KNOWLEDGE AND ATTITUDE OF ADOLESCENT STUDENTS ABOUT ACNE VULGARIS AT SECONDARY SCHOOLS IN ASSIUT CITY

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Abstract

Background: Acne vulgaris is one of the commonest skin disorders which dermatologists have to treat, mainly affect adolescents, though it may present at any age. Acne is definited as multifactorial chronic inflammatory disease of pilosebaceous . **The study aimed to** Assessment of adolescents students' knowledge and attitude toward acne vulgaris in secondary schools .**Subjects and methods** descriptive research cross sectional design was used. The study was conducted in four secondary schools .The total study sample was 1026 students which were selected randomly. **Tools of the study**: the study included two tools: first tool was self administered structure questionnaire, which included two parts; first part included demographic characteristics of studied students, second part included knowledge about acne. The second tool was likert scale to measure attitudes toward acne. **Results:** It was found that 67% of studied students were female. The majority (91.1%) of studied students had poor knowledge about acne. Also, it was found that 61.9% of studied students had positive attitude **Conclusion:** The majority of the studied students had poor knowledge about acne and more than three fifth of them had positive attitude toward acne. **Recommendations:** School health nurses should be attended the educational programs about acne because they are most contact and deal with the students.

Keywords: Acne vulgaris; Knowledge; Attitude; Adolescent students & Secondary schools

Introduction:

Acne vulgaris is a common inflammatory skin condition. Although often perceived as a self limited disease of adolescence, its prevalence remains high into adulthood. Nearly 90% of teenagers have acne, and half of them continue to experience symptoms as adults and require long term therapy, there has been a recent effort to reclassify acne as a chronic disease. Acne has clear detrimental psychosocial effects and may lead to permanent scarring (Dawson & Dellavalle, 2013).

Many studies have evaluated the knowledge, beliefs, and perceptions about acne causation among acne patients and their families. It is interesting that no major differences were noted in the beliefs and perceptions of the pathogenesis of acne, and the role of diet was uniformly noted among acne patients from different societies and cultures **(Durai & Nair , 2015)**.

Acne vulgaris is defining as a chronic inflammation of the pilosebaceous follicles, with multi-factorial pathogenesis. Typical lesions are open and closed comedones, inflammatory papules, pustules, cysts and nodules. Lesions appear mostly on the face, but neck, chest, upper parts of back, and shoulders may also be involved **(Pokharel &Harish ,2014)**

Acne may be known as hormonal acne because one major causative factor is the hormone testosterone. Testosterone levels go up in the teenage years as part of puberty. This causes male development in

boys and gives muscle and bone strength in girls. The hormone also has the effect of increasing sebum production at the base of hairs. This is because the glands that secrete the oil are sensitive to testosterone. Other hormones play a part in acne occurance, too for women, hormonal changes relating to pregnancy or the menstrual cycle can also trigger acne **(Bettoli et al, 2015).**

Treatment of acne is usually postponed that patients may wait more than one year before seeking medical advice. Acne is a disorder in which adherence has a major impact on treatment outcome. Improvement of current knowledge and understanding of the different presentations of acne allow for individualization, tailoring treatment, and improved outcomes for acne patients **(Darwish & Al-Rubaya ,2013**).

Significant of the study:

In Egypt, detailed studies on the magnitude of the problem regarding prevalence, sex distribution, probable associated risk factors and treatment patterns are lacking. The prevalence of acne vulgaris in the study conducted by **El-Khateeb et al, 2014** under the title of prevalence, beliefs, patients' attitudes, severity and impact on quality of life in Egypt reported that the prevalence of acne among the sample was 54.2%.

Aim of the study

Assessment of adolescents students' knowledge and attitude toward acne vulgaris.

Subjects and methods:

Research design:

Descriptive research cross sectional design was used in this study.

Setting of the study:

The study was carried out in four secondary schools, El Moushir Ahmed Ismail secondary school for boys, El Khayat secondary school for girls and Tahrir language school for boys and girls

and Abd El Moneim Riad commercial secondary school at Assiut city.

Sampling and sample size:

Multi stage random sample was used in this study, Assiut city includes 29 secondary schools, 12 general governmental secondary schools and 17 technical secondary schools, four schools were selected randomly. The sample was detected by taking 25% from the total number of each school, which was selected randomly.

School name	Total number of students	Studied students
El Moushir Ahmed Ismail	1104	275
El Khayat Secondary School For Girls	1218	305
Tahrir Language School	134	34
Abdel Moneim Riad Commercial	1650	412
Total	4106	1026

Tools of the study:

Tool I:

Self-administered questionnaire was developed by the research team for data collection. It was based on review of relevant literatures.

This questionnaire composed of two parts:

Part (I): it was included some demographic characteristics of adolescent students which included age, sex, academic year, fathers' education, fathers' occupation, mothers' education and mothers' occupation.

Part (II): it was included knowledge about acne vulgaris, it include 9 questions mentioned as the following : definition of acne vulgaris, common places in human body affected, degree of acne, types of acne vulgaris, shapes, causes, factors that

increase the severity of acne vulgaris, negative effects, and methods of prevention .The total grades of knowledge were (55); a correct response was scored one grade and zero for incorrect response and don't know. Total score was calculated by summing up and convert into a percent score as following:- Poor < 50% Fair 50-70% Good > 70% (**Alhatemi,2017**)

Tool II

Likert scale was used to assess adolescent students' attitude towards acne vulgaris. The responses were based on a three-point likert scale (agree, uncertain and disagree). Attitude scale contains 14 statements, items were scored (2, 1, and 0) respectively. The scoring reversed for negative statements. Total score was calculated by summing up and convert into a percent score. Attitude was considered positive if the score was ≥ 60% and negative attitude, if the score < 60% (**Ibrahim et al, 2009& Khalaf ,2015**).

Validity of the tools :

The tools were transferred to Arabic language and reviewed to ascertain their validity by seven experts in medical and nursing sciences, who reviewed the instrument for clarity, relevance, comprehensiveness, understanding and applicability

Reliability: Reliability of tool II was assessed using alpha-cron-bach test to test the internal consistency r1 =0.842 .

Field work:

The data was collected from the half of October 2014 to the end December 2014.The assessment was done for 1026 adolescent students.The researcher met the students in their classes. Self administered questionnaire filled by the students themselves. The length of each interview was (20-30) minutes. The data was collected in (two day/ week). Every week about (80-90) sheets were finished.

Statistical Analysis:

The data obtained were reviewed, prepared for computer entry, coded, analyzed and tabulated to evaluate the differences between the groups under the study. Descriptive statistics (i.e., frequencies, mean, standard deviation) was done using computer program SPSS version 19. Chi-square test and the test was significant when P-values were less than 0.05 or (P< 0.05).

Results:

Table(1): show demographic characteristics of studied adolescent students. It was observed that about three fifth (59.6%) of adolescent students attended general secondary schools. Concerning adolescent students' age, it was showed that three fifth (60.1%) of adolescent students , their age ranged from (15-16 years), while 39.9% of them their age was more than 16 years .The Mean age ± SD was 16.37 ± 1.18 .

Concerning adolescent students' sex, it was found that slightly more than two third (67%) of adolescent students were female. The table illustrates that 53.3% of students' fathers and 45.1% of students' mothers had university education, while 1.9% and 5.4% of students' fathers and students' mothers were illiterate respectively.

Also, it was observed that more than half (55.1%) of students' fathers were governmental employee and only 2.7% of them were farmers, while 60.4% of students' mothers were housewives.

Table (2): shows relationship between demographic characteristics of studied adolescent students and their knowledge about acne vulgaris. This table reveals that there is statistically significant difference between knowledge of studied adolescent students and mothers' education and mothers' occupation ,P=0.014 &0.000 respectively .In contrast there is not significant difference between knowledge and adolescent students' age, adolescent students' sex and fathers' education, P =0.888, 0.902&0.248 respectively.

Table (3): shows relationship between demographic characteristics of studied adolescent students and their attitude toward acne vulgaris. This table illustrates that there is statistically significant difference between attitude of studied adolescent students and adolescent students' sex, mothers' education and mothers' occupation P=0.006, 0.002& 0.000 respectively. In contrast, there is not significant difference between attitude and adolescent students' age and fathers' education, P= 0.707& 0.096 respectively.

Figure (1): illustrates that the majority of studied adolescent students (91.1%) had poor knowledge about acne vulgaris, while only 6.6% and 2.3% of them had fair and good knowledge respectively.

Figure (2): shows that slightly more than three fifth (61.9%) of studied adolescent students had positive attitude and 38.1% of them had negative attitude toward acne vulgaris.

Table (1): Distribution of studied adolescent students according to their demographic characteristics at Assiut city, 201

| Items	No (n= 1026)	%
Adolescent students' age:		
15 – 16 years	617	60.1
> 16 years	409	39.9
Mean ± SD (Range)	16.37 ± 1.18 (15.0 – 20.0)	
Adolescent students' sex:		
Male	339	33.0
Female	687	67.0
Fathers' education:		
Illiterate	19	1.9
Read & write	83	8.1
Basic education	104	10.1
Secondary	273	26.6
University or more	547	53.3
Technical worker	116	11.3
Farmer	28	2.7
Fathers' occupation:		
Worker	120	11.7
Free business	85	8.3
Governmental employee	565	55.1
Retired	56	5.5
Unemployed	33	3.2
Died	23	2.2
Mothers' education:		
Illiterate	55	5.4
Read & write	73	7.1
Basic education	90	8.8
Secondary	345	33.6
University or more	463	45.1
Mothers' occupation :		
Working	404	39.4
Housewife	620	60.4
Died	2	0.2
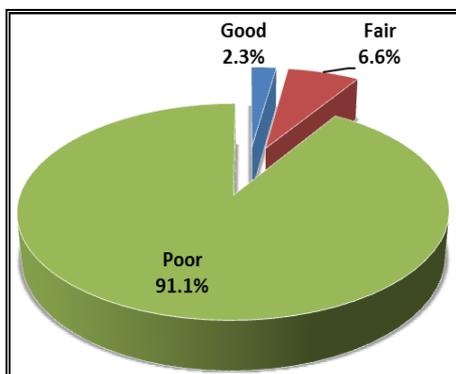
Figure (1): Distribution of the studied adolescent students according to their total score of knowledge about acne vulgaris in Assiut city, 2015 (n=1026)
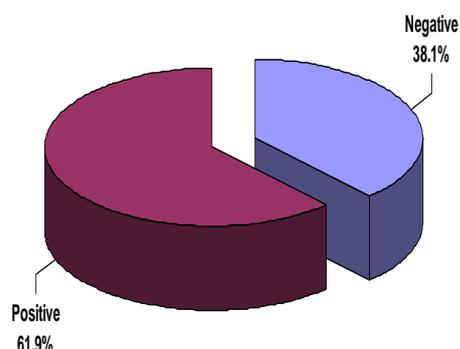
Figure (2): Distribution of studied adolescent students according to their total score of attitude toward acne vulgaris in Assiut city, 2015 (n=1026)

Table (2): Relationship between demographic characteristics of studied adolescent students and their knowledge about acne vulgaris in Assiut city, 2015

Items (n= 1026)	Knowledge						X^2	P-value
	Poor (n= 935)		Fair (n= 68)		Good (n= 23)			
	No.	%	No.	%	No.	%		
Adolescent students' age:								
15 – 16 years	564	60.3	39	57.4	14	60.9	0.24	0.888
> 16 years	371	39.7	29	42.6	9	39.1		
Adolescent students' sex:								
Male	307	32.8	24	35.3	8	34.8	0.21	0.902
Female	628	67.2	44	64.7	15	65.2		
Fathers' education:								
Illiterate	19	2.0	0	0.0	0	0.0		
Read & write	77	8.2	4	5.9	2	8.7		
Basic education	98	10.5	3	4.4	3	13.0	10.25	0.248
Secondary	253	27.1	18	26.5	2	8.7		
High education	488	52.2	43	63.2	16	69.6		
Mothers' education:								
Illiterate	53	5.7	1	1.5	1	4.3		
Read & write	70	7.5	2	2.9	1	4.3		
Basic education	84	9.2	3	4.4	1	4.3	19.15	0.014*
Secondary	323	34.5	18	26.5	4	17.4		
High education	403	43.1	44	64.7	16	69.6		
Mothers' occupation : €								
Worker	347	37.1	42	61.8	15	65.2	22.79	0.000*
Housewife	586	62.7	26	38.2	8	34.8		

€ 2 mothers were dead   *There is significant difference (P<0.05) X^2 Chi-square test

Table (3): Relationship between demographic characteristics of studied adolescent students and their attitude toward acne vulgaris in Assiut city, 2015

Items (n=1026)	Attitude				X^2	P-value
	Negative (n= 391)		Positive (n= 635)			
	No.	%	No.	%		
Adolescent students' age:						
15 – 16 years	238	60.9	379	59.7	0.14	0.707
> 16 years	153	39.1	256	40.3		
Adolescent students' sex:						
Male	109	27.9	230	36.2	7.61	0.006*
Female	282	72.1	405	63.8		
Fathers' education:						
Illiterate	8	2.0	11	1.7		
Read & write	30	7.7	53	8.3		
Basic education	46	11.8	58	9.1	7.88	0.096
Secondary	118	30.2	155	24.4		
High education	189	48.3	358	56.4		
Mothers' education:						
Illiterate	20	5.1	35	5.5		
Read & write	36	9.2	37	5.8		
Basic education	38	9.7	52	8.2	16.76	0.002*
Secondary	150	38.4	195	30.7		
High education	147	37.6	316	49.8		
Mothers' occupation : €						
Worker	127	32.5	277	43.6	15.40	0.000*
Housewife	262	67.0	358	56.4		

€ 2 mothers were dead * There is significant difference (P<0.05) X^2 Chi-square test

Discussion:

Acne vulgaris is a common inflammatory skin condition. Although often perceived as a self limited disease of adolescence, its prevalence remains high into adulthood. Nearly 90% of teenagers have acne, and half of them continue to experience symptoms as adults and require long term therapy, there has been a recent effort to reclassify acne as a chronic disease. Acne has clear detrimental psychosocial effects and may lead to permanent scarring **(Dawson & Dellavalle ,2013)**

Regarding to students' age, the present study showed that slightly more than three fifth of studied students' age was between (15-16 years) with mean age ± SD 16.37 ± 1.18.Concerning students' sex, the study reveled that males were one third, while females were two thirds. These results agreed with **El-Hamd et al, 2017** who conducted a study about Prevalence of acne vulgaris and its impact of the quality of life among secondary school-aged adolescents in Sohag Province, Egypt and they reported that the mean age of the students with acne was 16.84±0.87.

Also, these results supported by **Tahir &Ansari, 2012** who conducted study in Pakistan about beliefs, perceptions and expectations among acne patients and they reported that 37% of studied sample were males and 63% were females.

Moreover, the current results supported by **El-Khateeb et al, 2014**who conducted a study under the title of prevalence,

beliefs, patients' attitudes, severity and impact on quality of life in Egypt and they reported that 58.9% were females and 41.1% were males.

On the other hand, these results disagreed with **Pokharel & Harish ,2014** who carried out a study about acne vulgaris: knowledge and attitude among Nepali school students and they reported that males more than females. Also, present study disagreed with **Peric'et al,2013** who conducted study in Serbia about prevalence and quality of life in high school pupils with acne. They reported that 84.3% of students were girls and 15.7% of them were boys.

According to parents' education; the study showed that more than half of students' fathers and more than two fifth of students' mothers had high education, while minority of students' fathers and students' mothers were illiterate. These results were in the same line with **Bagatin et al, 2014** who conducted study in São Paulo , Brazil about acne vulgaris: prevalence and clinical forms in adolescents. They releaved that 62.8% of students' fathers and 62.8% of students' mothers had high education. While only 5.8% of students' fathers and 5.5% of students' mothers were incomplete basic education. In addition, 2% of students' fathers and 3.5% of students' mothers had basic education.

As regard parents ' occupation, the present study found that more than half of students' fathers were employee and slightly more than three fifth of students' mothers were house wives .These results were in contrast with **Sultana ,2012** who carried   out   study   in   Dhaka   city , Bangladesh about   knowledge on acne vulgaris on adolescent girls. He reported that about half (48.2%) of adolescents' fathers were service holders. However 5.5% of their fathers were teachers. But he supported the present study on that 80.5% of adolescents' mothers were housewives.

Regarding to students' knowledge about acne, the present study found that the majority of studied students had poor knowledge, while the minority of the studied students had the good knowledge. These results may be explained by inadequate health education provided to adolescents about acne vulgaris. These results supported by some studies which reported limited knowledge about acne and explained as likely to impede seeking help **(Corey et al,2013 &Wang et al, 2015).**

These results disagreed with **Pokharel &Harish,2014** who found that 48% of the participants   had   average   level   of knowledge & 52% of them had good knowledge regarding Acne vulgaris. Also, a similar study conducted in Tricity school in Poland concluded that almost 90% of the   participants   considered   their knowledge sufficient (**Tałasiewicz et al,2012).**

In addition, another study conducted in Nigeria about prevalence, knowledge and perceptions of Acne vulgaris among secondary school student and found that over 80% of respondents had good knowledge of acne **(Onayemi et al,2005).**

Unlike the results of the study by Al Robaee about Prevalence, knowledge, beliefs and psychosocial impact of acne in university students in Saudi Arabia., releaved that 56% of students had an adequate knowledge of acne
(Al Robaee,2005).

As regard shapes of acne vulgaris, the present study showed that more than one third of studied students didn't know shape of acne, while about one quarter of them stated that appearance of whiteheads and more than one sixth of them said blackheads.

These results disagreed with **Al Mashat et al,2013** who reported that 52% of studied   participant   said   that   acne blackheads formed in the acne pores.

According to causes of acne, the current study showed that more than two fifth of studied students didn't know causes of acne, while 13.9%, 15.1%, 16.5%, 12.7% , 3.6 and 20.2% of them stated that genetic factor ,poor hygiene ,germs and bacteria ,touching face by hair and hands, hormonal and cosmetic use respectively . These results agreed with **Al Mashat et al, 2013** who reported that causes of acne as the following   bacteria (20.7%) , poor hygiene (15.4%) 28.4% did not know the cause ,while they disagreed on 88.2% of studied sample reported that hormones had an effect on acne.

Regarding to measures of prevention, the current study found that more than two fifth and less than one fifth of studied students stated that care of skin with gentle face wash & avoid use of soap and eating healthy diet respectively.

These results disagreed with **Steylaerts,2014** who reported that 55.3% of students quoted avoiding oily foods , 66% washing face frequently with soap. Also, these results disagreed with **Hao et al,2015** who reported that proper diet was the first choice checked by most adolescents (41.8%) as intended measures for acne.

As regard to students' attitude toward acne, the present study releaved that less than two third of studied students had positive attitude and slightly less than two fifth of them had negative attitude toward acne. These results supported by **Pokharel & Harish,2014** who reported that 69% of the students had favorable attitude while 31% of them had moderately favorable attitude .

As regard students' point of view about frequent face washing relieved acne faster. The results of the present study showed that unfortunately, more than two fifth of studied students felt that frequent face washing relieved acne faster. In my opinion these results may be explained by the misconception that washing face frequently will keep the skin clear and free of oil and dirt.

These results supported by **Shivaswamy et al, 2014** who carried out a study about knowledge of acne among medical students and viewed that 32% of students believed that washing face frequently would clear acne. Moreover, **Al Mashat et al, 2013** releaved that 58.4% of studied sample believed that the more they wash their face lead to better acne relieved.

In the current study slightly more than half of studied students believed that there were seasonal variations in the appearance of acne .Some investigators had found that acne exacerbates in winter, whereas the condition often improves during the summer months these may be caused by decreased inflammation from ultraviolet light induced immune suppression and/or decreasing Langerhans cell reactivity **(Webster , 2010)**.

The findings of the present study were completely in line with **Ali et al, 2010** who reported that almost 50% of the students believed hot/sunny weather to be the main culprit.

Concerning students' point of view about role of stress and genetic factors in acne, the results of present study showed that less than one third of studied students were agreed on stress play role in acne development. Also, the study releaved that less than two fifth of them agreed on genetic factors play role in acne appearance. These results may be explained by students in teen's age exposed to frequent stress in their life and they had family history of acne. **Shivaswamy et al,2014** agreed with these results and reported that 30% of students believed genetic factors play role on acne.

These results contradicted with **Ali et al,2010** who reported that most students believed stress consider a major factors in acne. However, their study showed that

21.7% of students believed that hereditary factors are responsible for acne.

These results indifferent with **Ali et al, 2010** who reported that almost all the students believed diet to be an etiological factor in acne. This shows that misconceptions and misinformation is still highly prevalent among the student population.

As regard students agreement on poor hygiene cause acne, the results of present study showed that less than three fifth of studied students believed that poor hygiene cause acne . **Ur Rehman & Niazi , 2007** reported that 87% of students agreed with poor hygiene cause acne. While, these results indifferent with **Uslu et al, 2008** who reported that poor skin hygiene was the second most common factor believed by adolescents as the cause of acne and again less frequently (25–29%).

Conclusion: The majority of the studied students had poor knowledge about acne and more than three fifth of them had positive attitude toward acne. There is statistically significant difference between knowledge of studied adolescent students and mothers' education and mothers' occupation

Recommendations:
1. School health nurses should be attended the educational programs about acne because they are most contact and deal with the students.
2. Posters about skin care, how to control and prevent it should be distributed in the schools. especially secondary schools.

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