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RESEARCH ARTICLE

THE PATTERN OF SKIN DISEASES IN A HOSPITAL IN QUNFUDAH REGION, SAUDI ARABIA.

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Manuscript Info

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Abstract

Background and objectives: No available previous study conducted to described the pattern of skin diseases in Qunfudah region. Thus, a study in this regard was needed. The aim was to assess the pattern of skin diseases suffered by patients in this area.

Methods: It was conducted in dermatology department at South Qunfudah General Hospital (SQGH), Qunfudah, Saudi Arabia. Data of new patients who seen in clinic between October 2015 and September 2016 were retrospectively review.

Results: This study included 792 patients, all of them were referred from primary health care centers. Of whom 450 (56.8%) were females and 342 (43.2%) were males; the female-to-male ratio was [1.3:1] and the mean age was 30 years. Females were dominant in most of the age groups. The distribution of skin diseases was: eczema/dermatitis (48.2%), pilosebaceous disorders (14.9%), infections (11.2%), pigmentary disorders (7.7%), hair disorders (6.2%), papulosquamous disorders (4.2%), urticaria (3.0%), autoimmune diseases (1.3%), keratinization disorders (0.4%), and miscellaneous disorders (2.9%).

Conclusion: Our study was carried out in just one hospital (SQGH), it only provides a rough estimation for the prevalence of skin diseases in this area. Three-quarters of the patients had eczema/dermatitis, pilosebaceous disorders, and infections. It is recommended that training courses be developed to instruct primary health physicians on how to deal with these three skin disorders; this could help reduce referrals to dermatology clinics, as well as allowing patients to be treated earlier.

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Introduction:-

The skin is the largest organ in the human body. As well as connecting the body with its surroundings, it makes it more susceptible to numerous injuries caused by, for example, mechanical trauma, microbial invasion, thermal and chemical insults, and radiation exposure. Skin diseases are so prevalent that it is likely that everybody will develop a skin disorder at some point during their lifetime, such as sunburn, irritation, dry skin, acne, warts, or pigmentary changes. Skin conditions account for 14% of primary health physician consultations,¹ and they are found in more than half of adult population.²

Disease incidence varies according to the environment, occupation types, and socioeconomic status that are dominant in each community. Infections are found to be most prominent in developing countries, while eczema is the top threat in developed nations.³⁻⁶

Dermatological diseases are unique among other diseases, as can be clearly seen and diagnosed by the doctors, unlike the other diseases which the defect occur in the internal organs of the body. Fortunately, skin diseases are usually not life-threatening; however, they can be socially embarrassing for the sufferer and can have a marked impact on their life. Such effects can be summarized by the five D's: Disfigurement, Discomfort, Disability, Depression, and Death, the last of which is thankfully rare.³ 30% of patients with skin diseases have depression and anxiety disorders,⁷ while some studies have even found that the suicide risk is much higher in sufferers of skin conditions.⁸

In recent years, development and urbanization have been accelerating among many populations; the very same situation can be seen in Saudi Arabia, leading to certain changes in the lifestyle and health of communities. While a few studies have been published on skin disease patterns in certain areas of Saudi Arabia,⁹⁻¹² there is no information available on other areas such as the Qunfudah region, leading to the necessity of conducting this study in said locality. In order to achieve better health services and enable planning for future treatment projects, it is helpful to know which types of skin disease most prevalently affect which subgroups of the population; epidemiological studies are highly useful in this regard. Qunfudah is located on the coast in the south-west of the country. The area has more than 210,000 inhabitants, a fairly high average annual temperature, and humid weather with occasional rainfall.¹³

This study was critical, as the climate of this area makes the population more liable to developing certain skin diseases, particularly infections; the results will help in the tackling of these conditions. The aim was to determine the pattern of skin diseases for patients attending South Qunfudah General Hospital's (SQGH) dermatology clinic.

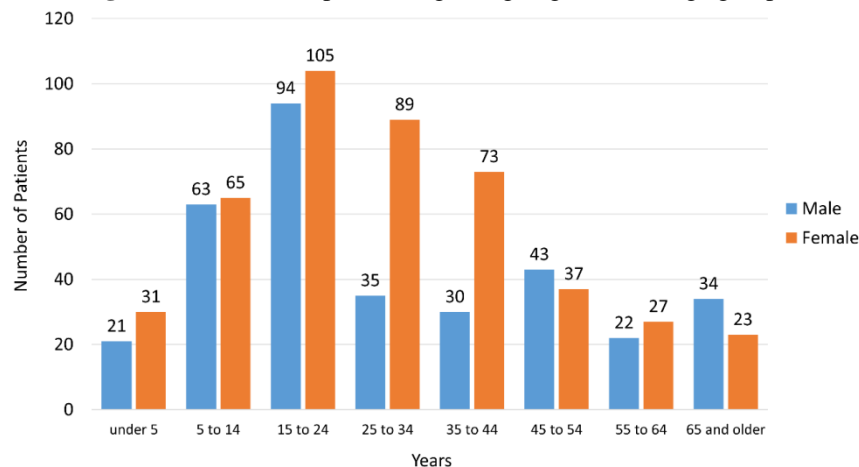
Methods:-

Ethical approval was obtained from the hospital administration of SQGH. This was a retrospective study, including all new patients seen in the dermatology clinic between 1 October 2015 and 2 September 2016. All patients were assessed by consultants and specialist dermatologists. Their medical records were collected and reviewed, and the following information taken for each patient: file number (to avoid repetitions), gender, age, and diagnosis based on patient's history, clinical examinations, and laboratory investigations. Data was entered into Microsoft Excel 2016 and analyzed using Statistical Package for Social Science (SPSS version 21) by frequencies and measures of central tendency; in addition, a t-test was performed, with the significance value set to ($P = 0.05$).

Results:-

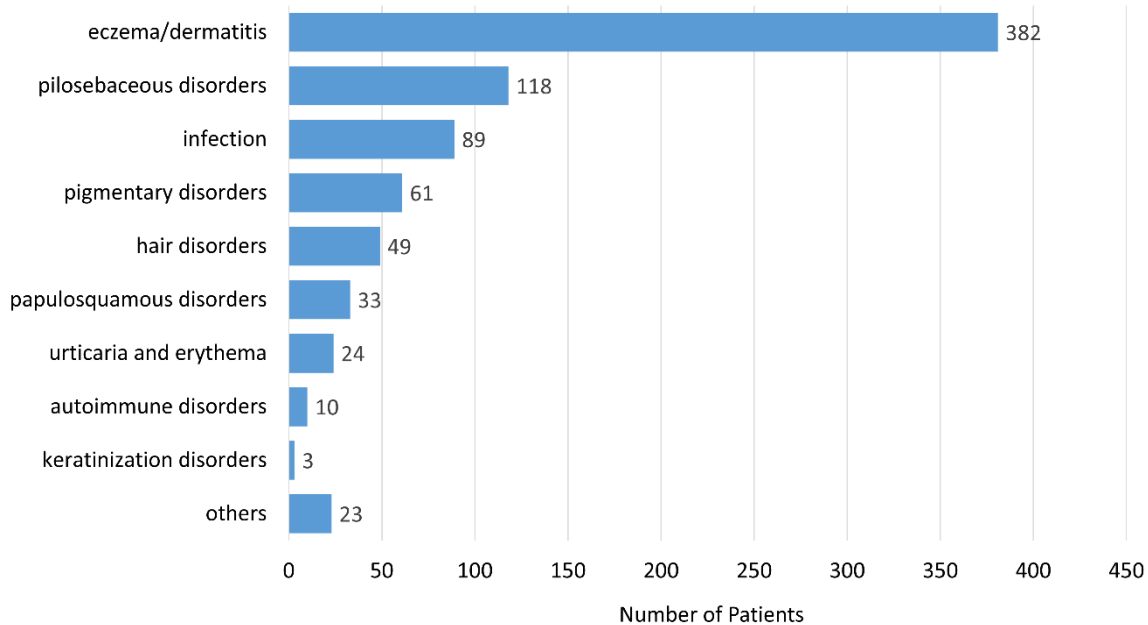
After reviewing all files for the dermatology clinic patients seen within the selected period, the total number of new patients was 792. Of these, 450 (56.8%) were females and 342 (43.2%) were males, with a female-to-male ratio of 1.3:1; there was no statistical significance in disease incidence regarding both sexes ($P = 0.22$). As shown in **Figure 1**, female patients were prevalent in every age group, except for the 45 to 54 and over-65s, where males were dominant. Patients were aged between 1 and 96 years, with the most common age group being 15-24 (25.1%); the mean age was 29.2 in females and 31.1 in males.

Figure 1:- Number of patients regarding to gender and age groups:



According to **Figure 2**, which shows the order of skin diseases based on the number of patients, the percentages of prevalence of different conditions were as follows: eczema/dermatitis (48.2%), pilosebaceous disorders (14.9%), infections (11.2%), pigmentary disorders (7.7%), hair disorders (6.2%), papulosquamous disorders (4.2%), urticaria (3.0%), miscellaneous disorders (2.9%), autoimmune diseases (1.3%), and keratinization disorders (0.4%).

Figure 2:- Order of skin diseases in terms of the number of patients:



Eczema/dermatitis was the most common condition; its statistics are shown in **Table 1** below:

Table 1. Different types of eczema/dermatitis and No. of patients with percentages:

Different types of eczema /dermatitis	Number of patients (% in subtypes)
atopic dermatitis	309 (80.89%)
seborrheic dermatitis	21 (5.50%)
contact dermatitis	16 (4.19%)
prurigonodularis	14 (3.66%)
pityriasis alba	13 (3.44%)
neurodermitis	9 (2.36%)

Of the pilosebaceous disorders, acne vulgaris was the most common 109 (13.8%), followed by folliculitis 7 (0.9%), miliaria 1 (0.1%), and onychomycosis 1 (0.1%). Turning to skin infections, fungal (**Table 2**), viral, bacterial, and parasitic types constituted 6.4%, 2.9%, 1.4%, and 0.5% of the total percentage, respectively. Herpes simplex was the top form of viral infection 20 (2.5%), followed by the herpes zoster virus 2 (0.3%) and the varicella-zoster virus (chickenpox) 1 (0.1%). The only form of bacterial infection was impetigo 11 (1.4%), and in terms of parasitic infections, only pediculosis was found at 0.5%.

Table 2. Different types of fungal infection with No. of patients and (%) of each type:

Type of fungal infection	No. of pts (% in subtypes)
tinea versicolor	22 (43.14%)
tinea capitis	10 (19.61%)
tinea pedis	9 (17.65%)
tinea cruris	6 (11.76%)
tinea corporis	3 (5.88%)
pityriasis versicolor	1 (1.96%)

Pigmentary disorders were seen in considerable numbers. Melasma was the most dominant 38 (4.8%), vitiligo 21 (2.7%), acanthosis nigricans 1 (0.1%) and post-inflammatory hyperpigmentation 1 (0.1%). Hair disorders were represented by hair fall 33 (4.2%) and alopecia areata 16 (2%). Psoriasis, lichen planus, and pityriasis rosea were the different types of papulosquamous diseases, with the following percentages: 24 (3%), 8 (1%), and 1 (0.1%). Urticaria was found in 24 (3.0%). Some autoimmune conditions were seen, such as Bechet's disease, discoid lupus erythematosus, and bullous disease, with a total percentage of (1.3%). Keratinization disorders found were ichthyosis vulgaris, keratosis, and corns; these were the least prevalent, accounting for only (0.4%).

Table 3:- shows other miscellaneous skin diseases.

Other miscellaneous skin diseases
Ulcers
Keloid
Striae
Postherpetic neuralgia
Skin tags
Xanthelasma
Neurofibromatosis
Hemangioma
Xerosis

Male patients had more infections, urticaria papulosquamous, and autoimmune and keratinization disorders, while female patients suffered more from the following conditions: eczema/dermatitis and pigmentary and hair disorders. Pilosebaceous disorders were equal between both sexes. Eczema/dermatitis was prominent in all age groups, excepting patients aged between 15 and 24, who suffered more from pilosebaceous disorders. The top five diseases occurring in females were: atopic eczema (40%), acne vulgaris (13.8%), hair fall (6.9%), melasma (5.8%), and seborrheic dermatitis (3.1%), while the pattern for males was: atopic eczema (37.7%), acne vulgaris (13.7%), urticaria (4.4%), tinea versicolor (3.8%) and psoriasis (3.8%)

The most affected age groups for each disease are shown in **Table 4**.

Table 4:- Most affected age groups for each disease

Type of skin disease	Most affected age group
Eczema/dermatitis	5 to 14
Pilosebaceous disorders	15 to 24
Infections	15 to 24
Pigmentary disorders	25 to 34
Hair disorders	25 to 34
Papulosquamous disorders	35 to 44
Urticaria	Under 5
Autoimmune disorders	Under 5
Keratinization disorders	5 to 14

Discussion:-

After we reviewed all patients' files from the dermatology clinic for the selected period, we found that all of them were referred from primary health care centers. Our results show that female patients attend dermatology clinics more than males; similar results have been found in Norway, Egypt, Ethiopia, and India.^{5,14-16} As shown in **Figure 1**, female patients were more prevalent in each age group, except for the 45 to 54 and over-65s, we think that this is because females care about their appearance more than males, but lose this concern as they become older. The higher number of females can clearly be seen in the 15-24 group; this may be explained by the fact that during this period, acne has the highest incidence rate, causing unwanted cosmetics problems. However, some studies conducted here in Saudi Arabia have found the opposite, with males being significantly more prominent than females in other regions; this may be due to cultural factors that prevent females from seeing doctors, or male lifestyles in these areas that make them more prone to skin diseases.⁹⁻¹²

In general, the pattern of skin diseases in the area studied, as shown in **Figure 2**, is identical to what has been found in previous studies all around Saudi Arabia. However, in contrast with these previous studies, atopic eczema was

also the most frequent disease, but the percentage of eczema was much higher in our area, while viruses were the commonest cause of infections in other areas, but in our region fungal infection was more prevalent. This may be caused by the geographical location of Qunfudah city; being beside the sea, there is a high level of humidity, and the hot climate year-round creates a viable breeding ground for fungal infections.⁹⁻¹²

Infections were more common in males; we believe this is because males' lifestyle cause them to have more exposure to heat and humidity, as well as contact with animals. However, females had more hair disorders, which we believe are induced by pregnancy and breastfeeding, or perhaps because they use hair dyes more often than males, that contain chemicals that could lead to hair damage; a recent study conducted in South India supports this hypothesis.¹⁷

When we compare our results with other studies performed outside Saudi Arabia, eczema was much more prevalent in our area, representing about half of all cases, while in other countries such as India, Nigeria, and Egypt, infections were more prominent. This could be due to the superior quality of healthcare services in Saudi Arabia; according to some studies, eczema is more common in developed countries and infections are more prevalent in developing countries.⁴⁻⁶

Acne here is low compared to other countries, accounting for 36.7% of total skin diseases amongst the young in our area; figures were almost the same for both genders. In other countries, such as India, this was much higher, representing 66.5% of all skin diseases among youth, as well as being more prominent in females, which may be due to genetic differences between populations.¹⁷ Therefore, our results support the hypothesis that skin disease prevalence differs according to many factors, such as environmental, socioeconomic, and racial.

This was the first study conducted in Qunfudah city to describe the pattern of skin diseases; because it was carried out in only one hospital (SQGH), it only provides a rough estimation for the prevalence of skin diseases in this area. In addition, our study was done through reviewing the dermatology clinic patients' files, which lacked certain useful information, such as patient occupation, habitation, socioeconomic status, and family history of the same condition. Accordingly, a larger population-based epidemiological study is recommended in order to determine the wider pattern of skin diseases.

In conclusion, the top five dermatological conditions seen in (SQGH) were: eczema/dermatitis, pilosebaceous disorders, infections, and pigmentary and hair disorders. All patients seen in the dermatology clinic were referred from primary healthcare centers, and most of these conditions can be diagnosed and treated by primary healthcare physicians. We recommend the development of key awareness campaigns to increase the population's knowledge of these diseases, as well as better training programs for primary healthcare physicians regarding skin diseases, which will be beneficial in reducing the referrals to dermatology clinics as well as allowing these diseases to be diagnosed and treated as early as possible.

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