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ORIGINAL

Trend and prevalence of skin disorders among Saudi population in different regions of Saudi Arabia

Tendencia y prevalencia de los trastornos de la piel entre la población saudí en diferentes regiones de Arabia Saudí

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Abstract

Objective: The present study aims at understanding and examining the trends of skin problems among Saudi residents in a cross-sectional qualitative study.
Methodology: The study was a cross-sectional study carried out among the adult population in Saudi Arabia from all five regions of Saudi Arabia. Data were collected through closed-ended questionnaires recruited through online means and respondents only participating in the study out of their own will. The main data collection tool was a closed-ended questionnaire that captured sociodemographic factors and the disorders experienced by the study respondents. Analysis was carried out using SPSS version 22.
Results: A sample of 1349 respondents was drawn where 751 of the respondents were aged between 18 and 35, which represented the majority of the respondents (55.7%). 77% of the respondents were females, while the rest were males. The proportion of respondents with acne significantly varied across gender p<.001, which was also the case with eczema. 17.6% of the respondents had some kind of skin problem where the acne was the most prevalent skin problem 32.4%.
Conclusion: While skin disease may have been found to significantly differ between men and women in previous studies, in the present study, only acne and eczema significantly differed. The most suffered skin problem across Saudi Arabia is acne.

Keywords: Acne, skin diseases, dermatology.

Resumen

Objetivo: El presente estudio tiene como objetivo comprender y examinar las tendencias de los problemas cutáneos entre los residentes saudíes en un estudio cualitativo transversal.
Metodología: Se trata de un estudio transversal realizado entre la población adulta de Arabia Saudí de las cinco regiones del país. Los datos se recogieron mediante cuestionarios cerrados reclutados por medios online y los encuestados sólo participaron en el estudio por su propia voluntad. La principal herramienta de recogida de datos fue un cuestionario cerrado que recogía los factores sociodemográficos y los trastornos experimentados por los encuestados del estudio. El análisis se realizó con el SPSS versión 22.
Resultados: Se extrajo una muestra de 1.349 encuestados, de los cuales 751 tenían entre 18 y 35 años, lo que representaba la mayoría de los encuestados (55,7%). El 77% de los encuestados eran mujeres, mientras que el resto eran hombres. La proporción de encuestados con acné varió significativamente según el género p<.001, lo que también ocurrió con el eczema. El 17,6% de los encuestados tenía algún tipo de problema cutáneo, siendo el acné el problema cutáneo más frecuente, el 32,4%.
Conclusión: Mientras que en estudios anteriores se ha comprobado que las enfermedades de la piel difieren significativamente entre hombres y mujeres, en el presente estudio, sólo el acné y el eczema difieren significativamente. El problema cutáneo más sufrido en toda Arabia Saudí es el acné.

Palabras clave: Acné, enfermedades de la piel, dermatología.

Introduction

Skin diseases are amongst the common health problems that are confronted by primary care physicians. The incidence of skin disorders in an area or a country is based on multiple factors; these aspects include genetics, racial background, socioeconomic status, hygienic measures, customs, nutritional trends, and climatic conditions. Also, the diagnostic aptitude and skill of doctors, proficiency of dermatologists, and the obtainability of the up-to-date diagnostic facilities play a very significant part[1].

Almost every person suffers from skin diseases at some time during his/her life, and this shows the prevalence of dermatologic ailments. Conditions or states such as formation warts and acne are almost widespread and quite common at certain ages[2]. However, whether people spot or reach out for medical care for these common conditions varies widely depending on the site of the body involved and the severity of the disease.

Epidemiological surveys to evaluate a load of dermatological diseases in an area are crucial. The information and analysis derived about the incidence and spectrum of certain disorders assist in the formation of strategies for appropriate health care planning. Such info and stats also help to develop proper preventive and research programs according to the requirement of the community[3].

The reviews and research on the trends of common and specific skin disorders are very insufficient and sparse, and only a limited number of published research papers and reports are in Saudi Arabia[3]. Although the community-based research study is the most preferred way to evaluate the incidence of a specific disorder; this method is quite hard to conduct. As it is very time-consuming and requires a vast workforce as well as a lot of effort. As most of such studies to measure the occurrence of dermatological disorders are based on hospital attendees[4-5].

The main aim of this study is to evaluate the trends of dermal diseases in patients. So that proper training programs on mostly occurring skin disorders could be started for primary health care physicians and the rest of the general practitioners.

Methodology

The study was a cross-sectional study carried out among the adult population in Saudi Arabia from all five regions of Saudi Arabia from June 2020 to December 2020. There are some minor differences between these regions geographically, environmental and socioeconomic status. The adult population, including both males and females living in Saudi Arabia, was considered in the present study. An online questionnaire was disseminated through various social media platforms like twitter, Facebook, and WhatsApp. The weblink with the prerequisite consent was sent. The questionnaire had details on sociodemographic profiles and skin disorders experienced by the study respondents. This survey was validated, and a pilot study was carried out before the commencement of the study. The sample size for the present study was determined using the formula $n = p(1-p) * (Z_{\frac{\alpha}{2}}/e)^2$ where p is the preferred population proportion set at $0.5, Z_{\frac{\alpha}{2}} = 1.96$ where alpha was 0.05, and e was the expected margin of error. The desired sample size was 382, but larger sample size was collected. Data analysis was done using Statistical Package for Social Science (SPSS) version 22 and Excel 2013. Ethical approval was obtained from King Fahad Medical City Research Centre.

Results and analysis

77% (1039 out of 1349) of the respondents were females, while the rest were males. 751 of the respondents were aged between 18 and 35, which represented the majority of the respondents (55.7%). Respondents aged older than 65 were 0.7%. Only 2.6% of the respondents were from the Northern region, while the Western Region was represented by 636 respondents (47.1%), while the Eastern region was represented by 33.7% of the respondents. The proportion of married and single respondents was almost the same as the single respondents were 54.3%, while 45.7% of the respondents were married. 861 (63.8%) of the respondents reported their highest qualification as a diploma or bachelor level, while respondents whose highest level of education was high school were represented by 27.8% of the respondents. The majority of the respondents reported their highest education level as bachelor's or diploma. For the respondents represented in the sample, income was fairly equally distributed as the percentage of respondents with income less than 5000 riyals per month was 46.2%, while those with income greater than 15000 riyals per month was 15.3%. 55.4% of the respondents confirmed that at least one of their family members had the same skin problems as the respondents, while the majority of the respondents indicated that they are not ashamed of the skin problem they are having. 98.9% of the respondents reported no instances of cancers in their life, while 1.1% of the respondents confirmed they had had some form of cancer in their life prior to the skin problem. **Table I** shows the summary statistics for the present sample data.

The inference was made on the sample data to compare whether the different age groups and gender of the study participants significantly varied with respect to the different ailments presented in the study. Acne was much more prevalent in individuals aged 18-35 (63.9%), and this ailment significantly varied across the five age groups represented in the sample data p=.000. There was no significant difference in the proportion of respondents who

suffered from psoriasis across the different age groups (p=.111), the proportion of respondents across age groups who suffered from alopecia (p=0.972). However, there was a significant difference in the proportion of respondents who reported suffering from eczema across the five age groups p=0.000. (**Table II**)

The present study also established that the proportion of males and females who suffer from acne is significantly different at 0.01 significance level p=.000. The same can be said of the proportion of males and females who suffer from eczema, where the p-value associated with the chi-square statistic was p=0.000. However, there was no significant difference between males and females in terms of proportion that suffers from psoriasis alopecia, vitiligo boils, and moles (p>.05 in all mentioned cases above), as shown in the below **table III**.

There was a significant association between blistering when exposed to the sun and application of sunscreen or any other such product p<.001 as per **table IV**.

Table I: Distribution of study respondents based on sociodemographic variables and health conditions.

Variable	Freq.	Percent
Gender		
· Male	310	23
· Female	1039	77
Age		
· <18	164	12.2
· 18-35	751	55.7
· 36-50	289	21.4
· 51-65	136	10.1
· 65>	9	0.7
Residence		
· Central Region	23	16.5
· Eastern Region	455	33.7
· Northern Region	35	2.6
· Western Region	636	47.1
Marital Status		
· Single	617	54.3
· Married	732	45.7
Education Level		
· Primary	32	2.4
· High School	375	27.8
· Higher studies	80	5.9
· Diploma/bachelor	861	63.8
Income (Riyal/month)		
· <5000	623	46.2
· 5000-10000	283	21.0
· 10000-15000	236	17.5
· >15000	207	15.3
Whether anyone else has the same problem in Family		
· Yes	748	55.4
· No	366	27.1
· Don't Know	235	17.4
Do you feel ashamed of your condition?		
· Yes	363	26.9
· No	765	56.7
· Not Applicable	221	16.4
History of Any cancer		
· Yes	15	1.1
· No	1334	98.9
Family history of any cancer?		
· Yes	353	26.2
· No	825	61.2
· I don't Know	171	12.6
Skin disease		
· Yes	238	17.6
· No	1111	82.4

Table II: Age-wise distribution of respondent's response on previous history/ present complaints of different skin conditions.

Disease	<18	18-35	36-50	51-65	65>	Sig
Acne	24.9	63.9	10.7	0.6	0	***.000***
Psoriasis	6.7	36.7	30	26.7	0	.111
Alopecia	23.1	23.1	30.8	23.1	0	.972
Eczema	4.3	58.5	22.3	13.8	1.1	***.000***
Vitiligo	22.1	22.2	33.3	22.2	0	.881
Boils	10	50	30	10	0	.221
Moles	7.1	46.4	28.6	10.7	7.1	***.002***
Freckle	0	41.2	52.9	5.9	0	***.047***

Table III: Sex-wise distribution of respondent's response on previous history/ present complaints of different skin conditions.

Disease	Male	Female	Sig.
Acne	13.6	86.4	.000
Psoriasis	43.33	56.67	.465
Alopecia	61.5	38.5	.263
Eczema	24.47	75.53	.000
Vitiligo	66.67	33.33	.157
Boils	80	20	.058
Moles	67.86	32.14	.059
Freckles	64.71	35.3	.225

Table IV: Association between blistering of skin exposed to sun and sunscreen application.

	Value	df	P value
No of cases	1349	-	-
Likelihood Ratio	48.50	6	0.00

Discussion

The present study aimed at exploring and evaluating the different situation of skin health across the different regions of Saudi Arabia. The present analysis found out that only 17.4% of the study respondents did not report any kind of skin disorders, while more than 82% of the study respondents reported some form of skin ailment. This is in contrast to the report by Thomas et al., 2019 where they found out that half of the adult population in India suffered from some form of skin ailment. That the present study predominantly consisted of female respondents as opposed to male respondents was also reflected in the other studies carried out with the aim of investigating the prevalence and patterns of skin diseases[6-10]. In this regard, the present study incorporated respondents from across Saudi Arabia as opposed to a specified region in the Kingdom of Saudi Arabia. Just like in the study by Alshamrani on the trends in skin ailments in Saudi Arabia, the average age of study participants was 35 years with a standard deviation of 3.8 years. Age was grouped in the present study, with the highest frequency of respondents being aged between 18 and 35 years[11].

That women experience more dermatological conditions generally more than men do is well documented[12]. Despite the fact that a majority of Saudi women cover the bigger portion of their bodies, leaving only the hands and the feet, the difference in men and women skin

ailments can be attributed to the use of beauty products by women[13] (Matta et al., 2019). The difference in skin ailments between male and female respondents was only observed in the present study in the cases of acne and eczema (p<.001 in both cases). In both cases, there was a significantly larger percentage of women with the said diseases than there were men. However, that alopecia was significantly different in proportion between men and women in the study done in Saudi Arabia and is not reflected in our study. The most common skin ailment in our study was acne (32.4%), while in Alshamrani was dermatitis (21.4%)[11].

As would be expected, acne hits most people in their younger adult years as compared to their old age. There was a significant difference in the prevalence of acne across the five age groups p=.0000. This finding was also observed in the study by El Akawi et al[12] and Alshamrani et al11 which could be easily attributed to the rapid growth and change in the hormonal composition during young adulthood. Women, especially in the ages between 18 and 35, could have reported higher rates of acne due to the increased image and self-awareness than men in the same age bracket. While one would expect skin conditions such as acne that are visible to everyone to induce some form of low self-esteem, the proportion of the respondents in the present study who reported low self-esteem due to skin condition was lower than those who did not report a drop in self-esteem 26.9%. This is in comparison to the findings by Alshamrani et al[11], where the bigger percentage of respondents reported a drop in self-esteem.

Sampling and the accuracy of the measurements taken form an important part in the validity of study results. The gold standard to improving validity is conducting a complete experiment where each population member has an equal chance at being included in the sample. This was not the case in the present study which rendered the results quasi-experimental hence undermining the validity of the study. However, since the study included participants from all over Saudi Arabia, the representativeness of the sample was intact.

Limitations of the study: The study was conducted online during the covid 19 pandemic, so it is affected the responses rate. In addition to that, there was no clinical confirmation, and the information collected is solely based on respondents' self-reporting of skin diseases.

Conclusion

While skin disease may have been found to significantly differ between men and women in previous studies, in the present study, only acne and eczema significantly differed. The most suffered skin problem across Saudi Arabia is acne.

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Interests conflict

The authors declare no conflict of interest.

Ethical approval for study

The study was approved by the Medical Ethics Committee of Majmaah University.

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