (N=122) of respondents reported crying.

In contrast, 80.53% (N=182) of female respondents indicated that their appearance does not affect their relationships with their closest friends, and 74.78% (N=169) answered that it does not affect their relationships with their closest person either.

Analysis of results from the T-QoL questionnaire

The lowest score obtained from the test was 0, while the highest was 35. The average score obtained from the T-QoL questionnaire was 15.54±7.71. The OG had an average score of 15.24±7.53, whereas the YG had an average score of 15.75±7.82.

Table 1 presents a comprehensive breakdown of results categorized by the younger and older groups.

Most of the questions on the T-QoL questionnaire yielded a significantly statistical difference in responses between the younger and older acne vulgaris groups.

Analysis of scores from the Rosenberg Self-Esteem Scale

The lowest score obtained was 10, while the highest score was 36. The average score obtained from the RSES was 21.00±6.21. The OG had an average score of 20.28±6.41, whereas the YG had an average score of 21.42±6.02.

For the older group, 21.35% of people (N=19) had high self-esteem, 76.40% (N=68) had average self-esteem, and 2.25% (N=2) had low self-esteem. In contrast, in the younger group, 71.53% of female respondents (N=98) had high self-esteem, 23.36% (N=32) had average self-esteem, and 5.11% (N=7) had low self-esteem.

Detailed results broken down by the younger and the older groups are shown in Table 2.

Based on the analysis, a statistically significant difference in responses was obtained between the younger and older groups.

An r-Person correlation analysis between the T-QoL and SES questionnaire scores showed a moderate positive correlation (r=0.430, p=0.00), meaning that women who evaluate themselves better also have better feelings about their lives despite having a skin disease.

Discussion

Patients with acne vulgaris frequently experience a diminished quality of life. This skin condition significantly impacts how patients perceive themselves, as it is associated with visible lesions on the body and increased inflammation. The study found that acne vulgaris undoubtedly affects many psychosocial aspects in patients who suffer from it. The impact of acne vulgaris on self-perception was shown to be more severe in the younger group than in the

elderly. This may be due to the fact that at a young age, personal identity and self-esteem are only in the formative stages. The study group consisted entirely of women, which is probably related to the fact that women are more likely to seek help from cosmetology and aesthetic medicine clinics.

Based on the analysis, lowered self-esteem (low and average) was found in 78.65% of those in the group over 27 years old and in 28.47% of those in the younger group. This result directly shows that the presence of inflammatory moles in the course of dermatosis and post-inflammatory changes such as hyperpigmentation or scars can effectively lower patients' self-esteem, leading to the development of depressive disorders or a significant drop in mood.

In the T-QoL questionnaire used during the study, the questions that received the most points were those related to frequently thinking about one's skin (1.44±0.57) and the need to cover affected areas (1.37±0.71). This shows that patients feel the need to hide lesions, which is most likely related to an increased sense of shame caused by the disease. This condition may significantly impede daily functioning when the individual is unwilling to leave the house without makeup or chooses to travel despite being unable to conceal the lesions. Frequent thinking about one's skin can also be a symptom of mental disorders such as anxiety disorders or depression. These are aspects that can make daily life miserable for acne patients.

In the results of the RSES scale, a higher percentage of points were received by negatively-oriented responses compared to positively-oriented responses. The sentences that received the most points were "I would like/want to have more self-respect" and "There are times when I really think I am useless", indicating disturbed self-esteem and self-perception among acne vulgaris patients. This may be related to current beauty canons, which focus heavily on a flawless skin appearance. Anything that deviates from this norm can be seen as a symptom of neglect by the person suffering from this dermatosis. This affects a lowered sense of self-worth, determining how patients think about themselves.

Studies unequivocally show increased stress levels and lowered self-esteem among acne vulgaris patients. A study by Vilar *et al.* showed that 71.7% of respondents with moderate to severe forms feared that acne lesions would never go away. In the same group, 63.9% responded that they felt uncomfortable about inflammatory lesions. It was also shown that school adolescents with acne vulgaris have a reduced quality of life compared to a group of healthy peers. It has been confirmed that psychosocial aspects should be taken into account during treatment.[14] A study by Jazici *et al.* showed increased levels of anxiety (26.2%) and depression (29.5%) in the patient group compared to the control group (0% and 7.9%, respectively). This confirms that acne vulgaris increases anxiety and stress levels and the likelihood of developing

mental illnesses among patients. The study indicated that the severity of the condition was irrelevant; patients at any stage exhibited symptoms of anxiety and depression.[15]

A study conducted in Turkey by Uslu *et al.* found that the mere fact of having acne was associated with a higher prevalence of anxiety, depression, and low self-esteem, and this was not correlated with the severity of acne lesions.[16] Another study in Saudi Arabia involving 476 female participants between the ages of 15 and 25 found that 85.5% reported an impact of acne vulgaris on psychological well-being. Among them, 42.9% reported a slight impact, 25.2% a moderate impact, and 15.8% described the impact as great.[17]

The impact of acne vulgaris on psychological well-being and self-esteem has been well proven in many studies. This is especially true for adolescents and young adults who are just entering adulthood and whose self-esteem is just being created. Shame is a major problem faced by young people, which further translates into a greater impact on their quality of life.

Strengths and weaknesses of the study

A strength of the study is that each subject had a medical diagnosis of acne vulgaris. The different ages of the subjects also made it possible to compare psychological aspects according to age. The study, using two standardized questionnaires, allowed the analysis of the patients' self-esteem and the impact of having acne vulgaris on their daily functioning.

The study also has its limitations; it includes only women, which limits the ability to generalize the results to the entire population of acne sufferers, including men, who may also experience negative psychological effects. The participants come from a single clinic located in Katowice, Poland. This location may not reflect the experiences of women from other regions of Poland or the world, which affects the generalizability of the results. Moreover, the study focuses mainly on self-esteem and quality of life, leaving out other potentially relevant psychological factors, such as social support, coping strategies, or the presence of other psychological disorders.

Conclusions

The study confirmed the significant impact of acne vulgaris on psycho-social aspects in women of different ages. Acne significantly lowers self-esteem and negatively affects the sufferers' perception of themselves and their appearance. The impact was shown to be more severe in a group of women over 27 years of age, in whom lower self-esteem was noted compared to the younger group.

Women with acne often feel the need to hide skin lesions and pay a lot of attention to their appearance, which can lead to reduced quality of life and emotional disturbances. A significant number of women have disturbed self-esteem and negative beliefs about themselves, which may be related to current beauty canons and social pressure for an unblemished appearance.

There is a need to include psychological aspects in the treatment of post-pubertal acne. Early dermatological intervention and psychological support can contribute to improving patients' self-esteem and quality of life. In addition, public education about acne as a common skin disease can help reduce stigma and negative stereotypes.

The study underscores the need for a holistic approach to female patients with acne vulgaris, considering both medical and psychological aspects, in order to effectively treat and improve psychological well-being.

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Table 1. Obtained results from the T-QoL questionnaire.

Questions from T-QoL	Score Total (X ± SD)	Score YG (X ± SD)	Score OG (X ± SD)	P-value
1. Does your skin condition make you feel self-conscious?	1.19±0.59	1.22±0.57	1.14±0.64	p=0.01*
2. Does your skin condition make you feel upset?	1.05±0.59	1.10±0.56	0.98±0.64	p=0.02*
3. Does your skin condition make you feel that you look different?	0.92±0.76	0.95±0.76	0.86±0.74	p=0.02*
4. Does your skin condition make you feel that people stare at you?	1.13±0.70	1.17±0.72	1.06±0.67	p=0.01*
5. Does your skin condition make you feel embarrassed?	1.08±0.69	1.11±0.67	1.02±0.73	p=0.01*
6. Does your skin condition make you feel uncomfortable in the presence of others?	1.10±0.68	1.12±0.68	1.06±0.68	p=0.01*
7. Does your skin condition stop you from going to places you would love to go?	0.68±0.73	0.70±0.74	0.63±0.69	p=0.06
8. Do you feel the need to cover up the affected areas of your skin condition?	1.37±0.71	1.43±0.66	1.27±0.76	p=0.01*
9. Does your skin condition affect your studies/job?	0.47±0.64	0.48±0.65	0.45±0.61	p=0.07
10. Does your skin condition make you worry about your future career?	0.38±0.60	0.36±0.61	0.39±0.59	p=0.02*
11. Does your skin condition cause any pain or discomfort?	1.28±0.65	1.30±0.67	1.24±0.63	p=0.00*

12. Does your skin condition affect your sleep?	0.24±0.46	0.26±0.47	0.22±0.44	p=0.36
13. Does your skin condition make you feel annoyed?	1.41+0.59	1.41±0.57	1.40±0.62	p=0.00*
14. Do you think a lot about your skin condition?	1.44±0.57	1.46±0.58	1.39±0.57	p=0.00*
15. Does your skin condition make you avoid meeting new people?	0.5±0.65	0.46±0.63	0.55±0.68	p=0.00*
16. Do you receive any unfriendly comments from other people about your skin?	0.39±0.53	0.41±0.56	0.37±0.48	p=0.14
17. Does your skin condition affect your relationships with friends?	0.22±0.47	0.2±0.45	0.26±0.50	p=0.02*
18. Does your skin condition affect your intimate relationships?	0.27±0.51	0.28±0.52	0.26±0.50	p=0.19

*p<0.05; YG, younger group (11-26 years); OG, older group (>27 years); X, average; SD, standard deviation.

Table 2. Obtained results from the RSES scale.

Questions from RSES	Score Total (X ± SD)	Score YG (X ± SD)	Score OG (X ± SD)	P-value
1. I believe that I am a person of value, at least as much as others.	1.63±0.74	1.65±0.76	1.59±0.72	p=0.00*
2. I believe that I have many positive qualities.	1.64±0.72	1.66±0.76	1.62±0.67	p=0.01*
3. I am able to do things as well as others.	1.73±0.75	1.77±0.76	1.68±0.73	p=0.00*
4. I have a positive attitude toward myself.	2.15±0.89	2.20±0.88	2.06±0.89	p=0.00*

5. I am generally satisfied with myself.	2.14±0.81	2.21±0.82	2.03±0.79	p=0.00*
6. I do not think I have much reason to be proud/ proud of myself	2.21±0.97	2.20±0.93	2.22±1.03	p=0.00*
7. In general, I am inclined to think that I am not doing well	2.05±0.89	2.04±0.86	2.07±0.93	p=0.00*
8. I wish/would like to have more self-respect.	2.68±1.07	2.77±1.05	2.54±1.09	p=0.00*
9. There are times when I really think I am useless/useless.	2.50±1.06	2.60±1.02	2.35±1.09	p=0.00*
10. Sometimes I think I am not a good person.	2.24±0.99	2.32±1.00	2.11±0.96	p=0.00*

*p<0.05; YG, younger group (11-26 years); OG, older group (>27 years); X, average, SD, standard deviation.