

Prevalence, Awareness, and Psychological Effects of Acne Vulgaris among the University Students in Saudi Arabia

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Abstract

Introduction: This article discusses acne vulgaris, a chronic inflammatory condition affecting pilosebaceous glands. Clinically, it presents as comedones, papules, pustules, cysts, and nodules, and can potentially lead to scarring. While the health risks associated with acne are generally minimal, its impact on psychological well-being can be profound, particularly among adolescents and young adults. **Objectives:** This study aims to determine the prevalence of acne vulgaris among university students in Saudi Arabia, assess their level of awareness, and examine its psychological impact. **Materials and Methods:** A cross-sectional study was conducted from July to December 2025 using a self-administered questionnaire. The study focused on Saudi university students aged 18 years and older, who were recruited through social media platforms. The questionnaire consisted of three sections: Demographic information, knowledge and awareness of acne, and the psychological impact of the condition. The psychological impact was assessed using the Cardiff acne disability index (CADI) and the Dermatology Life Quality Index (DLQI). The sample size was calculated to include 384 participants to ensure adequate representation and robust statistical power. **Results:** A total of 393 participants were included (mean age 29.56 ± 12.08 years), of whom 57.8% were female. Overall, 89.1% reported a history of acne. Acne onset most commonly occurred between 13 and 16 years (55.4%), with moderate severity reported by 49.7% of affected participants. More than half of the participants had poor knowledge/awareness (54.5%), 35.9% were moderate, and 9.7% achieved a good level. For CADI, 59.4% had minimal disability, 31.7% had moderate impact, and 8.9% were classified as severe impact. For DLQI, 41.1% had no effect, 34.6% had a small effect, 22.0% had a moderate effect, and 2.3% had a significant effect on quality of life. Acne severity was significantly associated with higher CADI and DLQI scores ($P < 0.001$). **Conclusion:** Acne vulgaris is highly prevalent among Saudi university students and is associated with substantial knowledge gaps and measurable psychosocial burden. These findings highlight the need for targeted educational initiatives and early, evidence-based dermatological care to reduce disease-related psychological impact.

Key words: Acne vulgaris, Awareness, Pilosebaceous glands, Prevalence, Psychological effects

INTRODUCTION

Acne is a chronic inflammatory condition of the pilosebaceous glands that causes comedones, papules, pustules, cysts, nodules, and, on occasion, scarring. It consists of immunological and inflammatory reactions, follicular colonization by *Propionibacterium* acnes, sebum hypersecretion brought on by

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androgen stimulation, and follicular hyperkeratinization. It impacts the upper back, anterior chest, and face.^[1] Since acne is not linked to impaired general health, increased morbidity, or death, it is commonly written off as a cosmetic anomaly.^[2] Complications, including pigmentations and scarring, can result from improper treatment, which could have a detrimental effect on the patient's psychological and social wellness.^[3]

Approximately 9.4% of people worldwide suffer from acne vulgaris, making it one of the most prevalent dermatological conditions. Adolescents are the most affected demographic. Both adolescents and adults from various ethnic backgrounds and nationalities can have distinct types of acne.^[4] The etiology of increased late-adolescent acne remains uncertain; possible contributing factors include genetic drift, an earlier onset of puberty, a higher prevalence of the Western diet, or stress, depression, and permanent scarring that can have psychological effects like low self-esteem, social anxiety, and self-consciousness.^[5] People with acne frequently lack sufficient awareness about their conditions and seek information from a variety of sites, where they commonly come across myths and misconceptions. Before seeking medical assistance, the majority of patients wait for up to a year.^[6] Due to its multifactorial etiology and numerous misunderstandings, acne patients' understanding, beliefs, and conduct regarding their skin disease are essential to establishing educational programs about it and raising awareness of the availability of effective treatments.^[7]

Acne vulgaris is one of the most common dermatological conditions worldwide, especially among adolescents and young adults. It affects around 85% of people aged 12–24 years.^[8] In Saudi Arabia, local studies show high prevalence rates among university students, reaching up to 78.5% in some populations.^[9] Factors such as stress, diet, and hormonal changes may contribute to its increased occurrence in this age group. Despite its high prevalence, many students do not seek medical care, which may reflect a lack of awareness and understanding of proper treatment methods.^[10]

Recent epidemiological studies in Saudi Arabia have revealed notably high prevalence rates of acne among university students. For instance, research in Riyadh (2019) found that approximately 64.5% of young adults aged 15–30 reported acne, and 55% of medical students reported current acne symptoms.^[11] A separate study in the Jazan region (2024) reported a prevalence of 66.8% among adolescents and young adults, with significant associations to female gender, oily skin, and psychological symptoms such as shyness and scarring.^[12]

A 2017 study explored acne prevalence, lifestyle associations, and awareness among medical students in Saudi Arabia. It revealed that 55.5% of students experienced acne, with limited professional consultation and a high reliance on non-medical

sources of information. The findings also emphasized persistent misconceptions about triggers such as diet and stress, with academic progression positively influencing knowledge levels.^[13] A 2020 study on university students investigated the prevalence, awareness, and psychological impact of acne vulgaris. It confirmed a high acne prevalence and identified significant emotional distress associated with the condition, including feelings of embarrassment and lowered self-confidence. The study highlighted the urgent need for enhanced educational programs and psychological support for affected students.^[14] Complementing these findings, a 2020 study conducted in India assessed knowledge, perceptions, and psychosocial impact of acne among adolescents and young adults. The results indicated that acne significantly affected self-esteem and emotional well-being, emphasizing the universal psychological burden of acne across diverse populations.^[15]

Existing studies tend to focus primarily on clinical treatments or general prevalence, often overlooking the condition's effects on students' mental well-being and quality of life (QoL). Furthermore, cultural and social contexts in Saudi Arabia may influence how individuals perceive and respond to acne, underscoring the need for context-specific data. This study aims to address these gaps by investigating the prevalence, awareness, and psychological effects of acne vulgaris among university students in Saudi Arabia.

Objectives

This study aims to determine the prevalence of acne vulgaris among university students in Saudi Arabia, assess their level of awareness, and examine its psychological impact.

MATERIALS AND METHODS

Study design and setting

A cross-sectional study was conducted from July to December 2025 using a standardized questionnaire to assess the prevalence, awareness, and psychological impact of acne vulgaris among university students in Saudi Arabia.

Participants, recruitment, and sampling procedure

The study included university students in Saudi Arabia who were 18 years of age or older. Participants were selected using a convenience sampling approach and recruited through widely used social media platforms, including Telegram, WhatsApp, and Twitter. A digital flyer containing study information and a link to the survey was distributed. Participation was voluntary, and electronic informed consent was obtained before beginning the survey.

Sample size

To ensure representativeness of the study population, the sample size was calculated using the Raosoft sample size calculator, based on an estimated proportion (P) of 0.50, a margin of error (d) of 5%, and a confidence interval of 95%. The minimum required sample size was determined to be 384 participants.

The sample size was computed using the formula:

$$n = \frac{Z^2 \times P \times (1 - P)}{d^2}$$

where n represents the calculated sample size, z is the z -score corresponding to the 95% confidence level (1.96), P is the estimated proportion of the attribute under study (0.50), and d is the maximum allowable margin of error (0.05). Substituting the values:

$$n = \frac{(0.50)}{(0.05)^2} = 384$$

This ensured sufficient statistical power to generalize the findings to the broader population.

Inclusion and exclusion criteria

The study included male and female university students in Saudi Arabia who were 18 years or older, currently enrolled in undergraduate programs, Saudi nationals, and willing to provide informed consent. Individuals under 18 years, not enrolled in a university, non-Saudi citizens, or those with psychiatric conditions unrelated to acne that could influence their psychological responses were excluded.

Data collection and instrument

Data were collected using a structured, self-administered questionnaire with three main sections. The first section collected demographic information, including age, gender, marital status, education level, and acne history (age of onset, affected areas, and severity). The second section assessed knowledge and awareness of acne, covering common misconceptions, contributing factors, and sources of information such as media, the internet, and healthcare providers. The third section measured the psychological and quality-of-life impact using two validated tools: the Cardiff acne disability index (CADI), which contained five items assessing emotional and social effects of acne, and the dermatology life quality index (DLQI), which evaluated how acne affected daily routines, social life, and treatment burden. The instruments were adapted from previously published sources, including Finlay and Khan.^[16]

Scoring system

- **Knowledge and awareness:** Knowledge was assessed using 10 yes/no questions, with 1 point awarded for each correct answer (maximum score = 10). Based on Bloom's taxonomy cutoffs, participants were categorized as having good (8–10 points), moderate (6–7 points), or poor (≤ 5 points) knowledge.
- **Psychological impact:** The CADI produced total scores ranging from 0–15, interpreted as minimal impact (0–3 points), moderate impact (4–6 points), or severe impact (7–15 points). The DLQI produced scores from 0–18, categorized as no effect (0–1 points), small effect (2–5 points), moderate effect (6–10 points), or significant effect (11–18 points) on QoL.

Pilot test

A pilot test was conducted with 20 university students from different faculties to assess the clarity, simplicity, and practicality of the questionnaire. Participants completed the survey and provided feedback on wording, format, and overall comprehension. Minor modifications were made based on the feedback to improve the instrument. Data collected during the pilot phase were not included in the final analysis.

Data entry and analysis

Data were initially entered into Microsoft Office Excel 2024 for Windows and subsequently imported into IBM Statistical Package for the Social Sciences Statistics for Windows, Version 25.0 (Armonk, NY: IBM Corp.) for statistical analysis. Descriptive statistics were used to summarize the data, and the Chi-square test was applied to examine relationships between categorical variables.

RESULTS

Table 1 summarizes sociodemographic characteristics and acne-related history. A total of 393 university students aged ≥ 18 years or older were included after excluding 11 respondents younger than 18 years. Age ranged from 18 to 63 years (29.56 ± 12.08), and females represented 227 (57.8%). Overall, 350 (89.1%) reported acne ever/currently. Knowledge scores ranged from 0 to 10 (5.21 ± 1.72). Among participants with acne ($n = 350$), CADI and DLQI means were 3.11 ± 2.37 (0–10) and 3.11 ± 3.40 (0–18), respectively. After applying the age-based exclusion criterion, no missing values were observed; therefore, no mode-imputation was required. Most respondents were aged 18–30 years (67.9%), and 66.2% were single. The majority lived in the Western (54.5%) or Central (40.2%) regions. Among those with acne ($n = 350$), onset most often occurred at 13–16 years (55.4%). Moderate acne severity

Table 1: Sociodemographic characteristics of participants (*n*=393)

Parameter	No.	Percentage
Age group		
18–30 years	267	67.9
31–45 years	62	15.8
46–63 years	64	16.3
Gender		
Female	227	57.8
Male	166	42.2
Marital status		
Single	260	66.2
Married	126	32.1
Divorced	4	1.0
Widowed	3	0.8
Education level		
Bachelor's degree	226	57.5
High school	110	28.0
Diploma	48	12.2
Middle school	3	0.8
Postgraduate studies	6	1.5
Residence		
Western region	214	54.5
Center region	158	40.2
Eastern region	14	3.6
Southern region	6	1.5
Northern region	1	0.3
Acne history (ever/current)		
Yes	350	89.1
No	43	10.9
Age of onset (among acne) (<i>n</i> =350)		
<13 years	31	8.9
13–14 years	94	26.9
15–16 years	100	28.6
17–18 years	79	22.6
>18 years	46	13.1
Acne location(s) (among acne; select all) (<i>n</i> =350)		
Face	326	93.1
Chest	82	23.4
Back	140	40.0
Shoulders	94	26.9
Other areas	49	14.0
Acne severity (among acne) (<i>n</i> =350)		
Mild	149	42.6
Moderate	174	49.7
Severe	27	7.7
Acne scarring (among acne) (<i>n</i> =350)		
Yes	162	46.3
No	188	53.7

was most common (49.7%), and scarring was reported by 46.3%. Facial involvement predominated (93.1%), followed by back (40.0%), shoulders (26.9%), and chest (23.4%) (select-all-that-apply).

Figure 1 visually summarizes the proportion of participants who reported acne ever/currently.

Table 2 summarizes knowledge/awareness responses and sources of information. Misconceptions were frequent: 85.0% believed chocolate worsens acne, and 81.4% attributed acne to poor hygiene. Additionally, 65.1% thought acne could be cured with only one or a few doctor visits, and 68.4% believed frequent face washing helps. In contrast, most recognized stress as an aggravating factor (91.1%). The internet was the leading information source (78.4%), followed by doctors (53.7%) and friends (51.1%) (select-all-that-apply).

Table 3 (CADI items, *n* = 350) indicates a measurable psychosocial burden. Most of the participants reported at least some negative feelings (76.9% a little/a lot), and 50.0% worried about their appearance over the previous month. Social interference was reported by 58.3%, while impacts on school/work were less common but still present (28.6% at least “a little”).

Table 4 (DLQI items, *n* = 350) shows that symptoms and feelings were the most affected domain (53.4% at least “a little”). Across other domains, around one-third reported some effect on daily activities, leisure, work/school, and personal relationships (=31–34%). Treatment burden was notable: 49.4% reported at least some impact from treatment, including 13.7% reporting “a lot” or “very much.”

Table 5 classifies participants by the study's scoring systems. More than half of the participants had poor knowledge/awareness (54.5%), 35.9% were moderate, and 9.7% achieved a good level. For CADI, 59.4% had minimal disability, 31.7% had moderate impact, and 8.9% were classified as severe impact. For DLQI, 41.1% had no effect, 34.6% had a small effect, 22.0% had a moderate effect, and 2.3% had a significant effect on QoL.

Figure 2 depicts the distribution of knowledge and awareness levels across the sample.

Table 6 presents Chi-square tests for associations with knowledge level. Knowledge level differed significantly by age group, gender, and marital status (all $P < 0.001$). Good knowledge was concentrated among younger participants (18–30 years) and females, whereas poor knowledge predominated in older age groups and males. Knowledge also differed by acne history ($P = 0.019$) and was higher in those reporting moderate-to-severe acne and scarring ($P < 0.001$ and $P = 0.007$, respectively). Education level and residence were not significantly associated with knowledge level ($P > 0.05$).

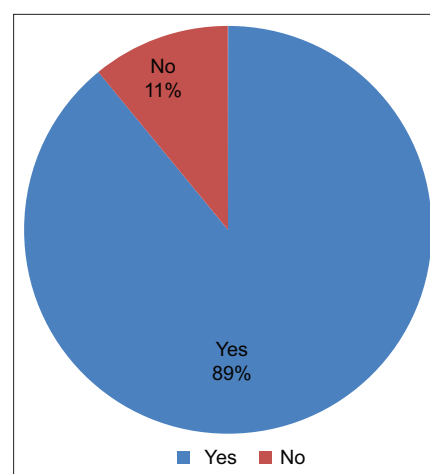
Table 2: Frequency distribution of knowledge and awareness questions ($n=393$)

Parameter	No.	Percentage
1. Acne is only temporary during puberty		
Yes	174	44.3
No	219	55.7
2. Untreated acne lasts only 1-3 years		
Yes	149	37.9
No	244	62.1
3. Acne can be cured with just one or a few doctor visits		
Yes	256	65.1
No	137	34.9
4. Poor hygiene worsens acne		
Yes	320	81.4
No	73	18.6
5. Eating chocolate worsens acne		
Yes	334	85.0
No	59	15.0
6. Stress aggravates acne		
Yes	358	91.1
No	35	8.9
7. Touching the face increases acne breakouts		
Yes	324	82.4
No	69	17.6
8. Drinking soft drinks worsens acne		
Yes	251	63.9
No	142	36.1
9. Frequent face washing helps improve Acne		
Yes	269	68.4
No	124	31.6
10. Sunlight exposure may improve acne		
Yes	136	34.6
No	257	65.4
11. Sources of information about acne (select all that apply)		
Television/radio	68	17.3
Friends	201	51.1
Internet	308	78.4
Doctor	211	53.7
Magazines	39	9.9
School	59	15.0

Table 7 shows Chi-square associations with CADI impact level. CADI impact was significantly associated with residence ($P = 0.022$) and acne severity ($P < 0.001$). Severe

Table 3: Frequency distribution of Cardiff acne disability index questions ($n=350$)

Parameter	No.	Percentage
1. Feeling aggressive, frustrated, or embarrassed because of your acne?		
Not at all	81	23.1
A little	196	56.0
A lot	73	20.9
2. Feeling that acne interferes with your social life?		
Not at all	146	41.7
A little	176	50.3
A lot	28	8.0
3. Feeling that acne affects your school or work?		
Not at all	250	71.4
A little	80	22.9
A lot	20	5.7
4. Feeling that acne influences your relationships?		
Not at all	211	60.3
A little	108	30.9
A lot	31	8.9
5. Feeling worried about your acne over the last month?		
Not at all	175	50.0
A little	127	36.3
A lot	48	13.7

**Figure 1:** Acne history prevalence

CADI impact increased with acne severity (25.9% in severe acne versus 2.7% in mild acne). Other variables were not statistically significant ($P > 0.05$).

Table 8 presents Chi-square associations with DLQI categories. DLQI effect differed significantly by age group ($P = 0.014$), residence ($P < 0.001$), and acne severity

Table 4: Frequency distribution of dermatology life quality index questions ($n=350$)

Parameter	No.	Percentage
1. Symptoms and feelings?		
Not at all	163	46.6
A little	139	39.7
A lot	35	10.0
Very much	13	3.7
2. Daily activities?		
Not at all	243	69.4
A little	87	24.9
A lot	13	3.7
Very much	7	2.0
3. Leisure activities?		
Not at all	242	69.1
A little	85	24.3
A lot	14	4.0
Very much	9	2.6
4. Work or school?		
Not at all	237	67.7
A little	76	21.7
A lot	20	5.7
Very much	17	4.9
5. Personal relationships?		
Not at all	232	66.3
A little	86	24.6
A lot	23	6.6
Very much	9	2.6
6. Treatment?		
Not at all	177	50.6
A little	125	35.7
A lot	27	7.7
Very much	21	6.0

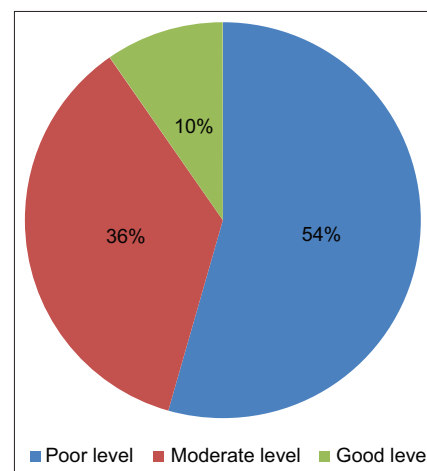
($P < 0.001$). Severe acne was linked to greater quality-of-life impairment, including a significant DLQI effect in 14.8% of severe acne compared with <2% in mild-to-moderate acne. Other factors were not significant at the 5% level, including gender ($P = 0.061$) and scarring ($P = 0.311$).

DISCUSSION

This study was conducted to estimate the prevalence of acne among university students in Saudi Arabia and to determine student's knowledge and awareness about acne, with the psychosocial and health-related associated with acne using CADI and DLQI. In the current sample ($n = 393$), 89.1% reported acne ever/currently, and this onset has been most

Table 5: Participants' distribution according to scoring system categories

Parameter	No.	Percentage
1. Knowledge and awareness level		
Poor level	214	54.5
Moderate level	141	35.9
Good level	38	9.7
Total	393	100.0
2. Cardiff acne disability index		
Minimal impact	208	59.4
Moderate impact	111	31.7
Severe impact	31	8.9
Total	350	100.0
3. Dermatology life quality index		
No effect	144	41.1
Small effect	121	34.6
Moderate effect	77	22.0
Significant effect	8	2.3
Total	350	100.0

**Figure 2:** Knowledge and awareness level distribution

common at 13–16 years. More than half of them showed poor knowledge/awareness (54.5%; mean score 5.21/10), and the mean CADI and DLQI scores were in the mild range (both means 3.11), although many students experienced negative feelings and treatment burden.

The very high self-reported prevalence rate in this university-based sample is broadly consistent with the notion that acne is almost universal during adolescence and remains common to young adulthood.^[17,18] Population-based reviews state that acne is one of the most common skin diseases worldwide, with a peak in teenagers and young adults, and a significant part of the population carrying the disease into adulthood.^[17,18] Notably, our prevalence estimate is likely due both to the age-upweighted structure of the participants (two-thirds were

Table 6: Chi-square test between sociodemographic variables and knowledge level ($n=393$)

Parameters	Knowledge level			Total ($n=393$) n (%)	P -value*
	Good level n (%)	Moderate level n (%)	Poor level n (%)		
Age group					
18–30 years	36 (94.7)	125 (88.7)	106 (49.5)	267 (67.9)	0.0001
31–45 years	0 (0.0)	7 (5.0)	55 (25.7)	62 (15.8)	
46–63 years	2 (5.3)	9 (6.4)	53 (24.8)	64 (16.3)	
Gender					
Female	33 (86.8)	100 (70.9)	94 (43.9)	227 (57.8)	0.0001
Male	5 (13.2)	41 (29.1)	120 (56.1)	166 (42.2)	
Marital status					
Divorced	0 (0.0)	2 (1.4)	2 (0.9)	4 (1.0)	0.0001
Married	4 (10.5)	17 (12.1)	105 (49.1)	126 (32.1)	
Single	34 (89.5)	121 (85.8)	105 (49.1)	260 (66.2)	
Widowed	0 (0.0)	1 (0.7)	2 (0.9)	3 (0.8)	
Education level					
Bachelor's degree	24 (63.2)	91 (64.5)	111 (51.9)	226 (57.5)	0.231
Diploma	2 (5.3)	14 (9.9)	32 (15.0)	48 (12.2)	
High school	12 (31.6)	34 (24.1)	64 (29.9)	110 (28.0)	
Middle school	0 (0.0)	0 (0.0)	3 (1.4)	3 (0.8)	
Postgraduate studies	0 (0.0)	2 (1.4)	4 (1.9)	6 (1.5)	
Residence					
Center region	21 (55.3)	61 (43.3)	76 (35.5)	158 (40.2)	0.117
Eastern region	2 (5.3)	6 (4.3)	6 (2.8)	14 (3.6)	
Northern region	0 (0.0)	1 (0.7)	0 (0.0)	1 (0.3)	
Southern region	0 (0.0)	4 (2.8)	2 (0.9)	6 (1.5)	
Western region	15 (39.5)	69 (48.9)	130 (60.7)	214 (54.5)	
Acne history					
No	3 (7.9)	8 (5.7)	32 (15.0)	43 (10.9)	0.019
Yes	35 (92.1)	133 (94.3)	182 (85.0)	350 (89.1)	
Age of onset					
13–14 years	10 (26.3)	39 (27.7)	45 (21.0)	94 (23.9)	0.071
15–16 years	13 (34.2)	37 (26.2)	50 (23.4)	100 (25.4)	
17–18 years	4 (10.5)	30 (21.3)	45 (21.0)	79 (20.1)	
<13 years	6 (15.8)	9 (6.4)	16 (7.5)	31 (7.9)	
>18 years	2 (5.3)	18 (12.8)	26 (12.1)	46 (11.7)	
N/A	3 (7.9)	8 (5.7)	32 (15.0)	43 (10.9)	
Acne severity					
Mild	6 (15.8)	42 (29.8)	101 (47.2)	149 (37.9)	0.0001
Moderate	24 (63.2)	74 (52.5)	76 (35.5)	174 (44.3)	
N/A	3 (7.9)	8 (5.7)	32 (15.0)	43 (10.9)	
Severe	5 (13.2)	17 (12.1)	5 (2.3)	27 (6.9)	
Acne scarring					
N/A	3 (7.9)	8 (5.7)	32 (15.0)	43 (10.9)	0.007
No	15 (39.5)	64 (45.4)	109 (50.9)	188 (47.8)	
Yes	20 (52.6)	69 (48.9)	73 (34.1)	162 (41.2)	

*Chi-square test; $P \leq 0.05$ indicates statistical significance

Table 7: Chi-square test between sociodemographic variables and CADI level (*n*=350)

Parameters	CADI level			Total (<i>n</i> =350)	<i>P</i> -value*
	Minimal impact <i>n</i> (%)	Moderate impact <i>n</i> (%)	Severe impact <i>n</i> (%)		
Age group					
18–30 years	144 (69.2)	86 (77.5)	23 (74.2)	253 (72.3)	0.190
31–45 years	25 (12.0)	10 (9.0)	6 (19.4)	41 (11.7)	
46–63 years	39 (18.8)	15 (13.5)	2 (6.5)	56 (16.0)	
Gender					
Female	120 (57.7)	67 (60.4)	22 (71.0)	209 (59.7)	0.367
Male	88 (42.3)	44 (39.6)	9 (29.0)	141 (40.3)	
Marital status					
Divorced	2 (1.0)	2 (1.8)	0 (0.0)	4 (1.1)	0.630
Married	62 (29.8)	29 (26.1)	5 (16.1)	96 (27.4)	
Single	143 (68.8)	80 (72.1)	26 (83.9)	249 (71.1)	
Widowed	1 (0.5)	0 (0.0)	0 (0.0)	1 (0.3)	
Education level					
Bachelor's degree	132 (63.5)	60 (54.1)	17 (54.8)	209 (59.7)	0.075
Diploma	27 (13.0)	10 (9.0)	1 (3.2)	38 (10.9)	
High school	44 (21.2)	38 (34.2)	12 (38.7)	94 (26.9)	
Middle school	3 (1.4)	0 (0.0)	0 (0.0)	3 (0.9)	
Postgraduate studies	2 (1.0)	3 (2.7)	1 (3.2)	6 (1.7)	
Residence					
Center region	80 (38.5)	51 (45.9)	8 (25.8)	139 (39.7)	0.022
Eastern region	9 (4.3)	2 (1.8)	3 (9.7)	14 (4.0)	
Northern region	0 (0.0)	0 (0.0)	1 (3.2)	1 (0.3)	
Southern region	3 (1.4)	2 (1.8)	1 (3.2)	6 (1.7)	
Western region	116 (55.8)	56 (50.5)	18 (58.1)	190 (54.3)	
Age of onset					
13–14 years	54 (26.0)	28 (25.2)	12 (38.7)	94 (26.9)	0.258
15–16 years	66 (31.7)	25 (22.5)	9 (29.0)	100 (28.6)	
17–18 years	47 (22.6)	26 (23.4)	6 (19.4)	79 (22.6)	
<13 years	14 (6.7)	14 (12.6)	3 (9.7)	31 (8.9)	
>18 years	27 (13.0)	18 (16.2)	1 (3.2)	46 (13.1)	
Acne severity					
Mild	99 (47.6)	46 (41.4)	4 (12.9)	149 (42.6)	0.000
Moderate	100 (48.1)	54 (48.6)	20 (64.5)	174 (49.7)	
Severe	9 (4.3)	11 (9.9)	7 (22.6)	27 (7.7)	
Acne scarring					
No	120 (57.7)	54 (48.6)	14 (45.2)	188 (53.7)	0.184
Yes	88 (42.3)	57 (51.4)	17 (54.8)	162 (46.3)	

*Chi-square test; $P \leq 0.05$ indicates statistical significance. CADI: Cardiff acne disability index

aged 18–30 years) and the fact that we evaluated “ever/current” acne that tends to result in higher estimates than point prevalence. Nevertheless, the finding is consistent with other studies by Saudi students and reports a high prevalence of acne

among Saudi students.^[19,20] Together, these observations work to reinforce the fact that acne is still a common issue in youth in Saudi Arabia, and that university settings are an important venue for prevention, early recognition, and appropriate care.

Table 8: Chi-square test between sociodemographic variables and DLQI level (*n*=350)

Parameters	DLQI level				Total (<i>n</i> =350) <i>n</i> (%)	<i>P</i> -value*
	No effect <i>n</i> (%)	Small effect <i>n</i> (%)	Moderate effect <i>n</i> (%)	Significant effect <i>n</i> (%)		
Age group						
18–30 years	95 (66.0)	98 (81.0)	54 (70.1)	6 (75.0)	253 (72.3)	0.014
31–45 years	16 (11.1)	9 (7.4)	14 (18.2)	2 (25.0)	41 (11.7)	
46–63 years	33 (22.9)	14 (11.6)	9 (11.7)	0 (0.0)	56 (16.0)	
Gender						
Female	74 (51.4)	79 (65.3)	50 (64.9)	6 (75.0)	209 (59.7)	0.061
Male	70 (48.6)	42 (34.7)	27 (35.1)	2 (25.0)	141 (40.3)	
Marital status						
Divorced	3 (2.1)	0 (0.0)	1 (1.3)	0 (0.0)	4 (1.1)	0.167
Married	48 (33.3)	24 (19.8)	22 (28.6)	2 (25.0)	96 (27.4)	
Single	93 (64.6)	97 (80.2)	53 (68.8)	6 (75.0)	249 (71.1)	
Widowed	0 (0.0)	0 (0.0)	1 (1.3)	0 (0.0)	1 (0.3)	
Education level						
Bachelor's degree	91 (63.2)	70 (57.9)	44 (57.1)	4 (50.0)	209 (59.7)	0.131
Diploma	22 (15.3)	8 (6.6)	7 (9.1)	1 (12.5)	38 (10.9)	
High school	27 (18.8)	41 (33.9)	23 (29.9)	3 (37.5)	94 (26.9)	
Middle school	0 (0.0)	1 (0.8)	2 (2.6)	0 (0.0)	3 (0.9)	
Postgraduate studies	4 (2.8)	1 (0.8)	1 (1.3)	0 (0.0)	6 (1.7)	
Residence						
Center region	68 (47.2)	45 (37.2)	24 (31.2)	2 (25.0)	139 (39.7)	0.0001
Eastern region	3 (2.1)	6 (5.0)	4 (5.2)	1 (12.5)	14 (4.0)	
Northern region	0 (0.0)	0 (0.0)	0 (0.0)	1 (12.5)	1 (0.3)	
Southern region	4 (2.8)	0 (0.0)	2 (2.6)	0 (0.0)	6 (1.7)	
Western region	69 (47.9)	70 (57.9)	47 (61.0)	4 (50.0)	190 (54.3)	
Age of onset						
13–14 years	46 (31.9)	24 (19.8)	22 (28.6)	2 (25.0)	94 (26.9)	0.070
15–16 years	37 (25.7)	34 (28.1)	27 (35.1)	2 (25.0)	100 (28.6)	
17–18 years	34 (23.6)	33 (27.3)	11 (14.3)	1 (12.5)	79 (22.6)	
<13 years	12 (8.3)	10 (8.3)	6 (7.8)	3 (37.5)	31 (8.9)	
>18 years	15 (10.4)	20 (16.5)	11 (14.3)	0 (0.0)	46 (13.1)	
Acne severity						
Mild	74 (51.4)	47 (38.8)	27 (35.1)	1 (12.5)	149 (42.6)	0.0001
Moderate	62 (43.1)	64 (52.9)	45 (58.4)	3 (37.5)	174 (49.7)	
Severe	8 (5.6)	10 (8.3)	5 (6.5)	4 (50.0)	27 (7.7)	
Acne scarring						
No	82 (56.9)	62 (51.2)	42 (54.5)	2 (25.0)	188 (53.7)	0.311
Yes	62 (43.1)	59 (48.8)	35 (45.5)	6 (75.0)	162 (46.3)	

*Chi-square test; $P \leq 0.05$ indicates statistical significance. DLQI: Dermatology Life Quality Index

Despite the high prevalence, knowledge and awareness were suboptimal with frequent misconceptions. Most of the participants thought that chocolate aggravates acne (85.0%) and that poor hygiene contributes to acne (81.4%), while more than two-thirds of them thought that frequent face washing

is beneficial. Similar patterns of misconceptions have been reported in adolescents and young people elsewhere; for instance, a cross-sectional study of secondary school pupils found that many perceived aggravating and ameliorating factors were “myths and misconceptions” without

evidence-based justification.^[20] In Saudi Arabia, Alnafisa and colleagues also reported the overall poor knowledge and malpractice with high dependence on nonprofessional sources and considerable self-medication behaviors.^[3] In this context, the misconception that acne has a major cause linked to poor hygiene habits, is clinically relevant: Clinical guidelines reaffirm that acne is an inflammatory disorder, influenced by hormonal, genetic, and follicular factors, and treatment of acne is performed based on evidence-based treatments with topical and systemic therapies, and not so much through excessive cleansing.^[21]

Diet-related beliefs are of particular importance because they are often the driving force of self-management behavior. While historical perspectives dismissed diet as being unrelated to acne, there is now some evidence to suggest that dietary patterns (especially high glycemic load and certain dairy exposures) may affect acne in the susceptible individual, although the level of evidence differs for various dietary exposures and outcomes.^[22,23] As such, our participants' strong endorsement of chocolate as an aggravating factor may reflect a combination of emerging evidence, popular media narratives, and also generalization from broader "diet and skin" messages. Similarly, the perception that acne can be cured in one or few visits to the doctor (65.1%) could underestimate the chronic and relapsing nature of acne and the need for maintenance therapy, which is highlighted in the evidence-based care recommendations.^[21]

Information sources in our study place these knowledge gaps in further context. The most common source was the internet (78.4%), followed by doctors and friends. This pattern is similar to those from surveys in Saudi Arabia that the internet was the most common source of knowledge,^[3] and in line with the general observation that online search and social media use influence acne-related decision-making.^[24] From the point of view of public health, over-dependence on information on the Internet can reinforce misconceptions when the information is inaccurate or too commercialized. Recent dermatology literature has recognized misinformation related to acne online and the need for clinicians and professional societies to have accessible, trustworthy digital resources.^[25] Our data suggests that educational interventions should directly address common myths (hygiene, "quick cures," and oversimplified diet claims), and should be delivered in the way students actually do it.

Regarding psychosocial burden, most of the participants had minimal CADI disability (59.4%) and no or small DLQI effect (75.7% combined), however, considering item level responses, clinically meaningful distress levels were present: 76.9% reported at least some negative feelings, 50.0% were concerned about appearance and 49.4% reported the impact of treatment. These findings are in accordance with the established use of CADI and DLQI as sensitive measures of acne-related impairment in teenagers

and young adults.^[16,26] Although the mean scores were low, there was a subgroup of moderate to severe impairment (CADI severe impact 8.9%; DLQI moderate to significant effect 24.3%), indicating a heterogeneous nature of the acne burden that is not fully represented in means. Prior work has repeatedly shown that acne can be linked to emotional distress and psychiatric symptoms; a meta-analytic review found a significant link between acne and depression and anxiety.^[27]

The current study also supports the dose-response relationship between acne severity and burden. CADI and DLQI categories were significantly related to self-reported acne severity (both $P < 0.001$), and severe CADI impact was significantly elevated in severe acne sufferers. Similar severity-QoL gradients have been reported in clinical and community studies based on dermatology-specific and acne-specific instruments.^[28] In addition, nearly half of our cohort of acne participants had scarring, a finding of clinical significance since scarring may extend disease-related distress beyond active lesions and is a major cause of perceived stigma and reduced self-esteem.^[29] These observations provide an impetus to focus on early and effective treatment to minimize progression to severe disease and scarring.

A number of limitations should be taken into account. The cross-sectional nature of the design does not allow for any causal inference about determinants of knowledge or impact on QoL. Acne history, severity, and scarring were reported by the patient, which could be associated with misclassification with clinician grading. Recruitment via online survey may have created greater selection bias towards students with previous acne experience and those who may be more internet engaged students, which may have resulted in an overestimation of prevalence and internet information use. Finally, regional representation was biased toward western and central regions, which limits the generalizability on a national basis.

CONCLUSION

The study provides contemporary, student-centered evidence that acne is highly prevalent, knowledge gaps are substantial, and a meaningful minority experience moderate or severe psychosocial impact, supporting the need for targeted, evidence-based educational and clinical interventions. Future studies using clinician-verified acne grading and probability sampling could better quantify the national burden and guide targeted educational interventions.

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ETHICAL APPROVAL

The study was fully explained to all participants, and it was emphasized that participation was voluntary. Written informed consent was obtained from each participant before enrollment. All collected information was securely stored and used exclusively for research purposes.

INFORMED CONSENT

Written informed consent was obtained from all study participants.

DATA AND MATERIALS AVAILABILITY

All data generated or analyzed during this study are included in this published article.

REFERENCES

1. Zahr Allayali A, Nassir Asseri B, AlNodali NI, Nasser R, Goblan Algoblan SF. Assessment of prevalence, knowledge, attitude, and psychosocial impact of acne vulgaris among medical students in Saudi Arabia. *J Clin Exp Dermatol Res* 2017;8:404.
2. Shahzad A, Masshadi SF, Zia A, Masood M, Ashfaq N. Psychosocial impact of acne vulgaris, its prevalence and associated risk factors in university students of Rawalpindi/Islamabad. *Pak Armed Forces Med J* 2022;72:S827-32.
3. Alnafisah H, Alyahiwi L, Aloufi L, Aldawish R, Albahli NA, Alzahrani N. Assessment of the knowledge, practice, and attitude toward acne vulgaris among Saudi adolescents and adults. *Int J Med Dev Ctries* 2022;6:1382-8.
4. Khan AS, Almulhim AF, Alqattan MH, Almakhaitah NF, Alomair FI, Alkhateeb AA. Psychological impact of acne vulgaris among young females in the Eastern province, Saudi Arabia. *Cureus* 2022;14:e29378.
5. Alsadhan NA, Alhejaily YA, Alharbi AF, Baker LW, Ahmed ZF, Elemam MO, *et al.* Acne vulgaris: Prevalence and associated risk factors among adolescents in Saudi Arabia. *Int J Med Dev Ctries* 2022;6:449-53.
6. Milić S, Janković J. Prevalence and risk factors of acne among adolescents in Kosovska Mitrovica: A cross-sectional study. *ScrMedica (Banja Luka)* 2022;53:187-95.
7. Al Muawad NS, Alharbi HH, Alsadi KK, Dokhan AY, Gaafar RA. Awareness, perceptions and practices towards acne vulgaris among acne patients in Saudi Arabia. *Ann Int Med Dent Res* 2017;2:33-6.
8. Lynn D, Umari T, Dunnick CA, Dellavalle RP. The epidemiology of acne vulgaris in late adolescence. *Adolesc Health Med Ther* 2016;7:13-25.
9. Alanazi MS, Hammad SM, Mohamed AE. Prevalence and psychological impact of Acne vulgaris among female secondary school students in Arar city, Saudi Arabia, in 2018. *Electron Physician* 2018;10:7224-9.
10. Al-Natour SH. Acne vulgaris: Perceptions and beliefs of Saudi adolescent males. *J Family Community Med* 2017;24:34-43.
11. Alanazi TM, Alajroush W, Alharthi RM, Alshalhoub MZ, Alshehri MA. Prevalence of acne vulgaris, its contributing factors, and treatment satisfaction among the Saudi population in Riyadh, Saudi Arabia: A cross-sectional study. *J Dermatol Dermatol Surg* 2020;24:33-7.
12. Mashi A, Daghriri SA, Mobarki OA, Otaif F, Suwaid OA, Alharbi RH, *et al.* Prevalence and contributing factors of acne vulgaris among the general population in the Jazan Region, Saudi Arabia: A cross-sectional study. *Cureus* 2024;16:e65407.
13. Alajlan A, Al Turki YA, AlHazzani Y, Alhowaish N, AlEid N, Alhozaimi Z, *et al.* Prevalence, level of knowledge and lifestyle association with acne vulgaris among medical students. *J Dermatol Dermatol Surg* 2017;21:58-61.
14. Deyab A, Faraz A, Abdelrahim SA, Bashir AA, Almutair Y, Almutairi KA, *et al.* Prevalence, awareness and psychological impact of acne vulgaris among university students. *J Res Med Dent Sci* 2020;8:68-73.
15. Gupta A, Dhande P. Knowledge, perceptions and psychosocial impact of acne vulgaris: An Indian scenario. *J Clin Diagn Res* 2019;13:WC01-6.
16. Finlay AY, Khan GK. Dermatology Life Quality Index (DLQI)--a simple practical measure for routine clinical use. *Clin Exp Dermatol* 1994;19:210-6.
17. Tan JK, Bhate K. A global perspective on the epidemiology of acne. *Br J Dermatol* 2015;172:3-12.
18. Bhate K, Williams HC. Epidemiology of acne vulgaris. *Br J Dermatol* 2013;168:474-85.
19. Alrabiah Z, Arafah A, Rehman Mu, Babelghaith SD, Syed W, Alrashidi FK, *et al.* Prevalence and self-medication for acne among students of health-related science colleges at king Saud University in Riyadh Region Saudi Arabia. *Medicina* 2023;59:52.
20. Ražnatović Đurović M, Janković J, Đurović M, Spirić J, Janković S. Adolescents' beliefs and perceptions of acne vulgaris: A cross-sectional study in Montenegrin schoolchildren. *PLoS One* 2021;16:e0253421.
21. Zaenglein AL, Pathy AL, Schlosser BJ, Alikhan A, Baldwin HE, Berson DS, *et al.* Guidelines of care for the management of acne vulgaris. *J Am Acad Dermatol* 2016;74:945-73.e33.
22. National Institute for Health and Care Excellence. Acne Vulgaris: Evidence Reviews for Dietary Interventions (NG198). London: National Institute for Health and Care Excellence; 2021.
23. Juhl CR, Bergholdt HK, Miller IM, Jemec GB, Kanters JK. Dairy intake and acne development: A meta-analysis of observational studies. *Clin Nutr*

- 2018;37:1741-9.
24. Park TH, Kim WI, Park S, Ahn J, Cho MK, Kim S. Public interest in acne on the internet: Comparison of search information from Google Trends and Naver. *J Med Int Res* 2020;22:e19427.
 25. O'Connor C, O'Grady C, Murphy M. Spotting fake news: A qualitative review of misinformation and conspiracy theories in acne vulgaris. *Clin Exp Dermatol* 2022;47:1707-11.
 26. Motley RJ, Finlay AY. Practical use of a disability index in the routine management of acne. *Clin Exp Dermatol* 1992;17:1-3.
 27. Samuels DV, Rosenthal R, Lin R, Chaudhari S, Natsuaki MN. Acne vulgaris and risk of depression and anxiety: A meta-analytic review. *J Am Acad Dermatol* 2020;83:532-41.
 28. Lu L, Zhong H, Chen G, Li S, Dou L. Health-related quality of life and correlation with clinical severity in patients with acne: A cross-sectional study at a single centre in China. *BMJ Open* 2025;15:e091036.
 29. Dréno B, Tan J, Kang S, Rueda MJ, Torres Lozada V, Bettoli V, *et al.* How people with facial acne scars are perceived in society: An online survey. *Dermatol Ther (Heidelb)* 2016;6:207-18.

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