

The Effects of Acne on Self-esteem Among Adolescents

Robin E. Schroeder, BS; Sebastian G. Kaplan, PhD; Steven R. Feldman, MD, PhD

Adolescence is an important period for emotional and psychosocial development and considerable changes occur to self-consciousness. Low self-esteem in adolescence has been associated with delinquency, aggression, antisocial behavior, poor physical and emotional health, and lower economic success in adulthood compared to individuals with high self-esteem. This study focuses on how acne, a disease process that affects more than 85% of adolescents, impacts self-esteem in this patient population. We conducted a literature review for studies evaluating the impact of acne on adolescent self-esteem. Five studies that specifically focused on acne and self-esteem in the adolescent population were selected for complete review. All of the studies found a correlation between adolescent acne and low self-esteem and the majority of acne patients surveyed across all 5 studies reported dissatisfaction with their appearance and demonstrated more emotional disturbance than their peers without acne. Patient perception of disease severity was found to be the most important and universal indicator of low self-esteem. Acne treatment was associated with improvement in self-esteem. Early and aggressive treatment can have a positive impact on self-esteem in adolescents with acne, and it is important to consider a patient's perception of his/her disease severity when selecting a treatment regimen. The high correlation between acne and psychosocial problems in adolescents indicates that it is imperative to assess patients for low self-esteem and depression prior to treatment.

Cosmet Dermatol. 2012;25:66-70.

All from Wake Forest University School of Medicine, Winston-Salem, North Carolina. Ms. Schroeder and Dr. Feldman are from the Department of Dermatology, Center for Dermatology Research; Dr. Kaplan is from the Department of Psychiatry and Behavioral Medicine; and Dr. Feldman also is from the Departments of Pathology and Public Health.

The Center for Dermatology Research is supported by an educational grant from Galderma Laboratories, LP. Ms. Schroeder and Dr. Kaplan report no conflicts of interest in relation to this article. Dr. Feldman has received consulting, research, and speaking support from Coria Laboratories, a division of Valeant Pharmaceuticals North America LLC; Galderma Laboratories, LP; Mediceis Pharmaceutical Corporation; and Stiefel, a GSK company.

Correspondence: Steven R. Feldman, MD, PhD, Department of Dermatology, Wake Forest University School of Medicine, Medical Center Blvd, Winston-Salem, NC 27157 (sfeldman@wakehealth.edu).

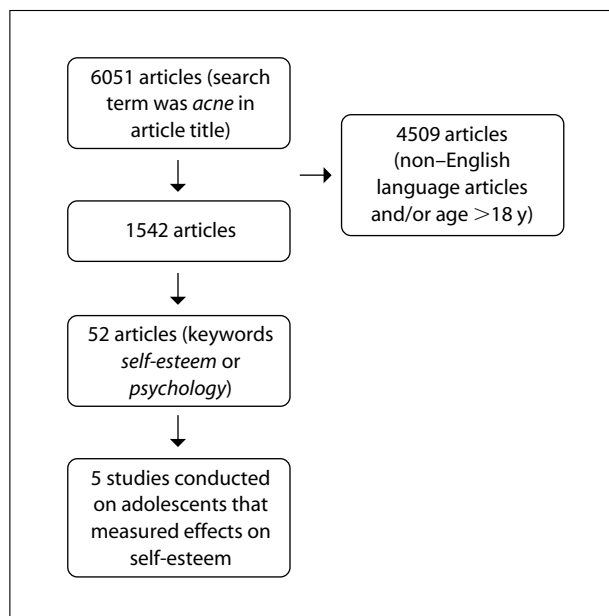
Self-esteem is a feeling of satisfaction or dissatisfaction when comparing one's perceived self-image to an ideal self-image. The degree of satisfaction is an important predictor of life outcomes.¹ For instance, low self-esteem in adolescence has been associated with delinquency, aggression, antisocial behavior, poor physical and emotional health, and lower economic success in adulthood compared to individuals with high self-esteem. These findings are independent of depression, socioeconomic standing, and gender.^{1,2} Low self-esteem also is a prospective risk factor for depression in adolescence and is associated with increased suicidality.^{3,4} Conversely, high self-esteem often is linked to increased persistence during hard times, closer interpersonal relationships, and increased feelings of security,¹ all helping a person achieve occupational, academic, and social success.

Adolescence is an important period for emotional and psychosocial development and considerable changes occur to feelings of self-consciousness, social abilities, and perceptions of body image.^{5,6} Practitioners who treat teenagers should consider self-esteem an important variable that can be affected by various disease conditions. Therapies focused on improving self-esteem often are effective and may be reasonable in many circumstances.⁷

Acne affects more than 85% of adolescents, often resulting in low self-esteem and an increased risk for depression and suicidality.⁸⁻¹⁰ The relationship between self-esteem and physical appearance is complex.¹¹ Acne may seem to be a superficial process, but the disease can severely impact a patient's emotional and mental health, resulting in lifelong psychosocial scars. For instance, Mallon et al¹² found that patients with acne have a quality of life that is equivalent to individuals with a chronic condition such as diabetes mellitus, asthma, a seizure disorder, or lower back pain. In a study of adult acne patients, early intervention and medical management led to improvement of self-esteem.¹³ The effect of acne on various psychosocial factors also has been studied.¹⁴ We review the literature on the effect of acne on self-esteem in adolescent patients.

METHODS

A literature search was conducted by article title using PubMed for articles indexed for MEDLINE and PsycINFO; with the search term *acne*, 6051 articles were found (Figure). Using the limit option, non-English language articles and/or studies conducted on adult patients were excluded. The keywords *self-esteem* or *psychology* were used to narrow the results to 52 articles; after evaluation to ensure the studies measured self-esteem, 5 studies¹⁵⁻¹⁹ ultimately were selected for complete review. A majority of the 52 articles included adolescents and



Parameters for literature search conducted using PubMed for articles indexed for MEDLINE and PsycINFO.

adults. These studies were excluded from review unless adolescent participants were evaluated separately.

RESULTS

A summary of key findings is provided in the Table. Each of the 5 studies is discussed separately below.

Krowchuk et al¹⁵ evaluated 39 adolescents before and after acne treatment using the self-administered Piers-Harris self-concept scale and an objective assessment of acne severity. The self-assessment questionnaire included questions about disease severity, dissatisfaction with facial appearance, perceived peer disapproval, and social inhibition. In addition, participants were asked to answer select questions from the Coopersmith Self-esteem Inventory. A majority of participants reported being dissatisfied with their facial appearance, which correlated with patient ratings of disease severity ($P \leq .005$) as well as social inhibition and feelings of embarrassment ($P \leq .005$). Objective rating of disease severity was not found to be correlated with dissatisfaction with facial appearance. After treatment, participants reported feeling more satisfied with their appearance, noted that their appearance was more accepted among their peers, and stated that they felt less socially inhibited and less embarrassed. Piers-Harris self-concept scores were within normal range before and after treatment, but the scores showed improvement posttreatment ($P = .004$).¹⁵

Smithard et al¹⁶ surveyed 398 participants with 317 respondents (48% [153/317] male; 52% [164/317] female)

Studies Assessing the Effects of Acne on Adolescent Self-esteem

| Reference (Year) | Study Population | Methods | Results |
|-------------------------------------|---|--|---|
| Krowchuk et al ¹⁵ (1991) | 39 adolescents | At baseline and posttreatment, participants completed the Piers-Harris self-concept scale and underwent an objective assessment of acne severity; participants also answered select questions from the Coopersmith Self-esteem Inventory | 58% (23/39) of participants reported dissatisfaction with their facial appearance, which was correlated with social inhibition and feelings of embarrassment |
| Smithard et al ¹⁶ (2001) | 317 adolescents | Participants' psychological health, level of acne knowledge, and help-seeking behavior were assessed using the SDQ and the Acne Management Questionnaire | Participants with definite acne (≥ 12 lesions; $P < .01$) and girls ($P < .05$) demonstrated higher levels of behavioral and emotional difficulties; participants with acne were almost twice as likely to score in the abnormal/borderline range on the SDQ |
| Dalgard et al ¹⁷ (2008) | 3775 adolescents | Participants were asked to complete a questionnaire-based survey exploring self-esteem, body satisfaction, and acne disease severity | Participants with acne demonstrated lower self-attitude and self-worth and low levels of body satisfaction; acne explained the low levels of self-worth and self-attitude in girls and boys, respectively, independent of depressive symptoms and BMI |
| Uslu et al ¹⁸ (2008) | 600 high school students; 563 completed the study | Participants were asked to complete a questionnaire on acne, the GHQ, and the RSES | Subjective evaluation of acne was associated with low self-esteem as well as increased levels of depression and anxiety |
| Hassan et al ¹⁹ (2009) | 132 patients | Participants completed questionnaires including the DAS-59 and 3 self-rated acne severity scales | Acne patients scored higher than normative scores based on the general population on all 5 categories of the DAS-59, which correlated with increased self-consciousness in all categories at levels similar to burn or trauma patients with facial scars |

Abbreviations: SDQ, Strengths and Difficulties Questionnaire; BMI, body mass index; GHQ, General Health Questionnaire; RSES, Rosenberg Self-esteem Scale; DAS-59, Derriford Appearance Scale.

aged 14 to 16 years in Nottingham, United Kingdom, using the Strengths and Difficulties Questionnaire (SDQ) and the Acne Management Questionnaire. Higher SDQ scores predicted low self-esteem. Acne severity was measured using an adapted form of the Leeds Acne Grading Technique. The prevalence of acne in the study population was 50% (159/317); 11% (34/317) presented with moderate to severe acne (>20 inflammatory lesions). Participants with definite acne (≥ 12 lesions) demonstrated higher levels of behavioral and emotional difficulties ($P < .01$). Seventy-seven percent (243/317) of participants had normal SDQ scores, 16% (52/317) scored in the abnormal/borderline range, and 7% (22/317) scored in the probably abnormal range. Adolescent boys with severe acne were more likely to have higher SDQ scores ($P < .02$). No relationship between acne severity and SDQ score was determined in adolescent girls; however, girls were more likely than boys to have an elevated SDQ score ($P < .05$). Participants with acne were almost twice as likely to score in the abnormal/borderline range on the SDQ (odds ratio, 1.86).¹⁶

Dalgard et al¹⁷ performed a baseline assessment of 10th grade students in Oslo, Norway, with a total of 3811 respondents (89.2% response rate) from 2000-2001. In 2004, all 32 secondary high school 13th grade students were surveyed, resulting in a cross-sectional study of 3775 students (79.8% overall response rate) with most participants between the ages of 18 and 19 years (44% [1672/3775] male; 56% [2103/3775] female). A follow-up study was conducted 4 years after the baseline assessment with a response rate of 79.8% (3775/4730). The survey included questions about physical and mental health, healthcare behavior and lifestyle, body satisfaction, and participant assessment of acne disease severity. To measure self-esteem, 4 questions from the Rosenberg Self-esteem Scale (RSES) were used. The self-reported prevalence of moderate to severe acne was 13.5% (510/3775). Both adolescent boys and girls with acne demonstrated more depressive symptoms, lower self-attitude and self-worth, more feelings of uselessness, and lower body satisfaction than participants without acne. Depressive symptoms were strongly correlated with low self-esteem and low body satisfaction but were not correlated with higher body mass index. The presence of acne in boys was associated with low self-attitude (odds ratio, 2.07; 95% confidence interval, 1.10-3.38). The presence of acne in girls was associated with low self-worth (odds ratio, 1.88; 95% confidence interval, 1.23-2.88). Both of these associations were independent of depressive symptoms and body mass index.¹⁷

Uslu et al¹⁸ conducted a cross-sectional study in Aydin, Turkey, on 563 high school students (53.8% [303/563] male; 46.2% [260/563] female) aged 13 to

19 years using a questionnaire on acne, the General Health Questionnaire (GHQ), and the RSES. Only 550 adolescents consented to examination of facial acne. Higher GHQ scores indicated higher levels of psychological distress, and higher RSES scores indicated lower levels of self-esteem.¹⁸ Criteria from the Consensus Conference on Acne Classification²⁰ was used in the objective evaluation of acne severity (prevalence, 63.6% [350/550]). Eighty-three percent (469/563) of participants subjectively reported having acne, with 76.9% (433/563) reporting mild to moderate severity. Acne that was subjectively evaluated at higher degrees of severity was associated with higher GHQ and RSES scores ($P < .001$ and $P = .01$, respectively). Adolescents who reported subjective improvement with treatment subsequently had lower GHQ and RSES scores compared with participants who did not report improvement ($P < .001$).¹⁸

In a study by Hassan et al,¹⁹ 132 patients who confirmed acne was a concern for them in northwest England completed the Derriford Appearance Scale (DAS-59) and 3 self-rated acne severity scales. The mean DAS-59 evaluated self-esteem using 5 scales, including general self-consciousness of appearance, social self-consciousness of appearance, self-consciousness of sexual and bodily appearance, negative self-concept, and self-consciousness of facial appearance.²¹ Higher scores correlated with more self-consciousness. The objective severity of acne was determined using the Leeds revised acne grading system. The age range for this sample was 16 to 59 years. The participants were split into 2 age categories: (1) 16 to 19 years, and (2) 20 years and older. The mean DAS-59 score for adolescents in this study was 134.24. Normative DAS-59 scores for the age range of 18 to 30 years were 33.3 to 40.0, and the standard deviation was 18.5 to 26.2 for males and females, respectively.²¹ Scores in all 5 categories were higher than the normative scores. The DAS-59 scores for participants with acne were either equivalent to or greater than burn or trauma patients with facial scars.¹⁹

COMMENT

Acne is more than a superficial skin disease; in some adolescents, it can cause long-lasting psychosocial problems. Adolescents with acne exhibit lower self-esteem than their peers without acne, and multiple studies indicate a correlation between acne and diminished quality of life, depression, anxiety, and suicidality.^{10,12,22,23} Based on our analysis, a patient's subjective assessment of disease severity was the strongest predictor of low self-esteem, indicating that a patient's perception of his/her appearance, not objective clinical assessment of the severity, is the primary cause of psychosocial distress.

Successful acne treatment can improve a patient's self-esteem and reduce the risk for depression and suicidal behavior in this high-risk patient population.^{13,18,24} Hahm et al²⁴ observed a significant ($P < .05$) reduction in depressive symptoms 2 weeks after initiating treatment with isotretinoin. Treatment with isotretinoin can significantly ($P < .05$) improve quality of life measures in 8 weeks.^{24,25} For patients, simply believing that treatment can improve the severity of one's external disease process can improve self-esteem scores and lower anxiety levels.¹⁸ Although this review focused on self-esteem among adolescents, the effect of acne on self-esteem in adult patients is more profound.¹⁹

A major limitation in analyzing these studies is the difficulty comparing the results, as each study used different questionnaires to assess self-esteem and subjective acne severity. Consistent use of common measures in self-esteem research, such as the RSES, and a standardized assessment of subjective disease severity should be used in subsequent studies to allow for comparison of results. Despite this limitation, each of the studies we evaluated provides evidence suggesting a relationship between acne and low self-esteem.

Adolescent acne patients should be screened for low self-esteem and depression to help guide treatment selection.²³ By developing a strong physician-patient relationship, physicians can teach and support patients throughout the disease process and address the deeper psychosocial issues that are associated with adolescent acne.

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