



Socio-psychological Effects of Acne among Undergraduates of the University of Ibadan

*Akinniyi A. Aje^{CDEF} and Bukola O. Adeoye^{ABC}

Department of Clinical Pharmacy and Pharmacy Administration, Faculty of Pharmacy, University of Ibadan, Ibadan, Nigeria.

A – research concept and design; B – collection and/or assembly of data; C – data analysis and interpretation; D – writing the article; E – critical revision of the article; F – final approval of article.

Abstract

Background: Acne is a skin disorder that is common among adolescents. The various degrees of distortion of facial appearance could have some socio-psychological effects on sufferers.

Objectives: The objectives of this research, within the study population (undergraduates of the University of Ibadan), were: To determine the gender prevalence of acne, to evaluate the socio- psychological effect of acne and to evaluate socio-psychological effects of acne in relation to the severity of the condition.

Material and Methods: A cross-sectional study with pre-tested questionnaires administered to 100 undergraduate students of the University of Ibadan. Descriptive statistics was used to summarize data and categorical variables were compared with Chi-square at a level of significance of $p < 0.05$.

Results: The response rate was 100%. Gender prevalence showed that 70% of the students with acne are females with 30% being males. Twenty-seven (27%) of the respondents indicated high social effects, 8 (8%) indicated average score while 65 (65%) showed a high social effects. Fourteen (14%) of the respondent had low emotional effects, 1 (1%) had average score while 85 (85%) had a high emotional effects. Twenty respondents (20%) had low psychological effects, 6 (6%) had an average response and 74 (74%) had high psychological effects.

Conclusions: Acne is more prevalent in females than in males among undergraduate students of the University of Ibadan. The socio-psychological effect of acne was found to be more in students with milder form of acne.

Keywords: Socio-psychological, acne, Ibadan, undergraduate

INTRODUCTION

Acne is a common chronic inflammatory disease of the pilosebaceous unit, characterized by the formation of non-inflammatory comedones and inflammatory papules, pustules, nodules and cysts. It is the most common disorder treated by dermatologists (Sams *et al*, 1990). It is the most common skin disorder affecting more than 85% of adolescents (Ramzy *et al*, 2004). Acne is a common dermatological condition that can have a profound effect on the physical, psychological, and social wellbeing of patients (Mohammed, 2010). It can develop or persist over time to affect 50% of adults older than 20 years of age and it is also the most common diagnosis for dermatologist visit for people between 14 and 45 years of age (Ramzy *et al*, 2004).

Studies show that acne affects the quality of life of its sufferers with depression and anxiety being more common in those with acne than the general population. Although it is generally considered to be a benign, self-limiting condition, acne may cause severe psychological problems or disfiguring scars that can persist for a lifetime (Leung *et al*, 1991). It is a pleomorphic disorder and can manifest at any time during life but it most commonly presents between ages of 12 and 24 years, which account for an estimate of 85% of population affected (Winston *et al*, 1991). However, acne severity does not seem to be a factor in the level of depression or anxiety; those with mild acne are just as likely to suffer from these conditions as those with more severe cases (Purdy *et al*, 2003). The morbidity associated with acne can be high and associated with disfigurement, pain, loss of confidence, and impairment of normal social and workplace function, with documented

effects on quality of life including depression, dysmorphobia, anxiety and even suicide (Purdy *et al*, 2003). About 12%–14% of cases of acne are associated with psychological and social implications of high gravity (Fabbrocini *et al*, 2008). It is also associated with higher unemployment rates compared with the average population (Katsambas *et al*, 2008).

Acne can persist beyond teen years and lead to greater levels of psychosocial morbidity (Kellet *et al*, 1999). It has been associated with a variety of social and psychological disturbances, such as embarrassment, anxiety, depression, suicidal ideation, social isolation. Acne patients experienced social, psychological, and emotional ramifications at the same level of those with chronic health problems, such as epilepsy, diabetes, and arthritis. Hence, the emotional consequences of acne must not be taken lightly (Tan *et al*, 2006). The psychosocial effect of acne was first recognized in 1948, when Sulzberger wrote, “There is no single disease which causes more psychic trauma and more mal adjustment between parents and children, more general insecurity and feelings of inferiority, and greater sums of psychic assessment than does Acne vulgaris” (Sulzberger *et al*, 1948).

Most times, acne has been thought of as insignificant in comparison with diseases of other organ-systems such as arthritis, back pain, diabetes, epilepsy, and disabling asthma (Mallon *et al*, 1999). Many recent studies on acne have shown its effect on psychosocial and emotional health of its patients. Acne has been associated with a variety of social and psychological disturbances, such as embarrassment, anxiety, depression, suicidal ideation, and social inhibition (Krowchuk *et al*, 1991) and its patients have been found to have greater impairment in mental health scores compared with patients with asthma, epilepsy, diabetes, back pain, arthritis and coronary artery disease. About 12%–14% of cases of acne are associated with psychological and social implications of high gravity (Mallon *et al*, 1999). It has a demonstrable association with depression and anxiety as it affects personality, emotions, self-image and esteem, feelings of social isolation, and the ability to form relationships (Mallon *et al*, 1999).

The impact of acne on the emotional well-being and function can be critical and is associated with depression and higher than average unemployment rates (Katsambas *et al*, 2004; Asad *et al*, 2004). The emotional impact of acne is often very difficult for patients to tolerate. This is because adolescence is a period of life characterized by pronounced volatility and adolescents are often highly sensitive to acne as well as other conditions that affect their physical appearance (Amanda *et al*, 2008).

Previous studies on the psycho-social impact of acne have documented dissatisfaction with appearance, embarrassment, self-consciousness, and lack of self-confidence in acne patients. Social dysfunction has also been observed, including concerns about social interactions with the opposite gender, appearances in public, interaction with strangers, and reduced employment opportunities (Rapp *et al*, 1999). Furthermore, acne is associated with anxiety, depression

(Kellet *et al*, 1999), feeling of anger, and lower body satisfaction (Kellet *et al*, 1999; Rapp *et al*, 1999).

METHODS

Study site and population: The study was carried out among undergraduate students of the University of Ibadan. Three female halls and three male halls of residence were randomly selected for the research. The selected halls of residence are: Queen Elizabeth II, Queen Idia, Obafemi Awolowo (Female halls); Independence, Nnamdi Azikiwe and Mellanby (Male halls).

Study period: The study was done between the 7th of June, 2013 and 21st August, 2013.

Study design: A cross-sectional study involving the administration of pretested questionnaires to evaluate the socio-psychological effects of acne among undergraduate students of University of Ibadan.

Sample size determination: Sample size was calculated using the Cochran formula. The calculated sample size was 96, however, it was adjusted to 120 to make up for non-response or improperly filled questionnaire.

Inclusion and exclusion criteria: Undergraduate students with facial acne were included in the study while those without facial acne were excluded from the study.

Ethical consideration: Ethical approval for the study was given by the UI/UCH Institution Review Board.

Data analysis: Descriptive statistics was used to summarize data and categorical variables were compared with Chi-square at a level of significance of $p < 0.05$.

Sampling strategy: Random selection was used. Data was collected through both male and female halls of residence of the University through the use of questionnaires. This questionnaire was designed through the use of Acne Quality of Life (Acne-QoL) and was administered to volunteers with active lesions.

Acne-QoL questionnaire is a 19-item instrument that requires approximately 5-7 minutes to fill. Its application is exclusive to facial acne, which is the reason why it was used in the study. It contains demography, past acne therapies or medication history, severity of acne, the social perception of the patients.

RESULTS

A total of one hundred and twenty questionnaires were administered and the response rate was 100%; however 100 questionnaires were analyzed based on correctness/completeness of data supplied. Twenty-five (25%) of the respondents were between 15-19 years, 55 (55%) were between 20-24 years, and 20 (20%) were between 25-29 years while none of the respondents' age was above 30 years. Seventy (70%) of the respondents were females while 30 (30%) were males. Sixty-seven (67%) of the respondents said that the acne comes periodically and may also get worsened during this period (including menstrual bleeding and stress), while 33 (33%) of the respondents declined.

The relationship between age, sex and socio-psychological effects of acne is shown in the cross-tabulation in Table 1.

The relationship between severity of acne and its socio-psychological effects is as shown in Table 2.

DISCUSSION

From the results, it was observed that female undergraduate students of the University of Ibadan were more affected by acne than males, accounting for 70% of the total sample population while male respondents accounted for 30% of the population. This is in keeping with the study done by Ikaraocha in 2005, where the gender prevalence of acne was higher in females (65%), compared to males (35%) (Ikaraocha *et al*, 2005). Sixty-seven (67%) of the respondents experienced periodic worsening of the acne. This can be explained by the fact that most of them were females and the periodicity is linked to their menstrual cycle. According to (Krowchuk *et al*, 1991), low levels of estrogen and proportionally high levels of androgen hormones cause estrogen-related cystic acne. This observation is further backed up by the fact that the two predominant hormones involved in the female menstrual cycle falls to the lowest just prior to the bleeding while testosterone which is usually found in low levels in females remains at a constant concentration/level. Also, in the second half of the menstrual cycle, there is an increase in the circulating level of progesterone which causes the stimulation of production of sebum; a thick, oily substance which can clog the skin pores and in addition, providing an enabling environment for invading bacterium (Bowers *et al*, 2014).

It was also observed that respondents between ages 15-19 years and 20-24 years accounted for about three-quarter of the total respondents that had acne. According to Brad *et al*, 2010, the most affected age groups with acne are 15-17 years and 18-24 years accounting for 25.3% and 24.9% respectively of the sample population.

Comparing the relationship between sex and social effects, about two-third of the respondents indicated high social effects, 36.5% of which were male and 63.5% were female with a p-value of 0.86, and this showed that there was no significant association between sex and social effects of acne although females were more affected. According to Brad *et al*, 2010, females are more affected by acne, accounting for 65.2% of acne patients giving a ratio of 1.9 to 1 as compared to males. This is in line with the outcome of the research. Females showed a higher percentage in terms of emotional effects than males, the transformed data between sex and emotional effects as well as psychological effects (including anger and dissatisfaction with appearance) of acne patients gave 43% and 41% for females and males. Even though it is expected that female students should be more significantly affected psychologically by acne, considering the fact that they are more conscious of their facial appearance, the study revealed just a slight difference. Samanthula and others in 2013 found out the emotional and psychological effects of acne are about the same extent in both sexes (Samanthula *et al*, 2013). This correlates with Arshad *et al*, 2009, who stated that the impact of acne is similar in both genders.

About one-half of the sample population showed a significantly high response to social effects (social perception and social role). It can be inferred that acne affected the social perception and social role of acne patients among undergraduates of the University of Ibadan. About two-third of the sample population showed significant psychological effects with respondents of age range 20-24 years accounting for about one-half of the sample population. According to Arshad *et al* 2009, acne affects almost 85% of people between 12-24years of age. This can be further supported by the fact that the body's androgen secretion starts about this age and its production is also at the highest.

Comparing the severity of the disease with its social effects, it was observed that a strong association exists between the severity of acne and its social effects as respondents having 1-9 bumps with pus accounted for two-third of the sample population. It can therefore be said that social effects of acne is mostly felt by undergraduate students with 1-9 number of bumps with pus in the University of Ibadan. The psychological effect of acne is not associated with the number of inflammatory lesions with pus. Students with a few bumps with pus get more affected by the social effect of acne probably because the bumps are still new and foreign to them, while students with more bumps with pus may have adapted and got used to the situation after a long time. The impact of acne on the quality of life of its patient is not necessarily related to the extent or severity of the disease. This is further corroborated by Amanda *et al*, 2008, who stated that acne can have profound social and psychological effects and these effects are not necessarily related to its clinical severity, even mild acne can be significantly disabling.

CONCLUSION

Acne is more prevalent in females than in males among undergraduates of University of Ibadan and it affects the social perception, social role, and psychological role of its sufferers with ages 20-24 years being the most affected age group. The socio-psychological effects of acne are not sex-dependent, and people with milder form of the disease had more social effects, however, psychological effects of acne is not related to the severity (number of inflammatory lesion) of the disease.

RECOMMENDATIONS

- Pharmacists should play a major role in the management of acne by offering adequate counseling to acne patients with special focus on the psycho-social effect of acne.
- All patients and their parents (in the case of minors) should be made aware of the potentials for mood change in a realistic, non-judgmental way.
- Health-care team members should make direct enquiries about psychological symptoms at each clinic visit or contact with the patients.
- Behavioral follow-up should be given to patients with high socio-psychological morbidities.

Table 1: Relationship between age, sex and socio-psychological effects of acne

AGE GROUP	SOCIAL EFFECTS			EMOTIONAL EFFECTS			PSYCHOLOGICAL EFF						
	Low	Average	High	Total	p-value	Low	Average	High	Total	p-value	Low	Average	High
(Years)													
15-19	8	0	13	21	0.127	4	1	20	25	0.568	6	4	15
20-24	18	3	31	52		25	1	29	55		17	4	34
25-29	4	4	19	27		5	4	11	20		5	0	15
Total	30	7	63	100		36	6	60	100		28	8	64
SEX													
Male	7	0	23	30	0.860	7	1	22	30	0.058	6	2	22
Female	23	7	40	70		7	0	63	70		14	4	52
Total	30	7	63	100		14	1	85	100		20	6	74

p-value <0.05 = Significant

Table 2: Relationship between severity of acne and its socio-psychological effects

NO OF BUMPS	SOCIAL EFFECTS				EMOTIONAL EFFECTS				PSYCHOLOGICAL EFFECTS						
	Low	Average	High	Total	Low	Average	High	Total	Low	Average	High	Total	P-value		
0-19	21	4	38	63	0.290	10	0	53	63	0.678	12	5	46	63	0.394
20-39	0	0	6	6		1	0	5	6		0	0	6	6	
>40	3	0	2	5		0	0	5	5		0	0	5	5	
Countless	6	3	17	26		3	1	22	26		8	1	17	26	
Total	30	7	48	100		14	1	85	100		20	6	74	100	
NO OF BUMPS WITH/UPUS															
0-9	25	3	27	61	0.001	26	4	35	65	0.691	23	4	38	65	0.711
20-39	0	4	10	21		2	2	13	17		1	2	14	17	
>40	4	0	0	5		1	0	3	4		1	1	2	4	
Countless	1	0	12	13		5	0	9	14		3	1	10	14	
Total	30	7	63	100		34	6	60	100		28	8	64	100	

p-value <0.05 = Significant

REFERENCES

- Amanda O, Hamilton N., Collier J. (2008). Psychological effects of acne. *DermNet New Zealand*. Created 1999. Last modified 23rd Feb. 2014. 1-2.
- Arshad H., Khaivani O., Shamsul A. (2009). Prevalence of acne and its impact on quality of life in school- aged adolescents in Malaysia *Journal of Primary Health Care*; 1: 24.
- Asad F, Qadir A, Ahmad L. (2004). Anxiety and Depression In Patients With Acne. *Clinical Dermatology*. 22:439-44
- Bowers E. S., Gardner S. Jan. 2014. WebMD” How Your Period Affects Acne.
- Brad A., Jeff H., Erin L. R., Adam U., Steven R., Rajesh B. (2010). Acne vulgaris in the United States of America: A descriptive epidemiology. *International Journal of Medical and Pharmaceutical Sciences*. 86:94-99.
- Fabbrocini G, Caccipuoti C, Fardella N, Pastore F, and Monfrecola G. (2008). Cross technique: chemical reconstruction of skin scars method. *Dermatology and Therapy*. 21:529-532.
- Ikaraocha C.I., Taylor, Anetor J.I, Igwe C.U, Ukaegbu Q.O, Nwobu G.O, Mokogwu A.T. (2005). Demographic features, beliefs and socio-psychological impact of Acne vulgaris among its sufferers in two towns in Nigeria. *Ojhas*; 4:3-5.
- Katsambas A.D, Stefanaki C, Cunliffe W.J. (2004). Guidelines for treating acne. *Clinical Dermatology*; 22: 439-44.
- Kellett S.C, Gawkrödger D.J. (1999). The psychological and emotional impact of acne and the effect of treatment with isotretinoin. *British Journal of Dermatology*; 8:332-338.
- Krowchuk D, Stancin T, Keskinen R, Walker R, Bass J, Anglin T. (1991). The Psychosocial Effects of Acne on Adolescents. *Pediatric Dermatology*; 8:332-338
- Leung A.K, Robson W. (1991). Acne. *Journal of Royal Society of Health*; 111: 57-60.
- Maggin P, Adams J., Heading G, Pond D, Smith W. (2008). Experiences of appearance-related teasing and bullying in skin diseases and their psychological sequelae: result of a qualitative study. *Scand. Journal of Caring Science*; 14:194-198.
- Mallon E., Newton J.N., Klassen A., Stewart-Brown S.L, Ryan T.J., Finlay A.Y. (1999). The quality of life in acne: a comparison with general medical conditions using generic questionnaires. *British Journal of Dermatology*; 140(4):672-6.
- Mohammed T. (2010). Pathogenesis of acne vulgaris simplified. *Journal of Pakistan Association of Dermatologists*; 20: 93-97.
- Purdy S, Langoston J, Tait L. (2003). Presentation and Management of Acne in Primary Care: A Restropective Cohort Study: *British Journal of General Practice*; 53:525-9.
- Ramzy B and C. Kahl. (2004). Epidermiology of acne vulgaris: evaluating the evidence,” *Skin therapy letter*, vol.9, No. 7, 1-9.
- Rapp S.R, Exum M.I, Fleischer A.B, Reboussin J.R (1999). Psoriasis causes as much disability as other major medical diseases. *Journal of American Academy of Dermatology*; 41:401-7.
- Samanthula H, Kodali M, Gutta A. (2013). Impact of acne on quality of life- A gender based study. *International Journal of Medical and Pharmaceutical Sciences*; 3 (10): 17-22.
- Sams W.M, Lynch J.R (1990). Principles and Practice of Dermatology. New York: Churchill Livingstone 56-59.
- Sulzberger M.B, Zaidens S.H. (1948). Psychogenic factors in dermatologic disorders. *Medical Clinics of North America*; 32:669-72.
- Tan J.K, Fung K, Bulger L. (2006). Reliability of Dermatologies in acne lesion counts and gobal assessments. *Journal of Cutane Medical Surgery*; 10: 160-5.
- Winston M.H, Shalita A.R. (1991). Acne vulgaris- pathogenesis and treatment. *Pediatrics Clinics of North America*; 38: 889-903

Address for correspondence:

Akinniyi A. Aje
Department of Clinical Pharmacy and Pharmacy Administration,
Faculty of Pharmacy, University of Ibadan, Ibadan, Nigeria.
Email: aje123@gmail.com; **Tel:** +2348035684484

Conflict of Interest: None declared

Received: 30 April, 2015

Accepted: 2 December, 2015