

Acne Vulgaris Prevalence and Psychological Impact Among University Students in Jizan City

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Summary

Acne vulgaris is an extremely common chronic disorder affecting the skin, it happens in the form of blockage mostly combined with inflammation of sebaceous glands, prognosis of the disease is good most of the time but as a chronic disease the relapse can happen even during treatment.

Small non-inflamed acne lesions may not be more than slight nuisance but in patient with more inflamed lesions the social embarrassment, physical and even psychological scarring can be life alternating specially the starting time of appearance is adolescents when they are psychologically vulnerable and sensitive to any changes in their bodies, appearance and shape cause they are going through maximum psychological, social and physical changes

The study aimed to measure prevalence and knowledge about acne vulgaris, association between acne and habits and the psychological effects of acne.

The method is a cross-sectional study using stratified random sampling will be carried out among male and female student of Jazan University age between 18-25 in different colleges and sections. and the data will be collected using semi-structured self-administered questionnaire and analyzed by SPSS.

Because there is no previous studies interested with acne vulgaris in Jizan city. We want to conduct this study to evaluate prevalence, knowledge and psychological effect of acne.

What we found was that the prevalence of acne was 47.7% among both genders with knowledge percentage among affected of 47.8% which is low percentage regarding a skin condition affecting almost half of university student with psychological impact higher in females than males.

Depending on our results, we recommend health education programs and community based research to increase understanding towards this problem also to provide an easy access to the right accurate information, and to include the psychological evaluation in patient treatment plan finally yet importantly to provide curative programs aimed to improve help seeking behavior.

الملخص :

حب الشباب هو اضطراب مزمن شائع جدا يؤثر على الجلد ، ناتج عن انسداد والتهاب في الغدد الدهنية . وتحسن هذا المرض جيد في معظم الاوقات ، لكنه مرض مزمن قابل للانتكاسة والعودة خلال فترة العلاج .

الاصابة بحب الشباب الغير ملتهب قد لا تكون سوى ازعاج طفيف ، ولكن المصاب حب الشباب الأكثر التهاب قد تجعله يشعر بالحرج الاجتماعي ، البدني وحتى النفسي ، كذلك الندوب يمكن ان تغير من حياة الشخص خاصة في بداية ظهورها عند المراهقين فهم اكثر عرضة للتغيرات النفسية والحساسية اكثر ضد أي تغير في أشكالهم ، حيث يعتبر المظهر والشكل من العوامل الرئيسية في تغير الحالة النفسية والاجتماعية والجسدية .

الأهداف : هدفت الدراسة الى قياس انتشار والمعرفة حول حب الشباب ، العلاقة بين حب الشباب والعادات والآثار النفسية من حب الشباب .

الطريقة: في هذه الدراسة أجريت دراسة مقطعية باستخدام عينة عشوائية طبقية بين طلبة جامعة جازان من الذكور والاناث في جميع الكليات والأقسام المختلفة من سن ١٨ - ٢٥ وتم جمع البيانات بواسطة استبيانات وزعت على ٤٨٠ طالب وطالبة وتم معالجة هذه البيانات و تحليلها باستخدام برنامج الإحصاء .

النتائج : بسبب أن لا توجد دراسات سابقة معنية بحب الشباب في مدينة جيزان، أجرينا هذه الدراسة لتقييم الانتشار والمعرفة والتأثير النفسي الناتج عن حب الشباب .

و كانت نتيجة الدراسة انتشار حب الشباب بنسبة ٤٧.٧% بين كل الجنسين ، مع نسبة المعرفة عن حب الشباب بين المتضررين بنسبة ٤٧.٨% ، ووجد أن الاثر النفسي عند الإناث أعلى من الذكور .
التوصيات :

اعتمادا على نتائجنا نحن نوصي بزيادة برامج التثقيف الصحي والبحوث المجتمعية لزيادة الفهم تجاه هذه المشكلة ، أيضا توفير سهولة الوصول الى المعلومات الدقيقة الصحيحة عن حب الشباب ، وتشمل التقييم النفسي في خطة العلاج للمرضى، في نهاية المطاف نوصي بتوفير برامج علاجية تهدف الى تحسين سلوك طلب المساعدة الطبية .

Introduction

Acne vulgaris is an extremely common chronic disorder affecting the skin of face, neck, chest and happens in the form of blockage most of the time combined with inflammation of sebaceous glands. These glands are attached to skin hair follicles and combined they are called (pilosebaceous units). This blockage happens by its oily secretions (sebum), it can be presented also as non-inflammatory disorder (1–3). Acne typically developed when these glands come to life at puberty age and stimulated by male hormones secreted from adrenal gland of both females and males, the trapped sebum is ideal for bacterium called *Propionibacterium* that normally lives in the skin causing no harm normally but if large number developed in the blockage an inflammatory reaction develops (3,4). Causes of acne can vary from genetic, hormones, menstruation, emotional stress, sweating, medication, picking and squeezing the spots may cause further inflammation (4), types of acne vulgaris are: blackheads, whiteheads, papules, pustules, cysts, nodules and scars. It usually begins in adolescence and often resolved in adulthood but it may start late in thirties and forties (5–7). The worldwide prevalence of acne vulgaris in adolescent varies among populations from 44.1% - 94.9% (5,6,8).

Prognosis of the disease is good most of the time but as a chronic disease the relapse can happen even during treatment, one of the major problems is that usually treatment itself is postponed that patient may wait one year or even more before seeking medical advice. (7,9)

For treatment topical, systemic and physical therapy are used or designed combination, topical agents: antibiotics, benzoyl peroxide etc, systemic agents: antibiotics, hormonal therapy and isotretinoin, physical agents: lesion remove, photo-therapy is helpful in some cases, choose depends upon patient needs and condition (10).

In association with life style and habits, acne have noticed increase and decrease with diet, weight and exercise, acne number and severity increase with increased fat food and high GI (glycaemic index) consume which found in carbs such as bread biscuit and sweets that increase sugar levels which trigger production of hormones, weight: maintaining healthy weight may lead to decrease acne appearance and aggravation due to decrease body fat levels,

last but not least exercise : generally its important to maintain healthy body and healthy skin also .(11–13)

Small non-inflamed acne lesions may not be more than slight nuisance but in patient with more inflamed lesions the social embarrassment , physical and even psychological scarring can be life alternating specially the starting time of appearance is adolescents when they are psychologically vulnerable and sensitive to any changes in their bodies, appearance and shape cause they are going through maximum psychological , social and physical changes , most of adolescent go through growing issues of body image , social and sexual sides of patient life . Some patient are severely affected that they require more than acne therapy by itself. (7,14)

Acne had an association with increased risk of depression , anxiety and even suicidal tendencies , given the fact that acne cause psychological impact it affects social and academic performance of the affected, some studies showed that there are gender difference in the psychological effect of acne patient so psychological impact on acne patients is greater than generally assumed therefore the emotional problems of acne patient should be included in treatment plan ,

Acne as a major embarrassment factor the adolescents with acne usually be stressed and uncomfortable that he\she avoid people eye contact, try to cover their faces with long hair and wears a lot of make-up and face or bodyproducts which are extremely costly specially on students and in the other hand can even worsen the acne condition , the main problem with acne is that it's in the most visible body part which is the face not like other dermatological conditions that can be covered with clothes that limitation is heightening issues of socializing and beauty image.(14) According to Sulzberger , Marion B “There is no single disorder that can cause more psychic trauma , more maladjustment in parents and children , more overall insecurity and inferiority feeling and greater numbers of psychic suffering than can acne vulgaris do” (7,14).

Since acne major effect is on people in their younger age we will conduct this research on university student to see their knowledge about the acne , how do they associate it with their habits and in the end we will measure the psychological impact of this condition in their life using valid instrument called "skindex-16" which is standard questionnaire that's include 16 questions deals with potential effect of any dermatologic condition on patient emotional sphere and psychological functioning .

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Problem Statement :

What we found in worldwide studies that acne is definitely a major problem more than skin disease but to a life effecting condition on private, general, social and even academic life, that our purpose of conducting this research is to measure the roots of this problem here in Jizan city and is the acne as sever, real and bothering as we found in other studies and the results would be compared in the end to achieve that aim.

Research objectives:

GENERAL OBJECTIVE :

- to identify prevalence ,knowledge and psychological impact of acne vulgaris among university students

SPECIFIC OBJECTIVE

- (1) to identify prevalence and knowledge about acne vulgaris .
- (2) to identify association between acne and habits
- (3) to identify the psychological effects of acne

Research Methods:

Study design:

cross-sectional study aims to measure acne prevalence, knowledge, psychological impact and association with habits.

Study area:

The research was conducted in colleges in Jazan University. Jazan University is a leading established in 1426 and populated by more educational institution in the region. It was The university includes 18 colleges and four research centers than 50000 students.

Study population and sampling :

The study targeted all university students in the age group (18-25). The inclusion criteria for this study were being students registered for the academic year 1436-1437 during the age group (18-25).

Type of sample : Stratified random sample .

Sample size:

Since there is no prior knowledge about the prevalence of acne vulgaris in jizan city we will set the value $\pi=0.5$ to provide maximum sample size , d the desired marginal error = 0.05 and $z = 1.96$, the

study sample size, dented (n) is given by : $n = \frac{(1.96)^2 x(0.5)x(0.5)}{(0.05)^2} = 384$

Data collection methods:

The data collected by using semi-structured self-administered questionnaire and it will randomly distribute among target population.

Questionnaire Design :

The questionnaire is divide into two parts. The first part includes personal data like age, gender, and marital status. The second part includes questions to assess: (1) prevalence and knowledge acne vulgaris among university students in Jazan city (3) association between acne and habits (4) the psychological effects of acne , The questionnaires will be distribute and explained to Participants after obtaining their verbal consent. Questionnaires will be collected after being completed.

Data analysis :

The data will be enter and analyze in a personal computer using statistical package for social sciences (SPSS) software version 20 .

Results :

The study conducted upon 480 participants in random selection method; self-administrated questioner used to collect the data after ethical constant taken. After limiting, the missing questioners and un-completed ones out net result of data were 433 questioners for participants aged between 18-25 years old. *The personal data of participants shown in the **Table 1** below.*

Table 1 personal data of the participants

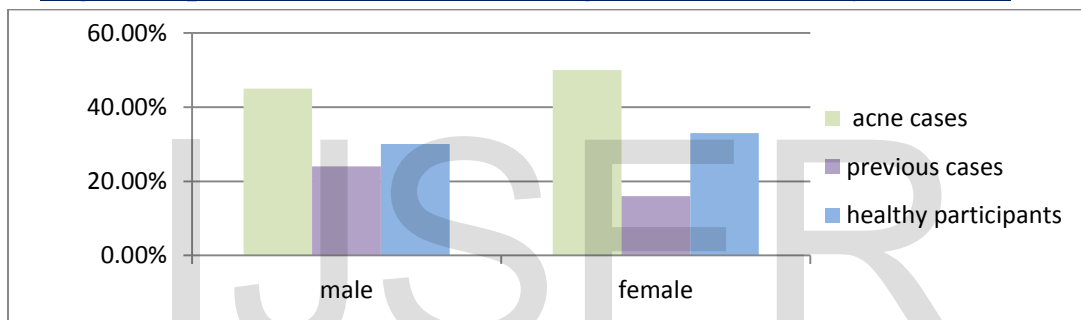
Characteristic	Gender		Total
	Female	Male	
AGE			
18 – 20	92 (21.3 %)	96 (22 %)	188 (43.5%)
21- 25	145 (33.5%)	100 (23%)	245 (56.5%)
BMI			
Under weight	101 (42.6%)	62(31.6%)	163 (74.2%)
Normal weight	101 (42.6%)	70 (35.7%)	171 (78.3%)
Over weight	26 (10.9%)	37 (18.8%)	63 (29.7%)
Obesity	9 (3.7%)	26 (13.7%)	35 (17.4%)
MARITAL STATUS			
Single	199 (46%)	189 (43.6%)	388 (89.6%)
Married	33 (7.6%)	5 (1.2%)	38 (8.8%)
Divorced	4 (0.9%)	1 (0.2%)	5 (1.2%)
Widow	1 (0.2%)	1 (0.2%)	2 (0.5%)
LIVING AREA			
City	84 (19.4%)	67 (15.5%)	151 (34.9%)
Coastal	15 (3%)	13 (3.5%)	28 (6.5%)
Village	129 (29.8%)	106 (24.5%)	235 (54.3%)
Mountain	9 (2.1%)	10 (2.3%)	19 (4.4%)
ECONOMIC STATUS			
Less than 5000 SR	25 (5.8%)	34 (7.9%)	59 (13.6 %)
5000 - 10000 SR	106 (24.5%)	98 (22.6%)	204 (47%)
More than 10000 SR	105 (24.2%)	62 (14.3%)	167 (38.6%)

Nearly half of the participants have acne **47.7%** (57.41% females and **42.58%** males). **19.9%** had past medical history of acne (**44.7%** females and **55.29%** males). **Table 2**

Table 2 : prevalence of acne among Jazan university students

	Male	Female	total	
			No	%
Acne cases	89(42.58%)	120(57.41%)	209	47.7%
Used to have acne	47(55.29%)	38(44.7%)	85	19.9%
Healthy participants	61	78	139	32.4%
Total	196	237	433	100 %

Figure 1:prevalence of acne among Jazan university students



Only one third of the acne patient (33.6%) sought medical advice for diagnose and treatment of their condition . **Table 3**

Table 3 : acne patients diagnosed by specialist

	Diagnosed by doctor	Self-prediction	Total
Acne cases	33.6%	66.4%	100%
Previous acne	38.5%	61.5%	100%

Digging more into seeking medical treatment behavior we found that female have a higher percentage at getting diagnosed and treated by doctors 70% while male have much less percentage 29% and the difference between genders regarding seeking medical advice was statistically significant ($p < 0.05$) **Table 4**

Table 4: seeking medical treatment behavior

	Females	Males	p-value
Seeking medical treatment	70.6%	29%	0.007

Furthermore, 26.8% of acne patient self-reported they had a mild form of acne , 16.3% sever form , 1.4% scars , 18.2% forehead spread and 11% blackheads, in the other hand numbers of mild acne were lower among previous cases 18.8% , higher sever form 20% , slightly lower scars 1.2% ,higher forehead spread and lower blackheads also 10.6%. **Table5**.

Table 5 : acne types distribution among affected cases :

Type of acne	Have acne	Previous acne	Total
Mild	26.8%	18.8%	45.6%
Sever	16.3%	20%	36.3%
Scars	1.4%	1.2%	2.6%
forehead	18.2%	20%	38.2%
blackheads	11%	10.6%	21.6%

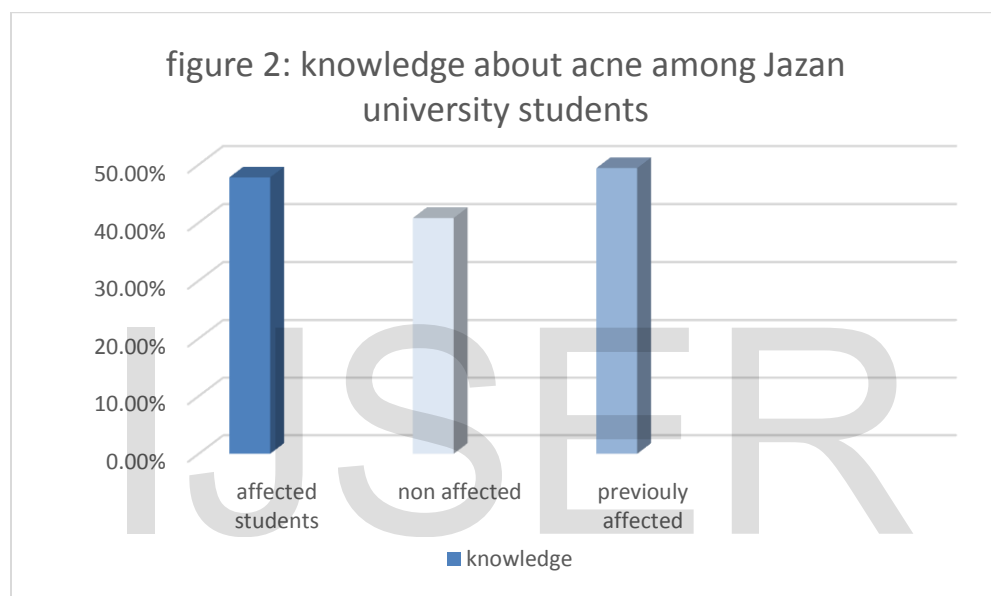
When cases were asked about their knowledge the results were 47.8% for acne patient, 49.4% among previous cases and 40.8% among non-affected participants, what we can conclude is that there actually no large difference between affected and non-affected when it comes to the knowledge and the highest group were the previously affected, for gender difference females had 48% percentage of knowledge while males had slightly lower percent 43% , the difference between cases and genders was both statistically significant ($p < 0.05$)

Table6.

Table 6: knowledge about acne among university students

	Student affected	Not affected	Previous affected	p-value
percentage of knowledge:	209 (47.8%)	139 (40.8%)	85 (49.4%)	.05
	male	female	p-value	
Mean Knowledge	10.9	13.07	.001	
Percentage knowledge	43%	48%		

Figure 2 : knowledge about acne among Jazan university students



When participant were asked about acne other names 73% agreed that it called pimples , 33% only actually knew that it's the same as blackheads, 19% only knew it's a chronic disease , 89% knew its curable disease , causing factors where known as hormones ,bacteria ,stress and poor hygiene by 79.3%, 57.2%, 52% and 43.5% as we can see the most agreed with the hormonal factor, aggravating factors also known as diet, cosmetics, shaving, pimples squeezing , sleep disturb and sweating by 80.5%, 65.5%, 55.4%, 67%, 4% and 36%, diet was the most believed aggravating factor, 63% agreed that oil controlling face product can improve acne condition , the largest number 74% agreed that daily face washing have the best improvement effect and half of participants 52.2% went with sun protectors , 64.4% said that antibiotics can be considered as acne treatment. **Table 7**

Table 7: common facts known about acne among university student

The knowledge	Knowledge Percentage
Acne also known by :	
Pimples	73%
Blackheads	33%
Acne is :	
chronic disease	19%
Curable disease	89%
Acne caused by :	
Hormones	79.3%
Bacteria	57.2%
Anxiety, tension and stress	52%
poor hygiene	43.5%
Factors exacerbate acne:	
Diet and fatty food	80.5%
Cosmetics product	65.5%
Shaving	55.4%
squeezing of pimples and discharging it	67%
sleep disturb	40%
High temperature and sweating	36%
Factors Improves acne condition:	
Fat controlling face products	63%
Face daily washing	74%
Sun protectors	52.2%
Antibiotics considered as a treatment for acne.	64.4%

On the other hand, there was wrong ideas, information and facts about acne that were quietly common among the university students in large percentage, 81% believed acne isn't a cronic disease, 67% didn't consider blackheads as type of acne, 64% thought sweating have no association with acne condition, 56% thought that poor hygiene isn't a causative factor of acne, 47% took acne as an infectious disease. **(Table.8)**

Table 8: common wrong facts about acne and percentage of spread

wrong fact:	Percentage of people answered wrong	Correct information
Acne isn't a chronic disease	81%	It is a chronic disease
Blackheads is a separated type of skin conditions	67%	It is a type of acne
High temperature and sweating have no association with acne condition	64%	It is exacerbate acne
Acne isn't associated with poor hygiene	56%	Poor hygiene is a causative factor of acne
Acne is an infectious disease	47%	It is not an infectious disease

For the majority of patient (62.5 females and 70.8%) acne started at the age of 15-20 , the most common site was for both genders the face 77.5% in females and 74.2% in males the difference between females and males was statistically significant ($p < 0.05$) , causing \ aggravating factors were majorly stress in females 81.7% and sun exposer in males 50.6% , causing \ aggravating food were majorly chocolate for females 66.7% and fried food for males 50.6% the difference between females and males was statistically significant ($p < 0.05$) . **Table 9**

Figure 3: causing \ aggravating factors to the cases

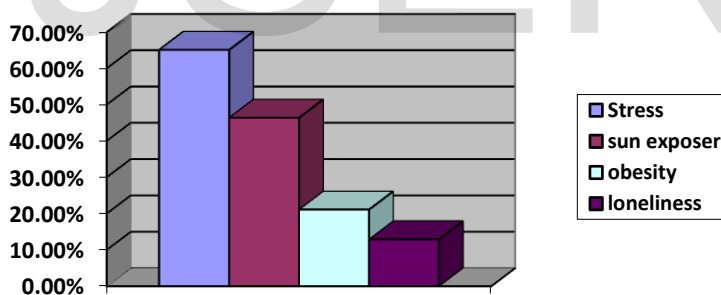


Figure4: causing \ aggravating food to the cases

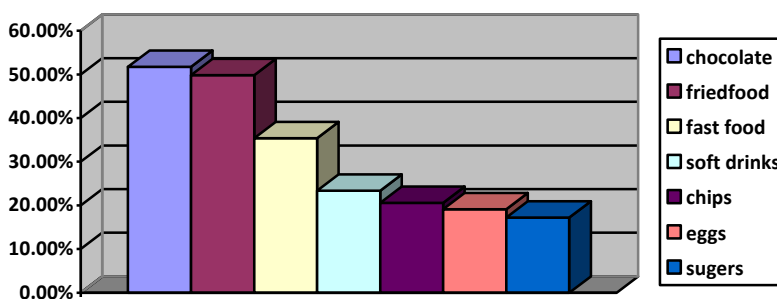


Table 9: personal habits of acne patient among Jazan university students

Gender			P-value	gender			p-value :
Female	male	female		male			
acne onset :				Causing aggravating factors			
10-15	28(23.3%)	15(16.9%)	0.006	stress	98(81.7%)	38(42.7%)	0.00
15-20	75(62.5%)	63(70.8%)		Sun exposer	52(43.3%)	45(50.6%)	0.01
20-25	16(13.3)	4(4.5)		Sleep disturb	32(26.7%)	21(23.6%)	0.03
Acne spread area :				Physical activity :			
Face	93(77.5%)	66(74.2%)	0.1	always	2(1.7%)	10(11.2%)	0.00
Chest	3(2.5%)	3(3.4%)		sometimes	22(18.3%)	32(36%)	
back	20(16.7%)	10(11.2%)		seldom	48(40%)	22(24.7%)	
shoulders	3(2.5%)	4 (4.5%)		rarely	47(39.2%)	18(20.2%)	
Sleeping hours :				Sun exposer :			
Less than 5	12(10%)	5(5.6%)	0.08	always	24(20%)	30(33.7%)	0.00
5-8	59(49.2%)	51(57.3%)		sometimes	50(41.7%)	43(48.3%)	
8-10	34(28.3%)	17(19.1%)		seldom	34(28.3%)	9(10.1%)	
more	13(10.8%)	9(10.1%)		rarely	9(7.5%)	0	
Face shaving (males only):				Makeup usage frequency (females only)			
always	-	13(14.6%)	0.00	Always	14(11.7%)	-	0.00
sometimes	-	33(37.1%)		sometimes	39(32.5%)	-	
seldom	-	15(16.9%)		seldom	43(35.8%)	-	
rarely	-	20(22.5%)		Rarely	23(19.2%)	-	
Time spent studying :				Time spent with family :			
always	47(39.2%)	23(25.8%)	0.01	always	40(33.3%)	25(7.9%)	0.08
sometimes	48(40%)	34(38.2%)		sometimes	60(50%)	41(28.1%)	
seldom	15(12.5%)	19(21.3%)		seldom	18(15%)	19(21.3%)	
rarely	9(7.5%)	6(6.7%)		rarely	1(.8%)	0	
Acne causing aggravating food :							
Chocolate	80(66.7%)	28(31.5%)	0.00	Fast food	42(35%)	32(36%)	0.02
Fried food	59(49.2%)	45(50.6%)	0.02	Soft drinks	29(24.2%)	20(22.5%)	0.04

The results of psychological impact depending on skindex-16 (standard tool used to measure the potential effect of skin conditions on psychological functioning) shows that highest percentage of psychological affection was recorded between currently affected females 59% compared to affected males 44% the difference between females and males was statistically significant ($p < 0.05$) and the lowest between previously affected participants in both genders 34%.

Table 10 : the psychological impact of acne among university students

<u>Psychological impact of acne</u>			
Female		Male	
Affected	Previously affected	Affected	Previously affected
59%	34.4%	44%	34.3%
p-value	.000		

74% of patient said that acne increase their level of anxiety, 46% of patient feel depressed cause of their acne condition and 35% of patient had impairment in social connection because of acne .

Discussion

There are few studies interested in prevalence, knowledge and psychological impact of acne and perception of the patients on cause, aggravating factors and daily habits associated with acne , one of this study main aims was to conclude how much is this problem affecting university student on personal, social and emotional scale and how much large is actually its spread.

our result shows that the prevalence of acne among university students is 47.7% (57.41% females and 42.58% males) which is higher compared to study conducted in Syria 34.7% and slightly higher than the results of study conducted in France 46% in the other hand its lower than the prevalence recorded in study conducted in Jeddah 64.5% , our results also shows that female have a higher occurrence percent 57.41% which is slightly lower than recorded result in study conducted in Oman shows that females affected percent were 60% while in the other hands male are 40% which slightly lower than our study which found that males affected by 42.58% .

In our study we found that 33.6% of acne patient asked for medical advice and visited a dermatologist, its higher number than the one recorded in study conducted in Pakistan which was 20.5%.

Furthermore, in this study the distribution of acne types among patient were 26.8% mild form which is lower than result of study conducted in Malaysia 35% and also lower than result of same form in France 50.2% , for sever form it was 16.3% which is way higher than results of Malaysia study 1.6% also higher than recorded percent in Korea 10.2% but lower than Turkey results 25.6% last form is acne scars found to be 1.4% which is so much lower than Malaysia results 59%.

In our study we found that student knowledge about acne is moderate 45.5% (higher in females 48% than males 43%) , its higher compared to similar study conducted in al-Khobar 41.7% .

knowledge about causing and aggravating factors were that hormones has the higher percent of knowledge 79% followed by bacteria 57% , stress 52% and last but not least poor hygiene 44% , compared to similar study in Jeddah the order was the same with higher hormones knowledge level 88,2% followed by bacteria 20% , stress 58% , poor hygiene 15.4% , we can conclude that our study higher in knowledge about bacteria and poor hygiene and lower about hormones and stress .

The highest misconception were that student assumed acne is an infectious disease 33% but it's lower than the results recorded in France study 77%.

Furthermore we found that in the majority of patient acne started in the age of 15-20 (62.5% females and 70.8% males) and the most common site of distribution is the face (77.5% females and 74.2% males) compared to France study we found it had the same results with starting age and site of distribution.

The majority of female patients said that chocolate is their aggravating food (66.7%) which is lower than patients in Dammam who recorded 79.4% , and stress for their aggravating factor(81.7%) which is so much higher compared to similar result in Dammam study 54% , in the other hand the majority of males agreed that fried food is there aggravating food (50.6%) which is similar to Dammam result with fatty food (53%) , and sun-exposer as there aggravating factor (50.6%) which is lower than result founded in Pakistan study (78%)

Finally we found that the psychological impact of acne among the affected is 59% in females and 44% in males compared to al-Khobar with 63% of affection in females is lower but higher in males 40%, 73.9% of patient said that acne increase their level of anxiety also in turkey study they found increased level of anxiety among acne patient, 46% of patient feel depressed cause of their acne condition which is lower than recorded number in Jeddah 79% and 35% of patient had impairment in social connection because of acne which is higher than similar result in Nigeria found that 21.9% have the same impairment , This results estimated depending on skindex-16 (standard tool used to measure the potential effect of skin conditions on psychological functioning).

Conclusions and Recommendations

Conclusion:

Acne is one of the common skin disease among Jazan university students, affecting both gender. Results of our study shows that the prevalence of acne among university students is high in female than male . There is an actual defect in the general knowledge about acne while it is a very common disease , defect in understanding the condition and how to improve it and large underestimation for the psychological and emotional effect of the problem on cases emotional sphere .There were several significant factors associated with acne formation that causing and aggravating it .Consider to psychological effect, it appears greater in female and this is expected since female are more sensitive toward their skin

Recommendations :

- There is a need for health education programs and to improve the understanding of the condition and an easy access to appropriate right information.

- We require further community based research to evaluate the effectiveness of such educational interventions in understanding the natural history, pathogenesis and the sequelae of acne, increasing help-seeking behavior, and improving the awareness of patients about acne.

- We need curative program to lessen the psychosocial impact of the disease on the patients and to improve help seeking behavior
- including psychological evaluation and consideration of emotional problems in acne patients in treatment plan .

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• **Table of contents**

Content	Page no.
Cover Page	1
Summary	2
Introduction	4
Problem Statement	6
Research Objectives	6
Materials and Methods	7
Results	8
Discussion	15
Conclusions and Recommendations	18
References	19
Table of contents	20