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Scientific Research**

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Evaluation Of Acne Severity And Its Effect On Quality Of Life Among Diyala University College Of Medicine Students

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for the Bachelor Degree in medicine and general surgery.

Supervisor:

Dr. Yasir Abdullah

Accomplished by:

Nihad Adnan

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

{ هُوَ الَّذِي جَعَلَ الشَّمْسَ ضِيَاءً وَالْقَمَرَ نُورًا وَقَدَرَهُ مَنَازِلَ لِتَعْلَمُوا عَدَدَ
السِّنِينَ وَالْحِسَابَ مَا خَلَقَ اللَّهُ ذَلِكَ إِلَّا بِالْحَقِّ يُفَصِّلُ الْآيَاتِ لِقَوْمٍ يَعْلَمُونَ }

سورة يونس - الآية 5.

Abstract

Background: Acne is a chronic inflammatory disease of the pilosebaceous units characterized by seborrhea, comedones, erythematous papules & pustules, less frequently nodules, deep pustules or pseudocysts and accompanied by scarring, It is one of the most frequent cutaneous diseases, affecting more than 80% of the population at some point in their lives. Although it is generally self-limited a significant percentage of individuals suffer from the disease for years.

Aim of study: this study was aiming to Evaluation Of Acne Severity And Its Effect On Quality Of Life Among Diyala University College Of Medicine Students.

Methodology: The current study is cross section study type was carried out in Diyala University college of medicine. from 20th of November 2022 to the 20th of March 2023. The study design was by random sampling.

Results: The total samples of study was (50), the most site of acne was in face (76%) then upper back (50%) and the lowest site was in scalp (3.3%). the White comedones and papules the most common type of acne in percentage (62%), (54%) then black comedones (44%), pustules (30%), Nodules (10%) and cyst (3.3%). the most of patients with acne receive treatment (64%), and there is (36%) is did not received treatment. most of students with acne have not family history (71%) and with family history (29%). severity of acne according to Global acne grading system, that most of students with moderate severity of acne (45%) then mild (28%), severe (17%), and very sever about (10%).

Conclusions: Most site of acne was in face then upper back and the lowest site was in scalp. The White comedones and papules the most common type of acne. In this study, the most of patients with acne receive treatment and there is did not received treatment. The most of students with acne have not family history. According to Global acne grading system, that most of students with moderate severity of acne then mild severity.

Acknowledgment

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We want to thank all the people who accept to provide us with information about our subject.

Dedication

- *To.. Our Beloved Country, IRAQ...*
- *And, We put our humble effort in the hands of those who made us see the light of knowledge our distinguished teachers...*
- *And, to our fathers & mothers...*

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Abbreviations

(ADI): Acne disability index

(APSEA): Assessment of the psychological and social effects of acne

(CADI): Cardiff acne disability index

(DSQL): Dermatology-specific quality of life

(HRQoL): Health-related quality of life

Introduction

Acne is a common distressing disease that can affect all aspects of an individual's health-related quality of life (HRQoL), in particular feelings and emotions, personal relationships, sports, social life and employment chances [1].

Acne is a chronic inflammatory disease of the pilosebaceous unit with a multifactorial aetiology. It is one of the most frequent cutaneous diseases, affecting more than 80% of the population at some point in their lives. Although it is generally self-limited a significant percentage of individuals suffer from the disease for years. Independent of its clinical severity, this disease has a great impact on patients' lives, Acne frequently affects the face, is difficult to hide, and the scars can persist for years or for life. Finally, it is more prevalent in adolescence, a phase of life with great importance in the development of self-confidence and social abilities. Patients with acne have reported functional and emotional effects due to their skin disease comparable to those reported by patients with other diseases. Moreover, when acne was compared with other diseases, acne patients reported levels of social, psychological and emotional problems that were as great as those reported by patients with chronic disabling asthma, epilepsy, diabetes, back pain or arthritis. Therefore, acne is not a trivial disease in comparison with other chronic conditions [2].

There is generally a linear relationship between the clinical severity of acne and impairment of HRQoL, although impairment is also dependent upon a person's 'coping ability'. In addition, individuals with little objective evidence of acne may endure severe subjective impairment, greatly affecting their HRQoL, acne affects many people and can be detrimental to affected patients' quality of life. Assessing the impact of acne on quality of life requires well-validated and reliable measures of acne-specific quality of life that are brief and easy to administer and interpret [3].

Several acne-specific health-related quality of life instruments now exist, including the Assessment of the psychological and social effects of acne (APSEA), the acne disability index (ADI), the Cardiff acne disability index (CADI) and the dermatology-specific quality of life (DSQL) questionnaire [4].

Acne vulgaris is a common disease with prevalence reaching up to 80% during adolescence, the psychological effect of acne on patients can be considerable, the interaction of acne and psychosocial issues is complex and, in adolescence, can be associated with developmental issues of body image, socialization and sexuality, previous studies on the psychosocial 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 [5].

Furthermore, acne is associated with anxiety, depression, feel of anger, and lower body satisfaction, it can be negatively associated with intention to participate in sports and exercise [6].

The human skin is the body's main interface with the external world; the skin is the site of events and processes crucial to the way we think about, feel about, and interact with one another, it can thus be regarded as the body's major public relations tool, conditions which affect the skin may, therefore, affect an individual's ability to function properly in society, more on account of the negative psychological impact than from the presence of disease, acne vulgaris is one such condition, primarily seen in adolescents and often with a definite and limited course, its onset coincides with the period of the development of the secondary sexual characteristics and may add to the emotional and psychological challenges experienced during this period [7].

The World Health Organization (WHO) defines quality of life (QoL) as the individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns. It is a broad-ranging concept, affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, personal beliefs, and their relationship to salient features of their environment [8].

Acne is Single most common skin disease, affecting an estimated 85% of teenage boys and 80% of teenage girls, Can continue or present at any age, and affects 8% of adults aged 25- 34 years and 3% of those aged 35-44 years, 50 million people are estimated to be affected by some form of acne, with approximately 17 million having clinical acne, 1/3 rd of these patients require specialist treatment and represent the largest patient group seen by dermatologists, Although superficial and not life threatening, if left untreated, can have serious physical and psychological consequences, Severe acne can result in permanent physical scarring, that has been implicated as a risk factor for suicide, particularly in men, Patients with mild to moderate acne have a higher prevalence of suicidal ideation, comparable to that among patients with far more chronic and disfiguring dermatological problems, Other psychological scars include lowered self-esteem and professional expectations, social inhibition, depression and anxiety [9].

The pilosebaceous unit (PSU) is the site of acne and in normal skin is composed of large, multi-lobulated sebaceous glands, rudimentary hair and a wide follicular canal lined with stratified squamous epithelium, desquamated cells from the follicular epithelium are carried up the follicular canal, towards the infundibulum by sebum secreted from the sebaceous glands, Normal development, growth and differentiation of the PSU requires the interaction of androgens with numerous other biological factors, including growth factors and thyroid hormone, if the infundibulum of the PSU becomes occluded, the trapped sebum and shed cells promote bacterial proliferation, immune reactions and inflammation, resulting in the development of acne vulgaris [10].

Features of acne [11]

- Comedones (open and closed)
- Grease
- Red papules and pustules
- Nodules and cysts
- Scarring
- Pain and tenderness
- Low self esteem and confidence

Causes of acne [11]

- Disorder of pilosebaceous follicle
- Excess of oil
- Dead skin not shed properly and blocks the pores with blackheads
- Microcomedones and comedones
- Pockets of oil form ideal breeding ground for *Propionibacterium acnes*
- Inflammation leads to red papules and pustules.

Assessment [11]

- Previous treatments
- Compliance and side effects
- How bad does the patient feel it is ?/10
- Objective assessment of severity
- Mild/moderate/severe and face/chest/back
- Comedones, papules and pustules
- Nodules and cysts
- Scarring

Treatment [11]

- Do not pick or squeeze
- Ask about inappropriate emollient use
- Oil-free make-up, non-comedogenic
- Use mild soap or gentle cleanser
- Expect topical treatments to dry or irritate, and manage this
- At least 2 months to assess any treatment



Comedonal [11]

Topical retinoid: E.g. Tretinoin 0.025% gel applied nocte, or Adapalene 0.1% gel/cream

Or Azelaic Acid: E.g. Skinoren 20% cream

Mild papulo-pustular: Topical Retinoid and Topical Antimicrobial

E.g. tretinoin gel nocte and antimicrobial marne (?BPO, or Duac), or possibly Epiduo gel (adapalene + BPO)

Or Azelaic Acid + Topical Antimicrobial: E.g. Zineryt lotion

Moderate Papulo-pustular: Oral antibiotic + Topical Retinoid +/- BPO

E.g. Lymecycline od, or Erythromycin 500mg bd, + Tretinoin gel nocte +/- BPO marne

Or Alt. oral antibiotic + alt. retinoid/azelaic acid +/- BPO:

E.g. Trimethoprim 300mg bd + adapalene +/- BPO

Or Females, Add Dianette

Nodulo-cystic

Oral antibiotic + topical retinoid +/- BPO

High Dose, eg Lymecycline bd or Trimethoprim 300mg bd

Or Oral Isotretinoin

Or Females, Dianette + topical retinoid +/- oral antibiotic



Severe, includes any scarring

Oral Isotretinoin

Or High Dose Oral Antibiotic + Topical Retinoid + BPO

Or Females, Dianette + topical retinoid +/- oral antibiotic

Maintenance Treatment [11]

Use Oral Antibiotics for 6-12 months minimum, continue topical retinoid (azelaic acid) long term

For moderate-severe cases, ?topical retinoid +/- BPO long term

How to reduce referrals?

Manage expectations, compliance and side effects

Use more Topical Retinoids and combine them with Topical or Oral Antibiotics +/- BPO.

To our knowledge this is the first cross-sectional study concerning health-related quality of life of patients with acne in Diyala University college of medicine. This study was carried out to determine the impact of acne and its clinical severity on health related quality of life in a group of students.

Methodology

Ethical and Approval Consideration

Permission was taken from students to fill the information required and they were assured regarding the confidentiality of their responses. The aim of the study was explained and only those who agreed to participate are included in the study .

Study Population

The study was performed among students of Diyala University college of medicine.

Study design

The current study is cross section study type was carried out in Diyala University college of medicine. from 20th of November 2022 to the 20th of March 2023. The study design was by random sampling.

Sample size and sample procedure

The sample size was (50) of students. Trained very well to interview the questionnaire carefully and in scientific way. Respondents were assured that the information obtained would be confidential and used only for statistical purposes.

Questionnaire and Interview

The questionnaire used for data collection was designated in Arabic and English language. Interviewers administer it and it includes mainly closed questions.

Data Analysis and Presentation

All data management and analysis was done by using manual statistical methods. Data have been represented by suitable tables and figures.

Results

The total samples of study was (50) most of them was female (30) and lives in Baqubah (39), and the socio economic level was normal for (36) of students and good (13) with only one poor socio economic level.

Table (1): this table shows the site of acne .

Site of acne	Number %
face	38 (76%)
Upper back	25 (50%)
Upper chest	11 (22%)
Upper extremities	6 (12%)
Scalp	2 (3.3%)

In this study shows that the most site of acne was in face (76%) then upper back (50%) and the lowest site was in scalp (3.3%).

Table (2) this table shows the most type of acne .

type of acne	Number %
White comedones	31 (62%)
black comedones	22 (44%)
papules	27 (54%)
pustules	15 (30%)
Nodules	5 (10%)
Cysts	2 (3.3%)

This table shows, that the White comedones and papules the most common type of acne in percentage (62%), (54%) then black comedones (44%), pustules (30%), Nodules (10%) and cyst (3.3%).

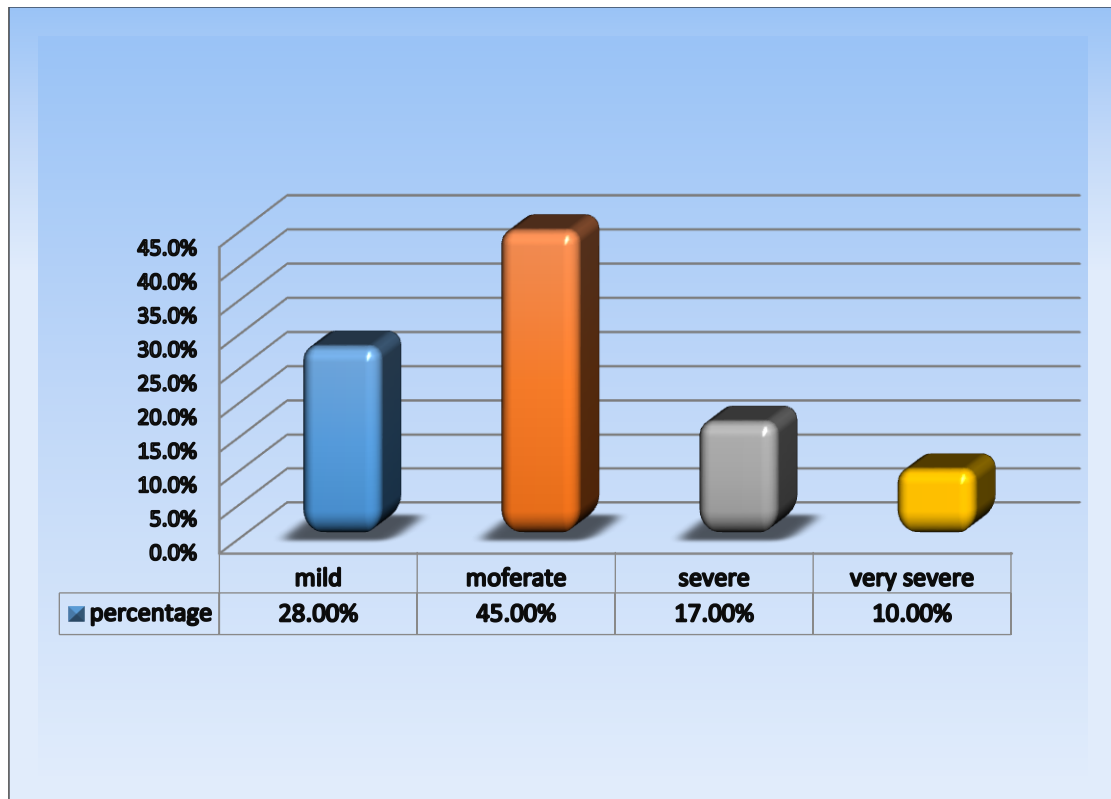


figure (1): the distributions of severity of acne according to GAGS.

This figure shows the severity of acne according to Global acne grading system, that most of students with moderate severity of acne (45%) then mild (28%), severe (17%), and very sever about (10%).

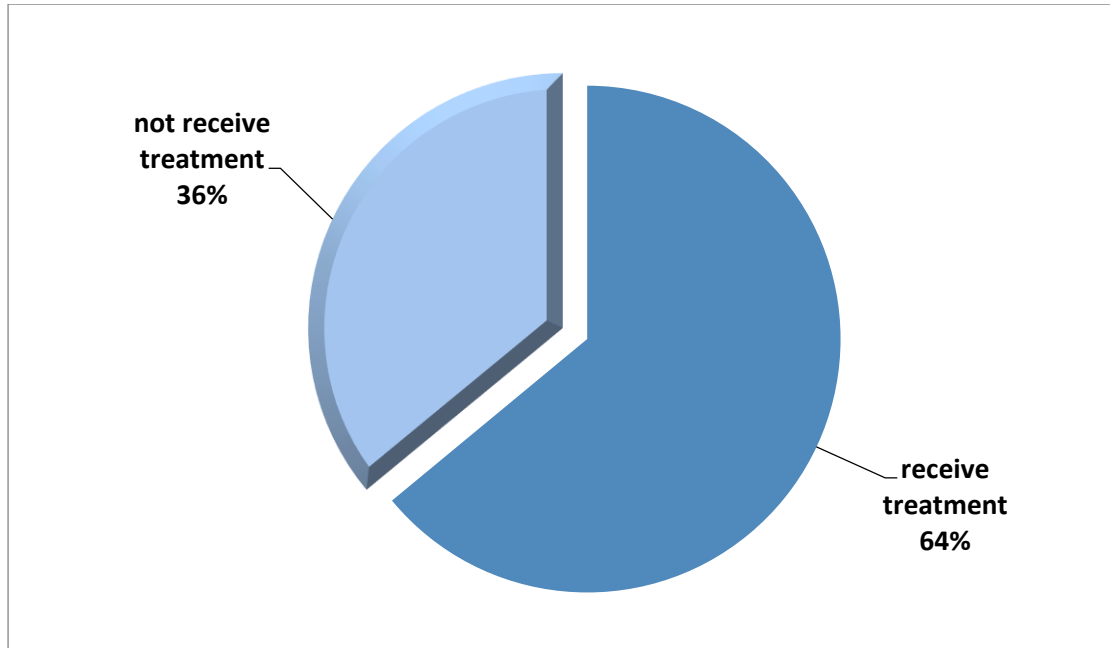


Figure (2): this figure shows the frequency that receive treatment for acne.

This figure shows, that the most of patients with acne receive treatment (64%), and there is (36%) is did not received treatment.

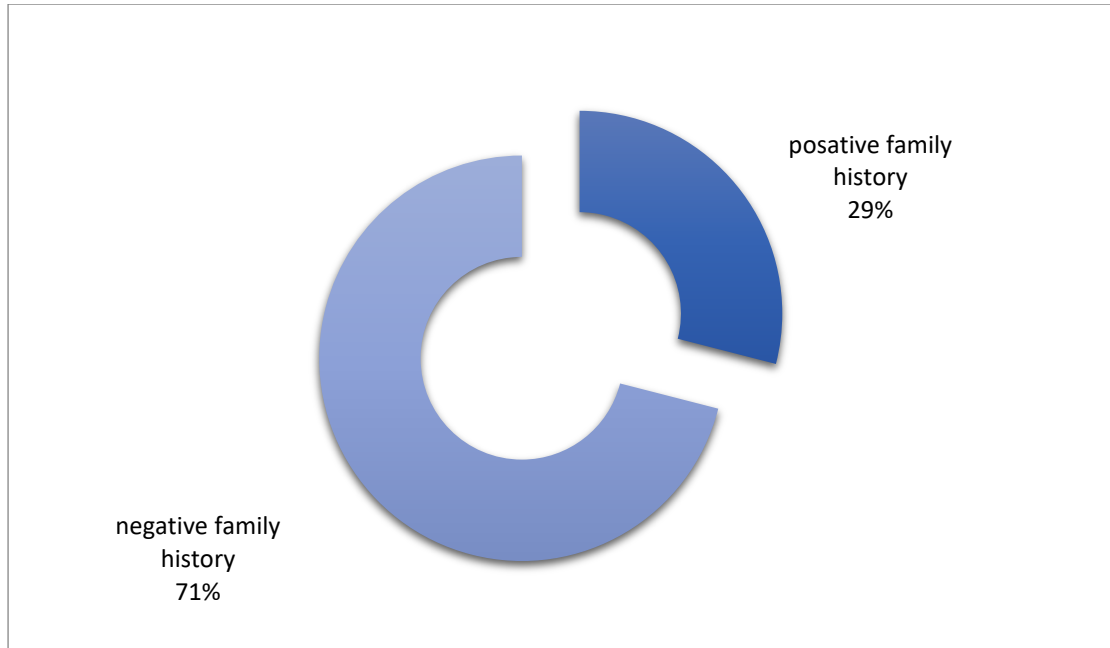


Figure (3): this figure shows the frequency that have family history. This figure show, that most of students with acne have not family history (71%) and with family history (29%).

Discussion

The total samples of study was (50) most of them was female (30) and lives in Baqubah (39), and the socio economic level was normal for (36) of students and good (13) with only one poor socio economic level.

In this study the most site of acne was in face (76%) then upper back (50%) and the lowest site was in scalp (3.3%).

This percentage approximately same when compare with study was conducted in Istanbul, Turkey [12], and study of Delhi, India [13], that the most site of acne was in face (73%), (71%) respectively and the lowest site was in scalp (5%), (7%) respectively.

According to this study the White comedones and papules the most common type of acne in percentage (62%), (54%) respectively.

Also in study was conducted in Jeddah, Saudi Arabia [14], the White comedones and papules the most common type of acne in percentage (66%), (57%) respectively.

While in study was conducted in Warsaw, Poland [15], the most common was white comedones (58%) then white comedones (41%).

The highest percentage of papules in this study when compare with study of Warsaw, Poland [15], may be due to Asian skin has an increased amount of melanin (the pigment in skin) compared to white or caucasian skin. Skin cells producing melanin tend to be more sensitive to any type of inflammation or injury.

In this study, the most of patients with acne receive treatment (64%), and there is (36%) is did not received treatment.

While in study of Delhi, India [13], the patients that did not receive treatment for acne is the highest (70%), and only (30%) is received treatment for acne.

This difference with our study may be due to low economic state of people in Delhi to care and treat the skin for cosmetic.

In this study, the most of students with acne have not family history (71%) and with family history (29%).

While in study of Jeddah, Saudi Arabia [14] and Istanbul, Turkey [12] the positive family history is the most in percentage (65%), and this disagree with this study may be due to the small sample size.

In the present study, the severity of acne according to Global acne grading system, that most of medical students with moderate severity of acne (45%) then mild (28%), severe (17%), and very sever about (10%).

This percentage approximately same in study was conducted in Bangladesh [16], that the moderate severity is the most common (40%) then mild (20%).

While in study was conducted in College of Medicine, King AbdulAziz University [17], the most common was mild in severity in percentage (70%), moderate cases was (23%), severe (7%) and without any case with very severe acne.

The highest percentage of moderate acne when compare with two previous studies due to high level of stress in students of Diyala university college of medicine and low skin care of students regularly.

Conclusions

- 1- Most site of acne was in face then upper back and the lowest site was in scalp.
- 2- The White comedones and papules the most common type of acne.
- 3- In this study, the most of patients with acne receive treatment and there is did not received treatment.
- 4- The most of students with acne have not family history.
- 5- According to Global acne grading system, that most of students with moderate severity of acne then mild severity.

Recommendations

- 1- We recommended that family physicians and other health care professionals should consider the psychosocial aspect of acne during the management of patients with acne.
- 2- Health education programs should focus on healthy lifestyle practices, including proper healthy nutrition and physical activity to prevent obesity as well as measures to quit smoking.
- 3- physicians and other health care professionals should address the psychosocial aspect while managing patients with acne.
- 4- Since acne is a very common problem in the community, further studies using a larger sample size representing the general population are needed to address the extent of the problem among the acne sufferers. In order to increase participation, an Arabic version of the scale needs to be developed.

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