

## Beliefs, attitudes, and treatment-seeking behavior among patients with Acne Vulgaris: A cross-sectional study from Yemen

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### ABSTRACT

**Background:** Acne Vulgaris (AV) is a common skin condition among young adults. This study assessed the knowledge, beliefs, and perceptions of AV among patients attending a private clinic in Aden city, Yemen.

**Methods:** A cross-sectional study was conducted between November and December, 2014. Patients were interviewed regarding their beliefs, knowledge, and perceptions regarding AV, and its psychological impact on them.

**Results:** Among 150 patients with AV in this study, 107 (71.3%) were females. Majority (91%) of patients consider AV as a cosmetic problem, and 65.3% consider it as a health problem. Overall, 59.3% of patients reported stress as an aggravating factor for AV with a significant gender differences (64.5% females vs. 46.5% males,  $p=0.04$ ). More than half of patients (60.7%) reported that AV affects social participation ( $p=0.02$ ). Almost 28% of male patients get their first AV medicine from a pharmacist. Both genders (82.2% females and 83.6% males) sought medical treatment for AV to look attractive. Overall, knowledge about AV among young patients in this study was moderate.

**Conclusion:** Considering psychological impacts of AV among young patients when treating them for this condition is warranted. It seems also that young adults with AV are not well informed about the aggravating factors of AV. Health education programs are required for increasing patients knowledge about AV.

KEY WORDS: Acne Vulgaris; Beliefs; Aden; Yemen

### INTRODUCTION

Acne Vulgaris (AV) is a chronic inflammatory disease of pilosebaceous glands of the skin. AV is a common distressing skin disorder affecting more than 80% of individuals at some time in their life. It is estimated that 91% of males and 79% of females are affected by AV during adolescence; a critical period in the development of self-confidence, emotional, and social participation.<sup>1-4</sup> AV can last for years and may require a long period of therapy. Poor response to treatment in some patients coupled with the high cost of AV drugs can influence many aspects of patients' life, and can be a source of distress and

affects overall patients' quality of life.<sup>5,6</sup>

AV can affect patient's emotional health, social life, interpersonal relationships, and can lead to significant psychological and physical morbidity.<sup>7-9</sup> Morbidity can be high and associated with loss of confidence, impairment of normal social and work place function. Moreover, depression, dysmorphobia (i.e. obsessive preoccupation with perceived defects in one's physical appearance), anxiety and other psychological problems associated with AV can affect patients' lives in ways comparable to life-threatening or disabling diseases.<sup>10</sup> Unlike other skin conditions, AV frequently affects the face and one of its sequelae

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is occurrence of scars and pigmentation which cause a change in appearance. These inspire morbid fascination or disgust in the onlooker, to the shame and embarrassment of the sufferer which aggravates the already existing psychological aspects of this condition.<sup>11</sup>

Several studies showed that AV negatively affects psychological health, signs of depression, anxiety disorders have been associated with acne patients, the prevalence of depression and suicidal ideation was found to be around 6%-7%.<sup>11-14</sup> This shows that AV can have serious psychiatric sequelae; therefore, emotional and psychiatric problems due to AV should be considered and included in the treatment plan.<sup>14</sup> The objectives of this study were to assess the beliefs and perceptions of patients with AV and to determine the impact of AV and its clinical severity on health related quality of life. To our knowledge, this study is the first concerning health – related quality of life of patients with AV in Aden city, Yemen.

## **PATIENTS AND METHODS**

### **Study design**

A cross – sectional study was conducted during November – December, 2014. A convenient sample of 150 patients with AV attending a private clinic in Aden city were approached and voluntarily agreed to participate. Data were gathered using interviewer-administered questionnaire that inquires about socio-demographic variables (e.g., age, marital status), knowledge and beliefs about AV (e.g., whether AV is caused by infection), and treatment-seeking behavior (e.g., who prescribed the first AV medicine to the patient). The severity of AV was assessed using Investigator's Global Assessment Scale (IGAS) and an av-

erage mean score was calculated for each patient that reflects the severity of AV. Verbal informed consents were obtained from all participants after explaining the objectives of the study and assuring the confidentiality of their information. The study protocol was approved by the Ethical Committee of Aden University, Faculty of Medicine and Health Sciences.

### **Statistical analysis**

Categorical variables were summarized using proportions and quantitative variables were summarized using means and standard deviations. Statistical analysis was performed using SPSS-20 program and the level of significance was set at  $p < 0.05$ .

## **RESULTS**

### **Sample characteristics**

The study sample included 150 patients in which 107 (71.3%) were females. There was no statistical difference ( $p=0.16$ ) in the mean age between males (19.5 years) and females (20.6 years). In both genders, the highest prevalence of AV was among those with high school degree (58.1% for males, 42.1% for females), which can reflect the peak of AV at this age group. Patients who were attending school or single had higher prevalence of AV and the majority of patients had mild to moderate AV using IGAS scores (Table 1).

### **Beliefs about AV**

Table 2 shows participants' beliefs (whether AV represents a health problem, cosmetic problem, AV caused by food or stress, and whether AV is infectious) about AV. Overall; there were no significant gender differences in the knowledge regarding AV and whether AV is infectious or caused by food. However, 64.5% of females as

**Table 1** Characteristics of a sample (N=150) of patients with Acne Vulgaris (AV) attending a private dermatology clinic in Aden, Yemen, 2014

	Male (n=43) n (%)* or mean ± SD	Female (n= 107) n (%)* or mean (SD)	p- value <sup>5</sup>
<b>Highest educational level</b>			<b>0.04</b>
Illiterate	1 (2.3)	4 (3.7)	
Read and write	0 (0)	13 (12.1)	
Primary school	6 (14.0)	21 (19.6)	
High school	25 (58.1)	45 (42.1)	
College degree	11 (25.6)	24 (22.4)	
<b>Marital status</b>			<b>0.01</b>
Single	41 (95.3)	84 (78.5)	
Married	2 (4.7)	23 (21.5)	
<b>Occupation</b>			<b>0.001</b>
Housewife	0 (0)	42 (39.3)	
Student	33 (76.7)	52 (48.6)	
Teacher	0 (0)	3 (2.8)	
Worker	6 (14.0)	6 (5.6)	
Unemployed	1 (2.3)	4 (3.7)	
Others	3 (7.0)	0 (0)	
<b>Permanent place of residence</b>			<b>0.05</b>
Aden	34 (79.1)	97 (90.7)	
Outside Aden	9 (20.9)	10 (9.3)	
<b>Assessment of AV using Investigator's Global Assessment scale</b>			<b>0.09</b>
One inflammatory lesion	1 (2.3)	16 (15.0)	
Mild	20 (46.5)	45 (42.1)	
Moderate	19 (44.2)	41 (38.3)	
Severe	3 (7.0)	5 (4.7)	
<b>Age (in years)</b>	19.5 ± 3.4	20.6 ± 4.2	<b>0.16</b>
<b>Total household income (Yemeni Riyals)</b>	152,581 ± 224,133	92,881 ± 49,844	<b>0.41</b>

\*column percentage  
<sup>5</sup>p-value was based on linear-by-linear association/chi-squared tests (categorical variables), or t-test for continuous variables  
 SD=standard deviation

compared to 46.5% of males believe that AV is caused by stress (p=0.04).

**Attitudes towards AV**

As shown in table 2, participants from both genders have similar attitudes regarding the effects of AV on scholastic and work achievements,

**Table 2** Beliefs and attitudes towards acne vulgaris

	Male (n=43) n (%)	Female (n= 107) n (%)	p-value <sup>5</sup>
<b>Beliefs</b>			
Is AV a health problem?			<b>0.24</b>
No	18 (41.9)	34 (31.8)	
Yes	25 (58.1)	73 (68.2)	
Is AV a cosmetic problem?			<b>0.19</b>
No	6 (14.0)	7 (6.5)	
Yes	37 (86.0)	100 (93.5)	
Is AV caused by food?			<b>0.48</b>
No/do not now	28 (65.1)	63 (58.9)	
Yes	15 (34.9)	44 (41.1)	
Is AV infectious?			<b>0.72</b>
No/do not now	41 (95.3)	99 (92.5)	
Yes	2 (4.7)	8 (7.5)	
Is AV caused by stress?			<b>0.04</b>
No/do not now	23 (53.5)	38 (35.5)	
Yes	20 (46.5)	69 (64.5)	
<b>Attitudes</b>			
Does AV affect patients social participation?			<b>0.02</b>
No/do not now	23 (53.3)	36 (33.6)	
Yes	20 (46.5)	71 (66.4)	
Does AV affect patients scholastic achievement?			<b>0.22</b>
No/do not now	28 (65.1)	58 (54.2)	
Yes	15 (34.9)	49 (45.8)	
Does AV affect patients work achievement?			<b>0.79</b>
No/do not now	28 (65.1)	72 (67.3)	
Yes	15 (34.9)	35 (32.7)	
Does AV affect patients self-confidence?			<b>0.36</b>
No/do not now	22 (52.1)	46 (43.0)	
Yes	21 (48.8)	61 (57.0)	
Does AV affect patients relationship with friends?			<b>0.03</b>
No/do not now	30 (69.8)	54 (50.5)	
Yes	13 (30.2)	53 (49.5)	
Does AV make patient feel anxious?			<b>0.36</b>
No/do not now	17 (39.5)	34 (31.8)	
Yes	26 (60.5)	73 (68.2)	
Does AV affect marriage willingness?			<b>0.69</b>
No/do not now	26 (60.5)	61 (57.0)	
Yes	17 (39.5)	46 (43.0)	

<sup>5</sup>p-value is based on chi-squared/Fisher's Exact tests  
 AV=acne vulgaris

self-confidence, anxiety, and marriage willingness. However, a higher proportion of females stated that AV affects patient's social participation (66.4% females vs. 46.5% males,  $p=0.02$ ) and relationship with friends (49.5% females vs. 30.2% males,  $p=0.03$ ).

### Treatment-seeking behavior

Table 3 shows participants' behaviors when seeking treatment for AV. On average, participants from both genders sought treatment twice, and almost third of participants from both genders ever used medications for AV. The majority of participants received the first AV medication from a physician, while attractiveness was cited as the most common reason for seeking treatment (Table 3).

**Table 3** Treatment-seeking behavior

	Male (n=43) n (%)* or mean $\pm$ SD	Female (n= 107) n (%)* or mean (SD)	p- value <sup>5</sup>
<b>No. of times a patient sought treatment for AV including the current visit</b>	1.8 $\pm$ 1.1	1.9 $\pm$ 1.2	<b>0.78</b>
<b>Where did the patient get the first AV medicine from (or who prescribed it)?</b>			<b>0.26</b>
Physician	29 (67.4)	85 (79.4)	
Pharmacist	12 (27.9)	16 (15.0)	
Traditional healer	1 (2.3)	1 (0.9)	
Others (family, friend)	1 (2.3)	5 (4.7)	
<b>Reason for seeking treatment</b>			<b>0.49</b>
Family advice	4 (9.3)	8 (7.5)	
Attractiveness	36 (83.6)	88 (82.2)	
Others (health, friend advice, and marriage)	3 (7.0)	11 (10.3)	
<b>Has patient ever used any medications for AV?</b>			<b>0.56</b>
No	17 (39.5)	37 (34.6)	
Yes	26 (60.5)	70 (65.4)	

<sup>5</sup>*p-value was based on linear-by-linear association/chi-squared tests (categorical variables), or t-test for continuous variables*

## DISCUSSION

In this study, a large proportion of female patients believe that AV is a health and cosmetic problem. The finding that females are more health conscious and concerned about their skin health is consistent with previous studies.<sup>15,10,5</sup> It is commonly believed that high stress exacerbates AV, the skin -especially the pilosebaceous unit- could be seen as an endocrine organ, being a target for hormones which have been shown to mediate topically and centrally induced stress toward the sebaceous glands, increasing sebum production and the potential for AV lesion formation.<sup>16</sup> In this study, stress was cited as the most common cause of AV by 64.5% of female patients compared to 46.5% of male patients similar to other studies.<sup>1,3,7,10,11,15,17,18</sup>

The role of nutrition in acne still remains controversial,<sup>8</sup> more than half (60.6%) of the respondents in this study (58.9% females and 65.1% males) believed diet is not a causative agent of AV. Approximately 40%, 34.9% males and 41.1% females thought that diet to be a causative factor, in AL – Hoqail study<sup>10</sup> 79% of patients believed that acne is related to diet, while in Rigopoulou et al<sup>19</sup> and Ikaraoha et al<sup>20</sup> studies diet was thought to exacerbate acne by 62% and 65.7% respectively by the study patients.

Face plays the vital role in building image, since acne affects the face mainly, it's severely affects self image. Acne was reported by (60.7%) of the respondents, 66.4% females and 46.5% males to be influencing social retreat compared to (39.5%) 33.6% females and 53.3% males reported that there was no affect, this result is in agreement with that reported by AL-Hoqail<sup>10</sup> and AL-Mashat,<sup>15</sup> where 65.6% and 71.7% of their sample felt an affected social relationship. The

effect of acne on school and work performance was reported by 42.6% (45.8% females and 43.9%males ), 33.3% (32.7% female and 34.9% males ) respectively and more than half of the patients answered by no or didn't know, this result agree with AL-Hoqail<sup>10</sup> in which 39% of his sample reported affected school and work performance due to AV and disagree to other studies.<sup>11,21</sup> While relationship, marriage willingness, affected friendship relations and lose of self confidence were thought to be affected by 42%, 44% and 54.7% of the study sample respectively, females were significantly more affected than that of males. This may be due to the fact that girls are more sensitive and concerned about their appearance in the community, these results were different from Darwish et al<sup>11</sup> but in agreement with Al-Hoqail<sup>10</sup> and AL-Mashat<sup>15</sup> studies.

Meanwhile, a Nigerian study summarized that only a small number of respondents reported that their AV severely affected their relationship with their ability to make friends, relationship with family, school and work,<sup>9</sup> also a study in UK indicated that AV would be a potential barrier to social relationship.<sup>22</sup>

Regarding seeking medical advice, in this study female patients consulted dermatologist as their first choice in seeking medical advice, in contrast to males who get their medical advice from pharmacist as their first choice. This can be explained as that females are more aware about their appearance than males, and the later may have no time to visit a specialist and prefer the quick advice from a pharmacist. Eighty two percent of females and 84% of males in this study sought medical advice as a self decision as reported in other studies.<sup>5,18,23</sup>

## CONCLUSIONS

AV is a common skin disease affecting both genders. Females were more affected than males. This study results showed that poor knowledge and false beliefs are prevalent among AV patients and the presence of AV can negatively affect quality of life and family and social relationship, may also be strained. In spite of that the number of patients in this study is small but it is similar to other studies and appears to reflect the poor knowledge and misconception about the disease. Despite this limitation this is the first study in Aden governorate and it can be used as a guide for further studies on this topic.

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