

Psychosocial impact of acne scarring: correlational study at Euderma Clinic Bali

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Abstract

Purpose: Acne scars are abnormalities in the contour and color of the skin that occur due to acne vulgaris, caused by increased tissue formation or local tissue damage and loss, which often causes disability, especially on the face. Acne scars often cause aesthetic, psychological, social, and emotional problems. This is a challenge for doctors to carry out comprehensive treatment strategies including primary, secondary, and tertiary prevention efforts. This research aims to determine the correlation between psychosocial impact and acne scars at the Euderma Clinic. **Methods:** The research method used was descriptive cross-sectional. The sampling technique used consecutive sampling, namely collecting participants who underwent acne scar management at the Euderma Clinic in May-July 2023. In this study, data collection was carried out using a questionnaire that included patient characteristics, acne history, and description of acne scars. The data was analyzed descriptively and correlatively for further data interpretation. **Results:** Descriptive test results on 121 samples, mostly female (77.7%), mature (72.7%), had a history of untreated acne for > 12 months, (46.3%), and had a habit of squeezing. acne (53.7%), and the severity of acne pustules > 20 (51.9%). The appearance of acne scars is mostly mild (40.5%) and moderate (39.7%). The correlation test results show a close relationship between acne scars and psychosocial impacts. **Conclusion:** The severity of acne scars in adults is mostly at the mild to moderate stage. Prevention efforts that can be taken are to carry out appropriate acne treatment so that inflammation does not prolong. Mild moderate acne scars can be managed with laser procedures and subcision to increase patient confidence.

Keywords: acne scar; mental health; psychosocial

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INTRODUCTION

Acne vulgaris is an inflammatory skin disease with lesions that appear in the form of papules, pustules, and comedones and is caused by multifactor. Acne vulgaris most often appears between the ages of 11-30 years and can appear in various locations on the body that have a high concentration of pilosebaceous units [1]. Acne vulgaris is often caused by increased sebum production, changes in keratinization, and bacterial colonization of surrounding hair follicles. face, neck, chest, and back [2].

Inflammatory acne vulgaris lesions cause permanent complications such as scarring. In 95% of cases, acne scars are located on the face. Acne scars can have psychosocial implications in the form of loss of self-confidence, impaired social interactions, decreased academic abilities, anxiety, and even depression. The incidence of acne scars in men and women is no different, it can occur at any age and around 90% of atrophic scar patients have a history of acne vulgaris. One study reported that the incidence of acne scars in the general population is around 1-11% [3].

The incidence of acne scars in women and men is no different and can occur at any age. Acne scars can occur in 95% of individuals who experience acne vulgaris. Atrophic type acne scars occur more frequently than hypertrophic type, namely with a ratio of 3:1.1.3 Although cases are less common than atrophic acne scars, hypertrophic acne scars also present a therapeutic challenge for patients and doctors. These two types of scars can occur simultaneously in one patient. Hypertrophic and keloid acne scars often occur in individuals who tend to produce excess scar tissue. This condition often occurs in the chest, upper back, and shoulders, but it can also occur in the chin and neck. However, hypertrophic acne scars have different morphology, etiology, and therapy from atrophic acne scars [4,5]. Acne scars often have an impact, they can cause aesthetic, psychological, social, and emotional problems. This is a challenge for doctors to overcome. Meanwhile, data regarding the prevalence and severity of acne scars in the general population is still limited [6,7].

METHODS

A cross-sectional study was conducted at Euderma Aesthetic Clinic, SIngaraja, Bali. A convenience sample was recruited from May to July 2023 from pupils attending acne scar treatment. The participants have been given direct and written informed consent. Self-reported questionnaire were filled in voluntarily by the participants. The questionnaires are divided into 3 major components. The first components related to patient characteristics gender, age, past medical history related to acne, acne medication, acne procedural treatment, and acne severity. The second component was the acne scare scale [8]. The third was acne scar impacts on psychosocial life. Acne severity in this study is classified based on morphological appearance [9]. However, acne scar severity is adjusted by Goodman and Baron qualitative scarring grading system [10]. This study has been approved ethically by the Ethic Committee Faculty on Medicine, Universitas Pendidikan Ganesha no. All data collection is gathered in an Excel document. Quantitative analysis was conducted by SPSS 25 to do descriptive and correlational analysis. Done with the descriptive statistic, the chi-square test was used to assess if there was a correlation between acne scar severity and all other variables. This study has been approved by the Ethic Committee Faculty of Medicine, Universitas Pendidikan Ganesha number 016/01/22/06/2023.

RESULTS

Table 1. Participants characteristics (n=121)

Characteristic	n	%
Gender		
Male	27	22,3
Female	94	77,7
Age		
Teenager	33	27,3
Adult	88	72,7
Hystory of acne		
< 3 months	32	26,4
3 -12 months	32	26,4
> 12 months	56	46,3
Hystory of acne medication		
Yes	52	43
No	69	57
Habbit to do acne popping		
Yes	65	53,7
No	56	46,3
Acne severity		
Comedo	31	25,6
pustula < 20	66	51,9
Pustula >20	24	22,5
Hystory of acne scar treatment		
Yes	52	43
No	69	57
Acne scar severity		
Macular	12	9,9
Mild	49	40,5
Moderate	48	39,7
Severe	12	9,9
Phycosocial life impact		
No insecure feeling	52	43,0
Feeling shy occasionally	48	39,7
Extremely shy prefer to avoid people	21	17,4

In the period May – July 2023, a total of 121 patients came to receive acne scar treatment. Characteristically, most patients with acne scars are adult women. Most of their acne-related history is more than 1 year, they have a habit of squeezing acne, they do not take good acne treatment, the severity of acne is moderate to pustules < 20, and most have never had a procedure to treat acne scars. Based on the results of observations, the patient's acne scars were in the mild and moderate categories. Mild means acne scars can be in the form of mild atrophy and hypertrophy which can be disguised with facial make-up and not be noticed from a distance of 50 cm. Moderate means acne scars can be in the form of moderate atrophy and hypertrophy which cannot be easily disguised with facial make-up and can be noticed from a distance of 50 cm. However, 43% did not feel it impacted social life and 39% caused embarrassment in certain situations (**Table 1**).

Table 2. Correlational analysis acne scar variables

	Acne scar severity				Correlational statistic analysis	
	Macula	Mild	Moderate	Severe	P	R
Phycosocial impact						
No insecure feeling	12	40	0	0		
Feeling shy occasionally	0	9	39	0	0,001	0,846
Extremely shy prefer to avoid people	0	0	9	12		
Hystory of acne scar treatment						
Yes	5	22	21	4	0,908	0,037
No	7	27	27	8		
Hystory of acne						
<3 months	9	19	1	3	0,001	0,583
3-12 months	3	22	6	1		
>12 months	0	7	41	8		
Acne severity						
Comedo	12	19	0	0	0,001	0,420
Pustula < 20	0	12	48	6		
Pustula > 20	0	18	0	6		
Habit to do acne popping						
Yes	1	34	19	11	0,001	0,160
No	11	15	29	1		
Hystory of acne medication						
Yes	5	22	21	4	0,908	0,037
No	7	27	27	8		
Gender						
Male	4	17	4	2	0,013	0,232
Female	8	32	44	10		
Age						
Teenager	7	16	8	2	0,19	2,62
Adults	5	33	40	10		

The results of the statistical correlation test showed that 5 variables were associated with the severity of acne scars in this study ($p < 0.05$). These variables include psychosocial impact, history of acne, the severity of acne, the habit of squeezing acne, and gender. The strong relationship seen from ($R > 0.5$) is on the variables of psychosocial impact and history of acne. Mild acne scars or just macules do not have an impact on psychosocial life. Meanwhile, moderate acne scars can cause feelings of shame and even self-isolation. Meanwhile, acne with a duration of > 12 months can cause moderate to severe acne scars (Table 2).

DISCUSSION

The results of this study showed that the incidence of acne scars at the Euderma Aesthetic Clinic mostly occurred in women (77.7%) compared to men (22.3%) and mostly in the adult population (72.7%). The etiological characteristics of acne scars in this study include a history of acne for more than 12 months

(46.3%); not having acne treatment (57%); a history of the habit of squeezing acne (53.7%); the severity of moderate acne in the form of pustules was less than 20 (51.9%). The description of the severity of acne scars in Euderma Clinic mild (40.5%) to moderate (39%) has an impact on the patient's psychosocial impact causing feelings of discomfort (43%) and embarrassment in certain situations (39.4%).

Based on the results of the correlational bivariate test, 4 variables are related to the severity of acne scars, including: history of acne, gender, habit of squeezing acne, and psychosocial impacts. The results of statistical tests using chi-square for the habit of squeezing acne and the severity of acne scars were $p = 0.001$ and $R 0.160$. The test results show that there is a relationship between the history of the habit of squeezing acne and the severity of acne scars with a low level of relationship. Statistical test results using chi-square for gender and severity of acne scars were $p = 0.001$ and $R 0.232$. The test results show that there is a relationship between gender and acne scar severity with a low level of correlation. The statistical test results using chi-square for acne history and acne scar severity were $p = 0.001$ and $R 0.583$. The test results showed that there was a relationship between a history of acne and the severity of acne scars with a moderate level of correlation. The results of statistical tests using chi-square for the psychosocial impact and severity of acne scars were $p = 0.001$ and $R 0.846$. The test results show that there is a relationship between the psychosocial impact and severity of acne scars with a strong level of closeness.

The relationship between acne scar severity and gender is supported by several other studies. Gender is a risk factor for acne scarring which is greater in men. This is due to differences in androgen hormone levels and the shape of the sebaceous glands in men and women [1]. Men have sebaceous glands shaped like cauliflower so that the acne formation becomes deeper and can form heavier acne scars. Apart from that, men tend to have lower self-awareness than women, so they tend to be late in treating acne. Differences in skin anatomy and physiology between men and women can be seen from the sebum glands in men being more active. This causes men's facial skin to tend to be oily. Oily skin has a higher risk of acne vulgaris [2]. Excessive sebum can obstruct the pilosebaceous follicles, which can trigger anaerobic infection by *P. Acnes*, forming colonies that worsen the inflammation, resulting in acne scars [3].

The pathology of acne scarring is mostly a complication of acne vulgaris [1]. Severe episodes of acne can cause physical and psychological scarring, and overexpression of transforming growth factor- β

can lead to the formation of hypertrophic scars and keloids [4]. The formation of acne scars is not always related to a history of squeezing acne. Squeezing acne is an attempt to remove pus which can relieve acne in the short term [5]. However, the level of hygiene during this procedure can increase the risk of infection. The sterility factor of tools and procedures for removing pus from acne areas in aesthetic clinics uses certain methods, for example by heating to open the pores and removing the pus with a comedo extractor [11].

The pathogenesis of acne scars is related to the severity of acne due to the post-inflammatory skin response. Scarring occurs more often in patients with moderate to severe acne vulgaris, or in acne subtypes such as nodulocystic acne, conglobatic acne, and fulminant acne [6]. The initial preclinical inflammation in acne persists throughout the life cycle of acne lesions, starting from microcomedones, and closed comedones, to inflammatory lesions and finally to post-inflammatory erythema (PIE), post-inflammatory hyperpigmentation (PIH), and scar tissue [7]. PIE is usually persistent in acne. white-skinned individuals and PIH is more common in dark-skinned individuals. Both sequelae represent highly visible and histologically visible inflammation that may be partly related to the slow degradation of nonviable P. acnes within the follicle. PIE is caused by wound healing-related microvascular dilatation that is thought to be generalized redness, not overt telangiectasia, which is exacerbated by repair-related epidermal thinning [12]. Improper production and degradation of collagen during the healing process cause various types of acne scars. In 80 to 90 percent of cases, there is collagen damage in the dermis which causes atrophic scars [13]. The types of atrophic scars are classified into ice-pick scars, rolling scars, and box-car scars [8]. Ice pick scars are narrow, deeper than they are wide, and V-shaped with sharp edges extending down into the dermis or subcutaneous tissue. Boxcar is the next most common type of atrophic scar; the size is wider, and the basin is round or oval with different edges [14]. Rolling scars are wide, with beveled edges that can be smoothed when stretched [15].

Our findings congruence with others' research show that acne scar appearance is related to a psychosocial aspect. Acceptability toward oneself and others, social functioning, and emotional well-being were the primary themes found in the qualitative interviews [16]. According to the cross-sectional survey, mild, moderate, severe, and very severe acne scarring affected 31.6%, 49.6%, and 18.8% of the individuals. According to the poll, 25.7% of participants thought their scars made them less beautiful, 27.5% felt embarrassed or self-conscious about them, 8.3% said

they frequently experienced verbal or physical abuse because of their scars, and 15.9% said they were wrongfully fired from their jobs. Furthermore, 19.7% of participants were extremely upset by having to hide their scars regularly, and 37.5% of individuals thought that their scars affected how other people perceived them.

The impact of acne scars on psychosocial dimensions has a major impact on the lives of adolescent and adult populations [17]. Physical appearance, especially the face, builds self-image and thus forms self-confidence [18]. Not only that, facial appearance influences the productivity of the adult population [19]. Today's facial appearance is an indicator of health well-being which is a concern for aesthetic health workers.

CONCLUSION

The incidence of acne scars at Euderma Clinic Singaraja in 2023 will reach 121 people. Acne scars in this study were related to gender, a history of acne for more than 12 months, a history of squeezing acne, and could cause embarrassment in social life. The type of acne scar is more likely mild to moderate which needs laser treatment and subcision. Acne scar severity correlates with the psychosocial impact of the patient. The earlier treatment of acne scars brought a better outcome.

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