

# Myths, misconceptions and attitudinal trends among patients with acne

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## Abstract

**Background:** Despite acne being a common dermatological problem, there is a paucity of literature addressing the knowledge, attitude and practice about it.

**Aims/Objectives:** To find out what patients know about acne, its cause and treatment, as well as myths, misconceptions and attitude towards it.

**Methods:** A cross-sectional, descriptive questionnaire-based study on acne patients at Maharana Bhupal Hospital, RNT Medical College, Udaipur, Rajasthan, India.

**Results:** Most (84.8%) patients belonged to the age group of 16–25 years. The majority (63.9%) presented 12 months after the onset of acne. More than half had average knowledge, a positive attitude and good practices, related significantly to gender and education.

**Limitations:** A standardized questionnaire suitable for all dialects and regional languages would have yielded more uniform results.

**Conclusion:** Study revealed that acne patients still need to acquire accurate, adequate and easily accessible information to seek timely and appropriate treatment, and alleviate their psychological suffering.

**Key words:** Knowledge, attitude, practice, acne vulgaris, beliefs

## Plain Language Summary

Acne is one of the commonest skin conditions encountered in dermatology OPD's, but there is a paucity of literature addressing the knowledge, attitude and practice about it. So we conducted a study at Maharana Bhupal Hospital, RNT Medical College, Udaipur, Rajasthan, India, to find out what patients know about acne, its cause and treatment, as well as myths, misconceptions and attitude towards it. To do the same, we prepared a questionnaire/proforma with a few questions about each domain (knowledge, attitude and practice). Most (84.8%) patients belonged to the age group of 16–25 years. The majority (63.9%) presented 12 months after the onset of acne. More than half had average knowledge, a positive attitude and good practices, related significantly to gender and education. A standardized questionnaire suitable for all dialects and regional languages would have yielded more uniform results. The study revealed that acne patients still need to acquire accurate, adequate and easily accessible information to seek timely and treatment and alleviate their psychological suffering.

## Introduction

Acne vulgaris is a common skin problem that leads to impaired quality of life. Patients rarely regard it as a disease and often fall prey to unscientific treatment. Many delay seeking medical help or do not seek it at all.<sup>1</sup> A few studies

on the assessment of knowledge, beliefs and perceptions about acne are available.<sup>1,2</sup> We aimed to assess the same in our population. In addition, we assessed attitudes and practices towards acne, which were lacking in most other studies.

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**Methods**

A cross-sectional study was conducted to assess knowledge, attitude and practice (KAP) amongst 1000 acne vulgaris patients visiting Maharana Bhupal Hospital, RNT Medical College, Udaipur, Rajasthan, India, using a pre-tested questionnaire that comprised 23, 18 and 8 questions on knowledge, attitude and practices. The minimum sample size required for the study was calculated to be 890 acne patients, calculated at a 95% confidence interval and 10% relative allowable error assuming that 31% of the acne subjects have moderately favorable attitudes (as per the seed article).<sup>3</sup> Assuming a 10% non-response rate the sample size was further increased and rounded off to 1000 acne patients. The sample size calculated, considering other KAP points, was less than the above-calculated sample size. Sample size was calculated using the formula  $n = (4 \times pq) \div L^2$  where  $n$  = sample size,  $p$  = prevalence (33%),  $q = 1-p$  (67),  $L$  = allowable error (10% of 33 = 3.3).

A total of 1000 patients were selected using systematic random sampling. Institutional Ethics Committee clearance was

obtained. Written informed consent was taken. All patients filled the questionnaire by themselves or with assistance from the assessor. The data was collected, scored and entered into the tabulated form using Microsoft excel version 2010. A prior validation of the questionnaire and scoring was done by the faculty of dermatology and community medicine. Two and one point respectively were given for correct and incorrect responses for knowledge and practice assessment. The attitude was assessed using 3-point Likert's scale,<sup>4</sup> where 3 points were given for favorable, 2 for moderately favorable and 1 for unfavorable attitude. Amongst the parameters of KAP, a score of >75%, 60–75% and <60% was graded as good, average and poor knowledge respectively. Likewise, a score of >75%, 60–75% and <60% were considered as favorable, moderately favorable and unfavorable attitudes respectively. A practice score of >75% and <75% was considered good and bad respectively. The demographic data and scores were analyzed using inferential statistics with  $P < 0.05$  level of significance by Statistical Package for Social Sciences (SPSS) Inc., Chicago Illinois, USA. Descriptive statistics were analyzed using mean, range, standard deviation, Pearson Chi-Square test and Fisher's exact test.

**Table 1: Demographic characteristics of study cases (n = 1000)**

	Male		Female		Total		P-value
	No.	%	No.	%	No.	%	
<b>Age group (years)</b>							
10–15	42	7.7	36	8	78	7.8	0.000
>15–20	373	67.9	241	53.4	614	61.4	
>20–25	115	21	119	26.4	234	23.4	
>25–30	17	3.1	39	8.7	56	5.6	
>30	2	0.4	16	3.6	18	1.8	
<b>Residence</b>							
Rural	273	49.7	169	37.5	442	44.2	0.000
Urban	276	50.3	282	62.5	558	55.8	
<b>Total disease duration</b>							
<1 month	17	3.1	22	4.9	39	3.9	0.000
1–3 month	93	16.9	93	20.6	186	18.6	
>3–6 month	62	11.3	47	10.4	109	10.9	
>6–12 month	17	3.1	10	2.2	27	2.7	
>1–3 years	285	51.9	181	40.1	466	46.6	
>3–5 years	52	9.5	51	11.3	103	10.3	
>5–10 years	22	4.0	39	8.7	61	6.1	
>10 years	1	0.2	8	1.8	9	0.9	
<b>Education level</b>							
Illiterate	4	0.7	7	1.6	11	1.1	0.000
Primary school	14	2.6	18	4.0	32	3.2	
Middle school	62	11.3	50	11.1	112	11.2	
High school	264	48.1	155	34.4	419	41.9	
Graduation/ Diploma	30	5.5	13	2.9	43	4.3	
Post-graduate	139	25.3	195	43.2	334	33.4	
Professional	36	6.6	13	2.9	49	4.9	

**Results**

**Demographic characteristics [Table 1]**

Most (84.8%) patients belonged to the age group of 16–25 years and the male to female ratio was 1.22:1. Maximum (41.9%) patients had high school education, followed by post-graduation (33.4%). Urban subjects (55.8%) outnumbered rural subjects (44.2%). Most (46.6%) patients had acne of 1–3 years duration. Males predominated in the group of >3 months to 3 years’ duration while females predominated in the group of >3 years duration.

**Response to the questionnaire**

A statistically significant difference with the age was found for some questions, details of which are shown in Table 2.

**Knowledge about acne**

Most (59.5%) patients had average knowledge scores (60–75%). More females (21.3%) had good knowledge scores compared to males (16%), the difference being statistically insignificant. Higher knowledge scores were found with higher levels of education and the difference was statistically significant with a *P*-value of 0.001. Other factors affecting the knowledge with significant *P*-value were the education of the father, mother and spouse (0.001, 0.012 and 0.006 respectively) and urban background (*P*-value <0.001). No statistically significant difference was found in knowledge scores with age, occupation, marital status, income, dietary habits, total disease duration and treatment history.

**Attitude towards acne**

Favorable, moderately favorable and unfavorable attitude was recorded in 55.2%, 44.3% and 0.5% respectively. Attitude was statistically found to be dependent upon gender (*P* value <0.001), education (*P* value < 0.001) and education of father and mother (*P* value 0.036 & <0.001). Other parameters did not show any statistically significant difference.

**Practices related to acne**

More than half (53.6%) of the patients had good treatment practices and 46.4% had bad practices. Practices were statistically significantly dependent upon gender (*P* value <0.001), education (*P* value 0.001) and treatment history (*P*-value <0.001 and Fisher’s exact test value <0.001).

The KAP amongst acne patients is depicted in Figure 1. Correlation of KAP with gender and education status is depicted in Table 3.

**Discussion**

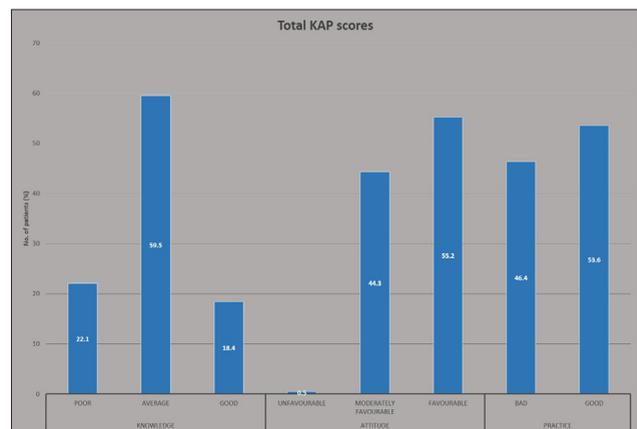
Level of awareness about acne was found to vary amongst participants. Almost half (47.6%) of the patients were not aware, whether acne is a disease compared to 22% in another study.<sup>5</sup> Most (74.1%) patients knew that acne occurs more commonly in age 10–19 years, while all the patients in a study conducted in Nepal<sup>3</sup> had this knowledge. Correct response to this question, significantly decreased with increasing age, which might be due to the fact that adult onset

acne patients may not consider it as acne. Significantly more males considered adolescence as most common age, because acne is more common and more severe in males during adolescence, while women are more frequently and severely affected by it in adulthood.<sup>6</sup> Acne is usually known to resolve with age but only 26.1% patients of our study agreed to it, as in some other studies.<sup>5,7,8</sup> Contagious nature of acne was believed by 21–70% participants in literature<sup>5,9,10</sup> and 24.5% cases of our study.

Role of diet in causation/aggravation of acne has been reported by 18–85% participants in past studies<sup>1,2,5,6,8,10–16</sup> and 53.3% cases of current study. Out of 533 participants of our study, who believed that food aggravates acne, 513 (96.3%) considered that fatty/junk foods aggravate acne, a figure relatively higher compared to other studies (18–73%).<sup>5,11,13,17,18</sup> In our study, only 27.6% (147/533) of participants related their acne with intake of milk and dairy products, compared to 78.2% in the study by Al-Shobaili.<sup>14</sup> Likewise, chocolates have been reported to cause/aggravate acne by 14–80.3% respondents in some studies.<sup>3,8,10–12,14,16,17</sup> This was stated by 44.8% (239/533) of our study subjects also.

Hormones as the causal/aggravating factor have been considered by 42–65.3% participants in most studies<sup>1,2,6,7,11–14,18</sup> and 44.7% patients of our study. In the index study, 55.2% participants thought that pollution aggravates acne, which was reported by 10.7–62.5% subjects in various studies.<sup>2,6,8,11,17</sup> Sleep deprivation as an aggravating factor of acne was reported by few subjects in two studies (0.93%<sup>7</sup> and 16.7%<sup>19</sup>), was similar to our study (15%). However, a higher number of participants (39.3%<sup>19</sup> and 40.8%<sup>16</sup>) of another two studies had this belief. Most (80.1%) of our patients believed that squeezing/scratching aggravates acne, similar to the study by Poli *et al.* (>70%).<sup>17</sup>

Stress may aggravate acne by secretion of adrenal androgens and subsequent effects on sebaceous hyperactivity.<sup>7</sup> Stress, as an aggravating factor in acne was considered by 29.5% of our study subjects, compared to 13%<sup>13</sup> and 26.2%<sup>1</sup> patients of Croatian<sup>13</sup>



**Figure 1:** Bar chart showing total KAP scores  
KAP: Knowledge, attitude and practice

**Table 2: Response of patients about acne**

Response (years)	Age groups (years)										Total		P-value
	10-15		16-20		21-25		26-30		≥31		No.	%	
	No.	%	No.	%	No.	%	No.	%	No.	%			
<b>Commonest age of acne</b>													
≤9	1	1.3	2	0.3	1	0.4	0	0	0	0	4	0.4	<0.01
>9-19	69	88.5	524	85.3	119	50.9	22	39.3	7	38.9	741	74.1	
>20	2	2.6	69	11.2	105	44.9	29	51.8	10	55.6	215	21.5	
Don't know	6	7.7	19	3.1	9	3.9	5	8.9	1	5.6	40	4	
<b>Knowledge about spontaneous resolution of acne</b>													
Yes	21	26.9	159	25.9	65	27.8	14	25.0	2	11.1	261	26.1	<0.01
No	20	25.6	128	20.9	53	22.7	21	37.5	9	50	231	23.1	
Don't know	37	47.4	327	53.3	116	49.6	21	37.5	7	38.9	508	50.8	
<b>Hormones as a cause of acne</b>													
Yes	25	32.1	270	44	116	49.6	25	44.6	11	61.1	447	44.7	0.009
No	14	18.0	50	8.1	28	12	4	7.1	3	16.7	99	9.9	
Don't know	39	50	294	47.9	90	38.5	27	48.2	4	22.2	454	45.4	
<b>Pollution as an aggravating factor of acne</b>													
Yes	35	44.9	321	52.3	147	62.8	37	66.1	12	66.7	552	55.2	0.018
No	15	19.2	78	12.7	30	12.8	5	8.9	3	16.7	131	13.1	
Don't know	28	35.9	215	35	57	24.4	14	25	3	16.7	317	31.7	
<b>Lack of sleep aggravating acne</b>													
Yes	10	12.8	74	12.1	42	18	16	28.6	8	44.4	150	15	<0.01
No	22	28.2	181	29.5	70	29.9	11	19.6	5	27.8	289	28.9	
Don't know	46	59.0	359	58.5	122	52.1	29	51.8	5	27.8	561	56.1	
<b>Aggravation of acne by squeezing /scratching</b>													
Yes	55	70.5	485	79	198	84.6	49	87.5	14	77.8	801	80.1	0.032
No	9	11.5	35	5.7	14	6.0	3	5.4	3	16.7	64	6.4	
Don't Know	14	18.0	94	15.3	22	9.4	4	7.1	1	5.6	135	13.5	
<b>Stress related aggravation of acne</b>													
Yes	14	18	162	26.4	85	36.3	29	51.8	5	27.8	295	29.5	<0.01
No	13	16.7	109	17.8	41	17.5	6	10.7	2	11.1	171	17.1	
Don't Know	51	65.4	343	55.9	108	46.2	21	37.5	11	61.1	534	53.4	
<b>Role of make-up in aggravating acne</b>													
Increase	30	38.5	256	41.7	125	53.4	34	60.7	13	72.2	458	45.8	0.015
Decrease	3	3.9	10	1.6	3	1.3	1	1.8	0	0.0	17	1.7	
Unaffected	7	9.0	68	11.1	20	8.6	2	3.6	1	5.6	98	9.8	
Don't know	38	48.7	280	45.6	86	36.8	19	33.9	4	22.2	427	42.7	
<b>Acne causing sleep disturbance</b>													
Yes	8	10.3	142	23.1	49	20.9	15	26.8	5	27.8	219	21.9	0.001
No	70	89.7	472	76.9	185	79.1	41	73.2	13	72.2	781	78.1	
<b>Desire of subjects to learn more about acne</b>													
Yes	61	78.2	538	87.6	201	85.9	50	89.3	14	77.8	864	86.4	0.001
No	17	21.8	76	12.4	33	14.1	6	10.7	4	22.2	136	13.6	
<b>Acne and its effect on social interaction</b>													
Yes	29	37.2	253	41.2	72	30.8	14	25	9	50.0	377	37.7	0.004
No	40	51.3	332	54.1	152	65	39	69.6	7	38.9	570	57	
Don't know	9	11.5	29	4.7	10	4.3	3	5.4	2	11.1	53	5.3	
<b>Acne and its impact on day to day activity</b>													
Yes	22	28.2	229	37.3	96	41	23	41.1	7	38.9	377	37.7	0.004
No	35	44.9	315	51.3	112	47.9	31	55.4	10	55.6	503	50.3	
Don't know	21	26.9	70	11.4	26	11.1	2	3.6	1	5.6	120	12	
<b>Total</b>	<b>78</b>	<b>100</b>	<b>614</b>	<b>100</b>	<b>234</b>	<b>100</b>	<b>56</b>	<b>100</b>	<b>18</b>	<b>100</b>	<b>1000</b>	<b>100</b>	

**Table 3: Correlation of KAP with education status and gender**

		Education level						Gender			
		Illiterate	Primary school	Middle school	High school	Graduate/ Diploma	Post graduate	Professional	Male	Female	Total
<b>Knowledge</b>											
Poor	No.	0	6	30	113	10	55	7	131	90	221
	%	0	18.8	26.8	27	23.3	16.5	14.3	23.9	20	22.1
Average	No.	7	22	68	246	22	202	28	330	265	595
	%	63.6	68.8	60.7	58.7	51.2	60.5	57.1	60.1	58.8	59.5
Good	No.	4	4	14	60	11	77	14	88	96	184
	%	36.4	12.5	12.5	14.3	25.6	23.1	28.6	16	21.3	18.4
<i>P</i> -value				0.001				0.064			
<b>Attitude</b>											
Unfavourable	No.	0	0	3	1	0	0	1	4	1	5
	%	0	0	2.7	0.2	0	0	2	0.7	0.2	0.5
Moderately favourable	No.	5	19	65	202	18	109	25	277	166	443
	%	45.5	59.4	58	48.2	41.9	32.6	51	50.5	36.8	44.3
Favourable	No.	6	13	44	216	25	225	23	268	284	552
	%	54.6	40.6	39.3	51.6	58.1	67.4	46.9	48.8	63.0	55.2
<i>P</i> -value				0.000				0.000			
<b>Practice</b>											
Bad	No.	7	22	68	189	21	137	20	226	238	464
	%	63.6	68.8	60.7	45.1	48.8	41.0	40.8	41.2	52.8	46.4
Good	No.	4	10	44	230	22	197	29	323	213	536
	%	36.4	31.3	39.3	54.9	51.2	59.0	59.2	58.8	47.2	53.6
<i>P</i> -value				0.001				0.000			

and Lithuanian<sup>1</sup> studies. Cosmetics as an aggravating factor was believed by 45.8% subjects in our study compared to 18.4–84.1% in previous studies.<sup>1,2,5,6,11,14,16–19</sup> Studies on improvement of acne by frequent washing of face with water have shown variable figures ranging from 43.8 to 80.7%,<sup>10,11,12,14,16,17,19</sup> Only 25.4% of our study participants believed this.

The desire to learn more about acne was expressed by 86.4% patients. In the Nepalese<sup>3</sup> and Lithuanian<sup>1</sup> studies, 52% and 95% subjects showed this interest. In our study, 57% patients responded that acne doesn't affect their social interactions compared to 31.5% and 66% in studies by Su *et al.*<sup>7</sup> and Al-Hoquail.<sup>15</sup>

Only 29.8% participants, sought initial consultation with a doctor, while others either sought other remedies or did not care at all. This shows that initial awareness of acne patients is low. Eventually most patients (95.3%) consulted a dermatologist, possibly due to increased awareness about the disease with time. Initial consultation with a doctor has been reported to range between 7 and 50% in the previous studies.<sup>1,7,9,16,17</sup> In a study by Karciauskiene *et al.*<sup>1</sup> and Su *et al.*<sup>7</sup> beauticians were consulted for treatment by 8.5% and 17.6% subjects respectively, while only 4.7% of our patients consulted beauticians for acne.

Most (59.5%) of our patients had average knowledge about acne, a figure close to 48%<sup>3</sup> and 50%<sup>14</sup> in two other studies. Education status had a favourable effect as reported in the Nepalese study also,<sup>3</sup> unlike the Zambian study,<sup>19</sup> where knowledge was unrelated to education status. A study<sup>1</sup> showed that girls had more knowledge than boys about acne and this correlated positively with age of the patients. In our study females showed a higher knowledge scores but it did not show any significance with age.

In a study,<sup>3</sup> 69% of the students had favourable attitude towards acne and 31% of them had moderately favourable attitude. These figures were 55.2% and 44.3% respectively in our study. A relatively higher proportion (53.6%) of subjects had good treatment practices. In the index study a positive, although poor correlation, was found between knowledge, attitude and practice. A significant negative correlation between knowledge and attitude, meaning that good knowledge may not lead to good attitude and vice versa, has also been reported.<sup>3</sup>

**Conclusion**

Despite acne being a very common adolescent problem, the knowledge, attitude and practices about acne are still far from satisfactory. Better knowledge about the disease can

immensely help improve the outcome of disease and quality of life.

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### Declaration of patient consent

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### Conflict of interest

There are no conflicts of interest.

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