

Impact of Acne Vulgaris on Quality of Life, Self-Esteem, and Psychological Well-being Among Adolescents: A Comprehensive Review

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ABSTRACT

Background: Acne vulgaris, one of the prevalent disease in adolescent in many countries worldwide, which has impacts not only on skin but also extends to mental health, self- image, daily functioning and many more [1,2,4]. Knowing its rate, emotional effect, and risk factors will help to formulate comprehensive care delivered in a patient-cantered way [1,6].

Objective: This study attempted to review systematically the current researches on prevalence of common acne vulgaris in adolescents, its effect on their quality of life, self- esteem and psychological well-being and to identify some major factors leading to prevalence in general.

Methods: The review involved 10 cross-sectional studies, published in 2016 to 2023, in countries and territories ranging between Nigeria, Greece, Switzerland, Egypt, Saudi Arabia, India, Bangladesh, and multinational. Together, all these studies comprised of 5,221 teenagers aged between 10-21 years.

Results: Various investigations determined that acne in adolescents are rather widespread, with results considerably varying between approximately 19% and 65%; based on where the research took place or how it was calculated. Many teens (64-86%) indicated that acne significantly influenced everyday life. Approximately 4 out of 10 teens who had acne, also reported depression, anxiety, fear, anger, or worry particularly when they had more severe acne. Girls had a higher probability of acne and appeared to feel much more emotional about it. It was more likely to aggravate those students aged between 15 and 19, the students who had attended private schools, and students in families that had a history of acne.

Conclusion: It is common to find that acne vulgaris among adolescents and leads to poor quality of life and emotional distress. It is high time to recognize that proper management of acne needs to have a comprehensive character, since both skin manifestations and psychological issues must be taken care.

KEYWORDS: Acne Vulgaris, Adolescents, Psychological Impact, Self-Esteem, Dermatology

INTRODUCTION

Acne is a universal skin problem, faced especially by many teenagers [1,2,6]. It commonly begins in puberty due to altered hormones, oily skin and the presence of bacteria deeper in the skin pores [5,6]. Acne may appear as blackheads, whiteheads, red spots (bumps) or (in its severe forms) too big to be painful lumps [6,8]. Many believe that acne is a purely cosmetic issue; research indicates that acne can have serious consequences on the attitudes held by adolescents towards themselves and their

psychological state [1,2,4,9]. In teenage, individuals experience a lot of changes; and how it fitting in, how they look, and how people perceive them gain significant importance to them [4,10].

The presence of acne particularly on the face can make the teen feel embarrassed or self-conscious [1,4,10]. Certain studies demonstrate that it proves to be as challenging in terms of emotional strain as health-related issues that are chronic such as asthma or diabetes [2,7]. Hence the need to ensure that acne is not only managed as a skin ailment, but also as an ailment that affects the mind [3,4,9]. In order to effectively assist the teenagers, we need to examine the frequency of occurrence of acne in various locations, the cause and its impact to the lives of youth [1,2,5,6]. Factors such as culture, money, where one resides and so forth can matter about the experience and treatment of acne [3,6,10]. Knowing the causes of acne to get worse and things can benefit, will develop better means of helping teenagers experiencing this problem [3,5].

This review synthesizes world research on the impact of acne on the confidence, mental health and life of adolescents, with the aims to identify the general trend, determine the factors that have a higher potential to cause acne, and propose improved methods of helping the teenagers.

METHODOLOGY

Study Selection and Inclusion Criteria

In this review, 10 studies completed between 2016 and 2023 were considered, to obtain information about the prevalence of acne among teenagers and its impact on their mental health, self-esteem, and everyday life. Some criteria followed during study selection are:

- The participants are aged from 10 to 21 years.
- The study did not consider the information at a specified moment.
- Studies focused on the prevalence of acne among the teens and its impact on self-esteem, mood and overall well-being.
- The Researches applied appropriate tools and surveys which are proved to be thorough.
- Studies were provided by various parts of the world

Data Extraction

Each research is presented with clear and organized collection of information. This included:

- Basic information about the research like: geographical area of research performed, the year of publication, size of sample, and the methodology used.
- Demographic features of the respondents like; age, gender, social background etc.
- Acne vulgaris' data such as frequency and degree.
- Instruments to measure the quality of life
- Mental and social impact of acne, (on the emotions, confidence and social life of people).
- Causes or risk factors that are associated with the development of acne.
- Significant findings regarding and related with acne.

Quality Assessment

The quality of included studies was assessed based on:

- Sample size adequacy and representativeness
- Use of validated assessment instruments
- Statistical methodology and analysis
- Clear definition of outcomes and variables

Data Analysis

The studies were different in methodology used and objectives. The results are categorised in to main headings, like how common acne is, the affects of acne on people's lives, impacts on mental health, and the factors linked with acne.

MAIN RESULTS

Study Characteristics

A total of 10 studies are reviewed. There are total 5,221 participated in these studies, and are from wide geographical locations including Nigeria (n=2) [1,5], Switzerland (n=1) [3], India (n=2) [7,8], Greece (n=1) [2], Egypt (n=1) [4], Bangladesh (n=1) [9], Saudi Arabia (n=1) [6] and Multinational population (n=1) [10]. The size of sample ranged from 110 to 1,560; and they were aged between 10 & 21 years.

Acne Vulgaris prevalence

The prevalence of acne was significantly inconsistent and was varying between 19.4 to 65.1 percent. The lowest rate of prevalence (19.4%) is marked by a Swiss study by Dumont et al. [9], on the other hand 65.1% was recorded as highest by Bajawi et al. in a Saudi Arabian study [6].

Study Location	Year	Sample Size	Prevalence (%)	Assessment Method
Nigeria (Okwara et al.) [1]	2021	410	37.3	Self-report questionnaire
Greece (Tasoula et al.) [2]	2007-2009	1,560	51.2	Population survey
Switzerland (Dumont et al.) [3]	2021-2023	335	19.4	Sociodemographic questionnaire
Egypt (Awad et al.) [4]	2022	110	-	Structured interview
Nigeria (Yusufu et al.) [5]	2023	482	44.0 (self-report) 55.0 (clinical)	Self-report + clinical examination
Saudi Arabia (Bajawi et al.) [6]	2016	440	65.1	Self-administered questionnaire
India (Aithal) Study 1 [7]	2016	500	-	CADI & DLQI assessment
India (Aithal) Study 2 [8]	2016	1,200	58.3 (clinic) 42.3 (school)	Closed-ended questionnaire
Bangladesh (Noor et al.) [9]	2023	150	-	Clinical assessment
Multinational (Beissert et al.) [10]	2019	694	-	Mixed methods

Table 1: Acne Prevalence by Study Location and Methodology

Gender Distribution

The consistency of gender patterns across the studies was also significant [2,5,6]. A number of studies have found that the prevalence or impact of the disease is higher in females [5,6]. Greek study reported the same distribution between gender s(51.2%) [2], the Saudi Arabia Arabian-studied had bigger rates among females (71% as compared to 60% in males)[6]. The Nigerian study conducted by Yusufu et al. listed female gender as a major predictor of acne among adolescents below the age of 15 years (OR 3.03, 95% CI 1.64-5.61; P=0.001] [5].

Age-Related Patterns

Age turned out to be an important dimension among numerous studies [1,5]. Nigerian study by Okwara et al., m b showed higher prevalence in the age range of 15-19 years (41.2%) than at 10-14 years (35.8%) [1]. Likewise, Yusufu et al. also detected age of >15 years as one of the predictive factors (OR 1.79, 95% CI 1.12-2.87; P=0.02) [5].

Socioeconomic and Education Factors

Attendance to private schools was found to be a strong predictor of acne regardless of the research [1,5]. Okwara et al. Nigerian study revealed that the prevalence was higher in the private schools (51.4 %) than public schools (32.2 %) [1]. This was supported in the finding of Yusufu et al., that found the attendance at private schools to be predictive (OR 2.17; 95% CI 1.38-3.42; P=0.001) [5].

Quality of Life Impact

The effect of acne on life quality was consistently significant across various studies, with majority of participants experienced medium to severe impairment.

Study	Assessment Tool	Key Findings	Severity Association
Tasoula et al. [2]	Children Dermatology Life Quality Index	Median score: 4.02	Significant correlation with severity (p<0.0001)
Dumont et al. [3]	Acne-QoL	7.7% had low Acne-QoL	Associated with screen time, social media use
Awad et al. [4]	Structured assessment	78.2% had poor acne QoL	Positive correlation with severity
Bajawi et al. [6]	Self-administered questionnaire	17.2% had high disability scores	Higher in females (19% vs 15.2%)
Aithal Study 1 [7]	DLQI & CADI	76% very large effect (DLQI) 86% medium impact (CADI)	Correlated with acne severity
Aithal Study 2 [8]	CADI	Significant correlation with severity	Regression coefficient: 4.86-9.08
Beissert et al. [10]	Mixed methods	64% reported daily life interference	Associated with stigma perception

Table 2: Quality of Life Impact Assessment

Effects on Psychological or Psycho-social aspect

Acne has high psychological effects; according to a Nigerian study by Okwara et al., which shows 41.5% of participants had the same [1]. Common psychological features like depression, worry, anxiety, fear and anger were shown significant associations with presence of acne vulgaris [1,4,6,9,10].

Study	Psychological Factor	Prevalence/Impact	Statistical Significance
Okwara et al. [1]	Depression	Associated with acne	P < 0.004
Okwara et al. [1]	Anxiety	Associated with acne	P < 0.015
Okwara et al. [1]	Worry	Associated with acne	P < 0.001

Okwara et al. [1]	Fear	Associated with acne	P < 0.001
Okwara et al. [1]	Anger	Associated with acne	P < 0.001
Awad et al. [4]	Body image dissatisfaction	61.8% affected	Positive correlation with severity
Awad et al. [4]	Low self-esteem	65.5% affected	Correlated with acne severity
Bajawi et al. [6]	Psychological impairment	7.3% severe	No gender difference
Beissert et al. [10]	Stigma perception	65.4% reported	Associated with embarrassment

Table 3: Psychological Impact and Associated Factors

Impact on Social Behaviour

The effects of acne reached far in social and behavioural aspects [10]. According to the study conducted by Beissert et al. 46.4% of respondents avoided social contact often or always, 48.6% were worried about talking to new acquaintances, and 47.4% were not comfortable in expressing affection [10]. Such results emphasize the high social implications of acne rather than its dermatological form [10].

Risk Factors and Predictors

Several consistent risk factors emerged across studies, which are:

1. Age: Adolescents ≥ 15 years showed higher prevalence and impact [1,5]
2. Gender: Female adolescents demonstrated greater psychosocial impact [4,5,6]
3. Educational setting: Private school attendance was associated with higher prevalence [1,5]
4. Family history: Positive family history emerged as a predictor in older adolescents [5]
5. Screen time and social media: Prolonged screen time and addictive social media use were associated with lower quality of life [3]
6. Physical activity: Low engagement in physical activity was associated with poorer outcomes [3]

Protective Factors

The Swiss study by Dumont et al. identified several protective factors:

- Regular physical activities [3]
- Limited screen time [3]
- Healthy social media usage patterns [3]

Treatment-Seeking Behaviour

Acne severity was associated with increased likelihood of seeking medical care [7,8]. The Indian study by Aithal found that moderate acne increased the odds of seeing a doctor (OR=8.95 in clinic settings, OR=1.31 in community settings), while severe acne showed even higher odds ratios (OR=3.89 in community settings) [8].

Perceptions and Attitudes

The Nigerian study by Yusufu et al. revealed interesting patterns in acne perceptions [5]. A significant proportion (64.1%) of those who understood acne as a biological phenomenon had acne themselves; while beliefs about acne are caused by skin lightening practices were more common among those

without acne [5]. Notably, 25.3% of adolescents had no understanding of acne causes, highlighting the need for education initiatives [5].

Severity Assessment

In the cases reported, they found 87% of the participants have mild to moderate acne [7,8]. According to an Indian study by Aithal, mild acne was seen in 80% of patients, moderate acne in 19% and only 1% of the patients were found to have severe acne by assessment on the Global Acne Grading Scale (GAGS) [7].

DISCUSSION

This review reveals that acne is widespread in the world affecting 19 to 65 percent of adolescents [1-3,5,6,8]. These two figures are big differentiated based on the fact that the research was conducted in varied locations and approaches were varied [1-10]. They can also indicate cultural and genetic dissimilarities among categories. Girls are most likely to have acne as compared to boys, and perhaps, it is due to hormonal fluctuations, the pressure to look good, and the social pressure [4-6]. There is also the tendency that teenagers attending private schools are reported to have more acne, but this may be attributed to lifestyle and stress or the fact that their families earn more income, however this needs to be investigated further [1,5]. Between two-thirds and three-quarters of all teenagers with acne told in a survey, it had impacted on their quality of life, either moderately or seriously [2,4,7,10]. Even minor acne used to create some emotional problems among individuals, must take into consideration [1,2,4,9]. A significant amount of time spent scrolling on the screens or social media tended to be correlated with poorer feelings toward acne [3]. This may be due to the fact that it causes less physical activity, sleepless nights, added stress and the tendency to compare oneself to the others online [3,10]. On the positive side, frequent exercises made teens feel better almost always and their acne turned out to be less serious [3]. As approximately 41.5% of teens that have acne also had mental health problems such as depression, anxiety or anger [1].

LIMITATIONS

This review failed to assume whether acne is the cause or effect, due to the fact that all the studies are only conducted at a single point of time. Also, various methods and tools were applied to gather data that did not allow to compare the results of these studies directly. Much of the information was that of individuals reporting their occurrence, which is not always fully true. However, a study conducted in Nigeria (by Yusufu and others) established that the self-report by the patients tended to agree with what the doctors observed in terms of acne [5]. Although the studies have been conducted in many countries, they may not present the whole picture in the world. The differences in the cultures in the perception of acne, together with its impact on the individuals may not have been captured completely [6,10]. Moreover, age categories of the studies were not identical and that might also influence the correlation of the results.

IMPLICATIONS

Clinical implications

The clinical implications of the findings of this review are:

- The results help in global scaling of acne prevalence and its effect on quality of life and psychological well-being [1,2,4,7,9,10].

- The findings remind early intervention and multidisciplinary approach in dermatological and psychosocial symptoms [3,4,9].
- It helps for patient education to deal effectively with misconceptions about the causes and give evidence-based information to deal with the issues of acne [5,6].
- It helps in encouragement of physical activity as well as healthy habits [3].
- This helps to plan for treatment strategies and strengthening resources for gender-specific considerations as possible increased effect in female adolescents [4-6].

Implications for Educational Institutions

The findings of this review help to:

- Develop school-based health education programs addressing acne and its psychosocial impact [1,5,6].
- Train school health personnel to recognize and appropriately respond to acne-related distress [1,4,10].
- Create supportive environments that reduce stigma and promote help-seeking behaviour [6,10].

Implications on Public Health

- This result helps in planning school specific interventions, especially private schools [1,5].
- The findings promote mental health services in specified problems [1,4,9].
- These findings integrate and promote public health programs [1-10].
- This helps in training of healthcare providers on issues regarding identification and management of the psychosocial impact of acne [1,4,9,10].

Implications for Families and Communities

The findings of this review help to:

- Promote awareness of acne as a legitimate health condition requiring professional care [5-8].
- Encourage healthy lifestyle habits including regular physical activity and limited screen time [3].
- Provide emotional support and understanding for adolescents affected by acne [1,4,10].
- Advocate for appropriate healthcare access and comprehensive treatment options [7,8].

FUTURE RESEARCH RECOMMENDATIONS

1. **Longitudinal Studies:** To learn about natural history of acne-related psychosocial impact and risk factors associated with recovery, long term studies need to be performed
2. **Intervention Studies:** Different interventions help to find the efficacy of treatment methods for dermatological and psychological aspects.
3. **Cultural Factors:** Research need to be carried out on the role of culture in determining perceptions of acne as well as its effects on various people.
4. **Mechanism Studies:** Studies of the biological and psychological processes need to be conducted to clear out connection between acne and mental health.
5. **Digital Health Interventions:** Assessment of social media and digital health products on the management and support of acne to be assessed.

CONCLUSION

Based on this review, it is evident that acne is not a mere skin condition among adolescents, but rather, this condition is serious and can take a toll on their mental health, confidence and the general well-being [1,2,4,7,9,10] Girls appear susceptible to it more than others [4-6]. The psychological effect of acne is

seen in adolescents of various nationalities and origins, which implies that this is a worldwide problem. On the bright side, there is a possibility that some of the changes such as having better exercise and reducing the time a person spends in front of the screen can assist in controlling acne [3]. Treatment of acne, among doctors, teachers, and community health officials will require the holistic person approach [3,4,9]. It does not simply imply skin treatment; it would mean providing mental health, healthy lifestyle tips and educating people on what leads to acne [3-6,9]. On the whole, the message is that we have to quit looking at acne as a mere cosmetic issue [1,2,4,10].

TAKE-HOME MESSAGES

1. Acne vulgaris is a universal health problem that has a prevalence in adolescents ranging between 19.4 percent and 65.1 percent in different populations [1-3,5,6,8].
2. The psychosocial impact in terms of the number of the affected persons with medium to severe impairment in quality of life, is being 64-86 percent [2,7,10].
3. Disproportionately, female adolescents have been observed to show predominance, higher prevalence rates and more psychosocial effects in various studies [4-6].
4. Mental sequelae are also frequent; psychological disorders (depressions, anxiousness, and avoiding social life patterns) have been found on more than 40% of the affected subjects [1,4,9,10].
5. There are modifiable risk factors, especially too much screen time and use of social media; and conversely, exercise seems protective [3]
6. Multimodal care is crucial as it is necessary to combine dermatological management, psychological guidance and lifestyle counselling [3,4,9]
7. Misconceptions concerning acne should be educated and corrected in order to achieve a suitable attitude towards care-seeking [5,6]

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