

## Over-the-counter and Prescription Medications for Acne: A Cross-Sectional Survey in a Sample of University Students in Saudi Arabia

### Abstract

**Introduction and Background:** Acne is a very common dermatological condition found among the adolescent population in Saudi Arabia. Many patients with acne try various forms of self-medication, over the counter medicines (OTC), and prescription medicines for the same. **Materials and Methods:** This was a cross-sectional study among university students in the Kingdom of Saudi Arabia (KSA). A validated questionnaire was distributed to a convenience sample of university students to evaluate their knowledge and attitudes towards OTC (mainly) as well as prescription medicine for acne. Chi-square and multiple logistic regression tests were used for comparisons between groups. **Results:** Four hundred and twenty valid, completed questionnaires were obtained. A total of 220 (52.4%) used some type of OTC medications at least once, where as 108 (25.7%) used prescription medicines and 92 (21.9%) used both. The most common OTC medications used were cleansers by 250 participants (41.9%). Among prescription medicines, the most common were topical and oral antibiotics (11.4%). Bivariate and multivariate analysis showed that females are statistically more likely to use OTC medicines compared to males (Odds ratio: 1.7). **Conclusion:** The use of self-medications and OTC medications is common among university students in KSA. The most common OTC medicine used for acne was cleanser.

**Keywords:** *Acne vulgaris, knowledge-attitude-behavior, OTC medications*

Mohja D. Alshehri,  
Abdulsalam T.  
Almutairi,  
Asma M. Alomran,  
Batool A. Alrashed,  
Feroze Kaliyadan

Department of Dermatology,  
College of Medicine, King  
Faisal University, Saudi Arabia

### Introduction

Acne is a common inflammatory condition affecting the pilosebaceous units of the skin of the face, neck, chest, and upper back. While managing cases of acne, dermatologists need to factor in patient compliance, patient education, economic aspects as well as availability of a wide variety of over the counter (OTC) and alternative medications for the same.<sup>[1-3]</sup>

The prevalence of acne varies from 50%<sup>[4,5]</sup> to 80% in different studies.<sup>[6,7]</sup> Unfortunately, many people with acne may suffer for years before being referred to a specialist and majority never seek the advice of a doctor for managing acne.<sup>[8]</sup> Many people who suffer from acne use both prescription and over-the-counter (OTC) acne medications. Multiple factors such as convenience, lower cost, and difficulty getting appointments with dermatologists has led to an increase in the use of OTC treatments.<sup>[9]</sup>

OTC acne therapies can be classified into the following six major groups: cleansers, leave-on products, mechanical treatments,

essential oils, vitamins, home remedies, and herbal treatments. OTCs can be effective for some patients with mild acne.<sup>[10]</sup>

Patients tend to have a lot of queries and confusions regarding acne and the internet has become an important source of information regarding these queries.<sup>[11]</sup> For dermatologists, it is crucial to understand these queries. It was felt that the first step would be to have a clear picture on the frequency of use as well as factors affecting these choices in patients suffering from acne. Our study attempted to evaluate the frequency of use of OTC/prescription medicines for acne and factors affecting these choices among a sample of university students in the Kingdom of Saudi Arabia.

### Materials and Methods

It was a cross-sectional, descriptive study of students in a University in Saudi Arabia. The total number of students in the university at the time of the study was 30789. The total number of males was 14892 and the total number of females was 15897 (Information from Deanship

#### Address for correspondence:

Dr. Feroze Kaliyadan,  
Faculty of Dermatology,  
College of Medicine, King  
Faisal University, Saudi Arabia.  
E-mail: ferozkal@hotmail.com

#### Access this article online

Website: [www.idoj.in](http://www.idoj.in)

DOI: 10.4103/2229-5178.202273

#### Quick Response Code:



**How to cite this article:** Alshehri MD, Almutairi AT, Alomran AM, Alrashed BA, Kaliyadan F. Over-the-counter and prescription medications for acne: A cross-sectional survey in a sample of university students in Saudi Arabia. *Indian Dermatol Online J* 2017;8:120-3.

**Received:** June, 2016. **Accepted:** September, 2016.

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: [reprints@medknow.com](mailto:reprints@medknow.com)

of Admission and Registration of the University for the year 2015-16), which included diploma students, bachelor students, higher diploma students, and postgraduate students. Our calculated sample size was 379 (inputs: Confidence level = 95%, confidence limit = 5, total population = 30789, precision = 20, and power = 80%). The questionnaire was randomly distributed to all the university students both electronically (through social media) and as hard copies (500 as hard copies). A total of 420 valid responses were obtained, of which 204 were electronic responses and 216 hard copies. The response rate could not be ascertained exactly as the electronic survey might have reached a much larger sample of students. The recruitment period was over 2 months. Data analysis was done using SPSS® version 21 (IBM, New York, USA) and SAS (Statistical Analysis Software, North Carolina, USA);  $P < 0.05$  was considered to be significant. The questionnaire itself had three parts. The first part was about personal information including gender, age, marital status, residential area, and academic year. The second part addressed details of skin type and acne and the third part focused on use of prescription and OTC medications as well as related satisfaction. Cronbach's alpha was used to ascertain validity. A mean Cronbach's alpha of 0.405 was obtained for the questionnaire. The voluntary nature of participation and assurance of data confidentiality was mentioned explicitly. The study was given ethical clearance from the Research Ethics Committee, College of Medicine, King Faisal University.

### Results

Mean age of the respondents was 22 years (standard deviation: 2.95), which included 180 (42.9%) males and 239 (56.9%) females. Of the total, 335 (79.8%) were single, 79 (18.8%) were married, and 6 were (1.4%) divorced. The diagnosis of acne was made by a dermatologist in 211 (50.2%) of the respondents where as 209 (49.8%) were not diagnosed by a dermatologist. Of males, 86 (47.8%) were diagnosed by a dermatologist and 94 (52.2%) were not. For females, 125 (52.2%) were diagnosed by a dermatologist and 114 (47.85%) were not. There was no significant difference between males and females regarding a formal diagnosis of acne made by a qualified doctor ( $P = 0.207$ ). Those who had acne for more than 1 year were more likely to be diagnosed by a doctor ( $P = 0.00$ ).

A total of 220 (52.4%) used some form of OTC medications at least once, where as 108 (25.7%) used prescription medications and 92 (21.9%) used both. The most common OTC medications used were cleansers in 250 respondents (59.5%) followed by home remedies, such as honey masks, lemon juice, and oatmeal in 98 respondents (23.3%), 63 (15%) used leave-on products and 47 used mechanical treatments such as scrubs (11.2%) [Table 1]. The most common reasons for choosing OTC medicines

were due to its perceived effectiveness as per 95 (30.7%) respondents and its safety according to 90 (29.1%). A majority of the participants felt that the OTC medications used were effective for their acne. Among prescription medicines, the most commonly used were topical and oral antibiotics (11.4%) [Table 2]. The most common source of information regarding acne medications was the internet according to 133 students (31.7%), followed by relatives in 126 (30%), friends in 93 (22.1), pharmacists in 82 (19.5%), and doctors and television each accounting for 46 respondents (11%).

Univariate, bivariate, and multivariate analysis were used to extrapolate the results of the sample to the whole population of university students in Saudi Arabia. Chi-square and multiple logistic regression tests were used, and it was found that females were more likely to use OTC medications compared to males [odds ratio (OR): 1.7, 95% CI: 1.01–2.74], ( $P = 0.04$ ). Unmarried and married individuals were equally likely to use OTC medications (OR: 1.07, 95% CI: 0.56–2.04) ( $P = 0.83$ ); younger students were more likely to use OTC medicines compared to older ones (OR: 1.9, 95% CI: 1.19–3.13) ( $P = 0.04$ ).

### Discussion

Acne is a common reason for dermatological consultation globally as well as in the Kingdom of Saudi Arabia.<sup>[4]</sup> Studies have shown that acne can significantly affect the body image perception. This is one of the possible reasons why many patients try various kinds of self-medications for acne. Improper use of self-medications may not only be associated with a lack of effect but may also lead to significant adverse effects.<sup>[12]</sup> Our study showed that most of the respondents did not seek timely medical attention.

**Table 1: Common types of over-the-counter acne treatments used by the sample population**

OTC	Total	Male	Female
Cleansers	250 (59.5%)	99 (39.6%)	151 (60.4%)
Leave-on products	63 (15%)	31 (49.2%)	32 (50.8%)
Mechanical treatments	47 (11.2%)	14 (29.8%)	33 (70.2%)
Essential oils	18 (4.3%)	5 (27.8%)	13 (72.2%)
Vitamins	22 (5.2%)	7 (31.8%)	15 (68.2%)
Home remedies and herbal	98 (23.3%)	23 (23.5%)	75 (76.5%)

**Table 2: Common prescription products used by the sample population**

Prescribed medicine	Frequency
Topical and oral antibiotics	48 (11.4%)
Topical adapalene	35 (8.3%)
Topical azelaic acid	8 (1.9%)
Isotretinoin (systemic)	24 (5.7%)
Anti-androgens (spironolactone)	2 (0.5%)

A majority of them used complementary and alternative therapies for their acne. A study by Magin *et al.* has also shown that patients tend to prefer complementary and alternative products for acne because of the “natural” tag. The perceived self-efficacy of these complementary/alternative medicines was found to be relatively more for acne as compared to psoriasis and eczema in this study (which included 26 patients of acne, 29 of psoriasis, and 7 of atopic dermatitis).<sup>[13]</sup>

The importance of early treatment of acne is that it can prevent scarring. Of the total respondents, 60.7% of students suffered from acne for more than 1 year before seeking medical attention, similar to a study by Tan *et al.* from Canada, in which 74% of patients had waited for more than a year before seeking medical attention for acne.<sup>[14]</sup>

In the present study, females were found to be significantly more likely to use self-medication. The study by Tan *et al.* also suggested that female patients were more likely than male patients to use self-medication products such as facials, acne camouflage or cover-up, and facial masks for treatment.<sup>[14]</sup> This may reflect preconceived notions of effectiveness, convenience, and familiarity. The study by Tan *et al.* also showed that the most frequent acne treatments used by patients before seeking medical attention were cleansers (87%), acne pads containing alcohol-based solutions (55%), acne lotions containing alcohol- (47%), acne cover-up products (27%), masks (27%), and facials of various types (22%).<sup>[14]</sup> In our study, the most common OTC medication used was cleansers (59.5%).

Most of the patients mentioned that they read about acne medications most frequently from the internet (31.7%). This is in contrast to the study by Tan *et al.*, where information on acne was obtained most frequently from family physicians (71%); other sources mentioned in this study included magazines 44%, parents 31%, and friends 28%. In community-based surveys, the most frequently cited sources of acne information were television (74%), parents (61%), friends (47%), and magazines (39%). Of the total respondents, 58.7% of students who used prescribed medication did not know about the name of the used medication. In the study by Tan *et al.* the prescription acne product most often recognized by patients was isotretinoin (58.3%).<sup>[14]</sup> It is possible that with the internet and social media becoming more pervasive, the primary source of knowledge regarding acne the world over may shift to the internet. Dermatologists need to play an important role in ensuring that reliable patient information is available and easily accessible on the internet.

In our study, a doctor did not make the diagnosis in approximately half the patients. The early diagnosis and specialist treatment of acne is important to prevent scarring as well as to reduce the psychosocial impact of acne, especially in adolescents.<sup>[15-17]</sup> Dermatologists also need to be aware of all available treatment options for acne, including OTC products which contain established anti-

acne molecules such as benzoyl peroxide,<sup>[17-19]</sup> and also need to ensure better adherence to these established medications. Studies have shown that prescription of a single product might improve compliance with acne treatment.<sup>[15,20]</sup>

One of the positive aspects of our study was that none of the respondents in the study reported having used any kind of topical steroids for their acne. The misuse of topical steroids for various conditions including acne is one of the emerging scourges in some countries like India.<sup>[21]</sup>

### Limitations

Our study did not address issues such as the specific, detailed contents, effects and possible side-effects of common OTC preparations. The sample of university students is expected to be more aware in general, and therefore, it may not be reliable to extrapolate the results to the general population.

### Conclusion

The use of self and OTC medications is common among university students in Kingdom of Saudi Arabia. The most common OTC medicine used for acne was cleansers. The most common source of information for acne medications was the internet. Female students used OTC medicines more than male students, and young students tend to use it more than the older students. More studies are warranted to evaluate the effects and side-effects of different OTC medications.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

### References

1. Kircik LH. Advances in the understanding of the pathogenesis of inflammatory acne. *J Drugs Dermatol* 2016;15:7-10.
2. Lolis MS, Bowe WP, Shalita AR. Acne and systemic disease. *Med Clin North Am* 2009;93:1161-81.
3. Bergfeld WF. The evaluation and management of acne: Economic considerations. *J Am Acad Dermatol* 1995;32:52-6.
4. Darwish MA, Al-Rubaya AA. Knowledge, beliefs, and psychosocial effect of acne Vulgaris among Saudi acne patients. *ISRN Dermatol* 2013;2013:1-6.
5. Pearl A, Arroll B, Lello J, Birchall NM. The impact of acne: A study of adolescents' attitudes, perception and knowledge. *N Z Med J* 1998;111:269-71.
6. Chu TC. Acne and other facial eruptions. *Medicine* 1997;25:3033.
7. Healy E, Simpson N. Acne vulgaris. *BMJ* 1994;308:831-3.
8. Uslu G, Şendur N, Uslu M, Şavk E, Karaman G, Eskin M. Acne: Prevalence, perceptions and effects on psychological health among adolescents in Aydin, turkey. *J Eur Acad Dermatol Venereol* 2008;22:462-9.
9. Decker A, Graber EM. Over-the-counter acne treatments: A review. *J Clin Aesthet Dermatol* 2012;5:32.
10. AAD.org [home page on the internet]. American Academy

- of Dermatology. Dermatologists advise patients that over-the-counter acne products can have benefits and a place on their medicine shelf.[updated 2014, February 3]. Available from: <https://www.aad.org/media/news-releases/dermatologists-advise-patients-that-over-the-counter-acne-products-can-have-benefits-and-a-place-on-their-medicine-shelf>. [Last accessed on 2016 March 30].
11. Bowe WP, Shalita AR. Effective over-the-counter acne treatments. *Semin Cutan Med Surg* 2008;27:170-6.
  12. FDA.gov [Home page on the internet]. US department of health and human services.Topical acne products can cause dangerous side effects. [updated 2015 February 2] Available from: <http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm402441.htm>. [Last accessed on 2016 April 9].
  13. Magin PJ, Adams J, Heading GS, Pond DC, Smith W. Complementary and alternative medicine therapies in acne, psoriasis, and Atopic Eczema: Results of a qualitative study of patients' experiences and perceptions. *J Altern Complement Med* 2006;12:451-7.
  14. Tan JK, Vasey K, Fung KY. Beliefs and perceptions of patients with acne. *J Am AcadDermatol* 2001;44:439-45.
  15. Baldwin HE. Tricks for improving compliance with acne therapy. *Dermatol Ther* 2006;19:224-36.
  16. Amr M, Kaliyadan F, Shams T. Use of a Cutaneous Body Image (CBI) scale to evaluate self perception of body image in acne vulgaris. *Acta Dermatovenerol Croat* 2014;22:196-9.
  17. Zaenglein AL. Making the case for early treatment of acne. *Clin Pediatr* 2010;49:54-9.
  18. Kircik LH, Gwazdauskas J,Butners V, Eastern J,Green LJ. Evaluation of the efficacy, tolerability, and safety of an over-the-counter acne regimen containing benzoyl peroxide and salicylic acid in subjects with acne. *J Drugs Dermatol* 2013;12:259-64.
  19. Draelos ZD. Assessing the Value of Botanical Anti-Inflammatory Agents in an OTC Acne Treatment Regimen. *J Drugs Dermatol* 2015; 14:1418-21.
  20. Anderson KL, Dothard EH, Huang KE, Feldman SR. Frequency of Primary Nonadherence to Acne Treatment.*JAMADermatol* 2015;151:623-6.
  21. Sinha A, Kar S, Yadav N, Make B.Prevalence of Topical Steroid Misuse Among Rural Masses. *Indian J Dermatol* 2016;61:119.