

Dermatoepidemiology: A Household Survey Among Two Urban Areas In Basrah City, Iraq

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Abstract

Background: The studies on the frequency and distribution of skin diseases in Iraq use to be on a small scale and not comprehensive because these are either based on hospital attendance or only for specific diseases or specific group of population such as school or occupation.

Objectives : The study represents an attempt to explore epidemiological issues related to skin disorders and to estimate the prevalence and distribution of skin diseases in two urban areas in Basrah city, southern area in Iraq .

Patients and methods : A cross-sectional community based study was carried out among the population of two urban areas of low and high socioeconomic status in Basrah city, namely Al-Jamhoriah (area A) and Manawi-Basha (area B). The sample design adapted was multi-stage sampling technique

Results :The number of houses was 1080 with total population of 3649 and 3017 inhabitants in area (A) and area (B) respectively The overall prevalence rate of skin disorders was 29.1 % in area (A) and 20.3% in area (B) with a significant difference between the two areas. High prevalence rates of skin disorders were among age groups (15<25 and 25<45) years old, and among housewives in both areas .The study showed that the leading causes ,when all forms of skin disorders were considered together in both areas , were as follow: The skin infections and infestation (bacterial, viral, fungal and parasitic) were constituted (23.9%)of all skin problems , followed by eczema / dermatitis (19.0%) and acne vulgaris (16.8%). Skin disorders among the population studied were classified according to international statistical classification of diseases (10-1CD) .

Conclusions: Skin diseases are common in the community, affecting all age groups of both sexes, and Infectious and infestation diseases were the major problems especially in those of low socio-economic status.

INTRODUCTION

Dermatoepidemiology refers to the study of the epidemiology of dermaiological disorders . It emphasizes the study of groups and the probability of certain events happening ¹. Although epidemiology is as old as Hippocrates, it is still a relatively new and fashionable field within dermatology ². The first epidemiological discoveries in dermatology can be traced to 1746 when James Lind concluded that scurvy in sailors was related to dietary factors ³. Also Joseph Gold Berger observed that patients admitted to the Georgia state sanatorium during 1910 developed pellagra and he suggested that pellagra was due to the absence of “essential vitamins ^{2,3}. The recognition of lyme disease is a classical work of “ infectious “ disease in

dermatoepidemiology ⁴ . The prevalence of skin diseases in any community depends upon various factors, namely the genetic and racial constitution, the social and hygienic standards, customs and occupations, the nutritional status and age structure of the community, climatic factors, state of industrialization, etc. ⁵. Though community-based studies are the best to determine the incidence of a particular disease, they are difficult to be carried out. The overall prevalence of skin diseases in population based studies conducted throughout the world varied from 14% to 50%. This variation may be due to variation in study design, diagnostic criteria and study sample, and other variables^{2,3} . A classic example of prevalence study was the First US National Health and Nutrition Examination Survey (HANES-1) during 1971-1974 suggested nearly one-third had one or

more significant disorders with an additional 12.5 % of the proportion were deemed to have a skin condition that was clinically inactive at the time of examination ⁶. Another example in UK was the Lambeth Study in 1975 in which the overall proportion of the population found to have any form of skin diseases was 55% (95% confidence intervals 49.6-61.3%) and only 22.5 % (95 % confidence intervals 17.8 - 27.2 %) need medical care ⁷. While in developing countries the skin diseases are very common ,predominately infections and infestations , and they are most common among the younger age group ^{8,9,10,11,12}. In Iraq, situation where the size of the problem is unknown because most studies on the frequency and distribution of skin diseases have been on small scale and are not comprehensive because either based on hospital attendance, or only on a specific disease, or specific group of population such as school or occupation and does not reflect true prevalence and scope of the skin diseases in community ^{13,14}. Studies on the occurrence of skin diseases in Arabian countries have the similar limitations as in Iraqi studies ^{15,16,17,18}.

MATERIALS AND METHODS

A household survey with multi-stages sampling technique was carried out in Basrah city .According to municipal and statistics information , Basrah center is a large city which consist of 75 areas (Hay) consisting of 6 main sectors which represent different socioeconomic groups. We selected 10 areas as high socioeconomic groups and 15 areas as low socioeconomic group, each area consists of a cluster of houses. Both of them were considered as primary sample units , which might be considered representative of all other areas in the city. At first Al-Jamhoriah and Manawi Basha areas were randomly selected from low and high socioeconomic groups respectively as first stage sampling. Then each area was subdivided further into two parts separated from each other by roads. One part was randomly selected as second stage sampling from each area. For the purpose of the study, we will refer to Al-Jamhoriah and Manawi-Basha areas parts as area (A) and (B) respectively in the text .These were considered as the target cluster samples from which all houses were included in this study.

The number of houses in sample clusters in areas (A) and (B) were 542 and 538 respectively. The number of houses that were successfully visited were 513 in area (A) and 488 in area (B).The total population of 6666 inhabitants of all ages and both sexes in both areas .The data were collected by using a standard questionnaire designed for the purpose of study for both areas through personal interview and

examination at homes . The results of the cross-sectional study were presented in simple tables and most of the statistics were done in the computer center at the University of Basrah (Microsoft Excel); other simple data were analyzed by the ordinary scientific calculator . The diseases were classified into different groups according to international statistical classification of diseases (10-ICD) recommended by WHO . The data which was obtained from the study was compared with others studies from other parts of the world.

RESULTS

A total of 513 and 488 houses were visited successively in the sample cluster of area (A) and area (B) respectively .The response rates was (94.7%) in area (A) and (90.7%) in area (B) . .The total population in area (A) was 3649 inhabitants , 1793 (49.1%) were males and 1856 (50.9 %) were females, while in area (B) the total population was 3017 inhabitants , 1435 (47.6 %) were males and 1582 (52.4%) were females. The crowding index in area (A) was (3.6) compared to that in area (B) which was (1.6). Of the 3649 inhabitants under study in area(A), 970 had skin diseases with a prevalence rate of 26.6 % .While of the 3017 inhabitants in area (B) ,only 539 had skin diseases with prevalence rate 17.9% .Highly statistically significant difference was found in prevalence rate between the two areas (P<00001). But more than one disorders in one inhabitant was detected ,this gave an overall prevalence of skin disease 29.1% in area (A)and 20.3 % in area (B) and also highly significant difference between the two areas (P< 0.00001) [Table 1].

Figure 1

Table 1: Basic population characteristics and prevalence of skin diseases in both areas.

Variables	Area A	Area B
Number of houses in the sample clusters	542	538
Number of houses successfully visited	513	488
Number of houses which were found empty or closed (non responses)	29	50
Houses response rates	94.7 %	90.7 %
Total population in the sample clusters	3649	3017
Number of inhabitants males	1793(49.1%)	1435(47.6)
Number of inhabitants females	1856 (50.9%)	1582(52.4)
inhabitants having skin diseases	970	539
Prevalence in the sample clusters	26.6%	17.9%
Total number of skin disorders	1061	612
Overall prevalence skin diseases (%)	29.1%	20.3%
Total of sleeping rooms in the houses visited	1015	1939
Crowding index	3.6	1.6

The age groups distribution for both sexes of the sample population in both area was generally similar . Generally high percentage of prevalence rates in both areas in age

group was (15<25 and 25<45 years). Also the percentage of females having skin disease were higher than males (32.9 / 25.2) and (21.6 / 18.8) in area (A) and (B) respectively [Table 2].

Figure 2

Table 2: Age and sex specific prevalence rates of skin diseases in both areas.

Age group (Years)	Area A			Area B		
	Inhabitants M/F	No. of cases M/F	Total %	Inhabitants M/F	No. of cases M/F	Total %
<5	222 / 225	43/45	19.7	189 / 206	28/26	13.7
5<15	457 / 466	58/75	14.4	369 / 399	40/63	13.4
15<25	479 / 473	163/211	39.3	372 / 394	79/113	25.1
25<45	391 / 403	129/200	41.4	311 / 337	78/104	28.1
45<65	192 / 206	39/54	23.4	148 / 180	33/25	17.7
=>65	52 / 83	19/25	32.6	46 / 66	12/11	20.5
Total	1793/1856	451 / 610	29.1	1435 /1582	270/342	20.3

The study showed that the leading causes when all forms of skin disorders were considered together in both areas were as follow : the infections (bacterial, viral, fungal and parasitic) were constituted (23.9%)of all skin problems , followed by eczema / dermatitis (19.0%) and acne vulgaris (16.8%). Skin disorders among the studied population were classified to (11) main groups according to international statistical classification of diseases (10-1CD) . The prevalence of diseases group and specific skin diseases in both areas are showing in the [Table 3].

Figure 3

Table 3: The pattenen and frequency of groups and specific skin diseases in both areas.

Diseases group (1CD-10)	Area A			Area B		
	No. of cases	%in group	% of total cases	No. of cases	% in grop	% of total cases
1- Dermatitis /eczema (L20-30)						
Infantil atopic dermatitis (20.8)	21	10.2	2.0	20	17.9	3.3
Childhood atopic dermatitis (20.0)	9	4.4	0.9	4	3.6	0.7
Pityriasis alba (L30.5)	33	16.1	3.1	12	10.7	2.0
Contact dermatitis (L23,24)	65	31.7	6.1	30	26.8	4.9
Pruritis (L29)	30	14.6	2.8	15	13.4	2.5
Others (L30)	47	22.9	4.4	31	27.7	5.1
Total	205	100	19.3	112	100	18.3
2-Bacterial infections (L00-L08)						
Impetigo (L01)	55	69.1	5.2	6	46.2	1.0
Abscess,furuncles,carbuncles(L02)	18	19.4	1.7	4	30.8	0.7
Others (L08)	20	21.5	1.9	3	23.1	0.5
Total	93	100	8.8	13	100	2.1
3-Viral infections						
warts (B07)	28	60.9	2.7	28	80.0	4.6
Chickenpox (B01)	13	28.3	1.2	5	14.3	0.9
Herpes simplex (B00)	1	2.2	0.1	2	5.7	0.3
Others	4	8.7	0.4	0	0.0	0.0
Total	46	100	4.3	35	100	5.7
4-Superficial fungal infections (B35-B49)						
T. capitis (B35. 0)	9	9.3	0.9	2	3.7	0.3
T. pedis (B35.3)	15	15.6	1.4	10	18.5	1.7
T. corporis (B35.4)	5	5.2	0.5	1	1.9	0.2
Other tinea	7	7.3	0.7	2	3.7	0.3
Total	36	37.5	3.4	15	27.8	2.5
Pityriasis versicolor (B36.0)	60	62.5	5.7	39	72.2	6.4
Total	96	100	9.1	54	100	8.8
5-Parasitic infestations ()						
Pediculosis and phthiriasis (B85)	15	30.6	1.4	2	14.3	0.3
Scabies (B86)	25	71.4	3.3	7	50.0	1.1
Others	9	18.4	0.9	5	35.7	0.8
Total	49	100	4.6	14	100	2.3
6-Hair disorders (L63-L68)						
Alopecia areata (L63)	7	16.3	0.7	8	22.2	1.3
Hypertrichosis (L66)	1	2.3	0.1	4	11.1	0.7
Others	35	81.3	3.3	24	66.7	3.9
Total	43	100	4.1	36	100	5.9
7-Nail disorders (60-L62 ,B37.2,B35.1)						
Paronychia (B37.2)	12	31.6	1.1	4	20.0	0.7
Onychomycosis (B35.0)	11	28.9	1.0	12	60.0	2.0
Others	15	39.5	1.4	4	20.0	0.7
Total	38	100	3.6	20	100	3.3
8-Pigmentary disorders (L80-L81)						
Vitiligo L80	14	14.3	1.3	20	30.8	3.3
Chloasma L81.0	51	52.0	4.8	30	46.2	4.9
Freckles L81.2	18	18.4	1.7	11	16.9	1.8
Others	15	15.3	1.4	4	6.2	0.7
Total	98	100	9.2	65	100	10.6
9-Papulo squamous disorders (L40- L45)						
Psoriasis (L40)	20	50.0	1.9	15	75.0	2.4
Pityriasis rosea (L42)	2	5.0	0.2	0	0.0	0.0
Lichen planus (L43)	8	20.0	0.8	2	10.0	0.3
Others	10	25.0	0.9	3	15.0	0.5
Total	40	100	3.8	20	100	3.3
10- Urticaria and erythema (L50-L51)	32	100	3.0	17	100	2.8
11- Acne vulgaris (L 70)	151	100	14.2	130	100	21.2
12- Miscellaneous	170	100	16.0	96	100	15.7
13-Total	1061	100	100	612	100	100

DISCUSSION

The study represents an attempt to explore epidemiological issues related to skin disorders in Basrah, southern area in Iraq. Dermatoepidemiology has become an important branch in dermatology during the last decade .To our knowledge this is the first population based study on the prevalence of the skin diseases in Basrah Governorate and even in Iraq.

The sample of both areas consisted of 1080 houses with population of 6666 households .The high response rates in both areas and the application of randomly selected sample made the results to be regarded as approximately valid to Basrah city and appropriate for discussion and comparison with other studies .However one should be cautions when attempting to apply the results to the whole population of Basrah .A more representative sample drawn from rural and urban areas would be required .

The prevalence rate in area (A) was (29.1%) and in area (B) was (20.3%) with significant difference between the two

areas ($P < 0.00001$) but the overall prevalence rate in both areas together was (25.1%). This difference may be due to the variation in the level of sanitation and hygiene, economic status, level of education and family size. Whereby area (A) is considered to be low socioeconomic status and overcrowded (crowding index 3.6) compared to area (B) with high socioeconomic state (crowding index 1.6). In comparison with other population based studies conducted throughout the world, it can be shown that the overall prevalence rates varied from 14% to 50%^{2,3}, this range of prevalence rates are almost consistent with our figures, although there are a variation in the reported rates which may be explained by differences in sample design, sample size, age of studied population, method of interviewing, diagnostic criteria, racial, geographical and other social factors.

A population study in Mexico in 1990 with a sample of 50000 households involved 41 representative communities and was carried out by a team of dermatologists and nurses, the overall prevalence rate was 50%³. While in another study in Ethiopia in 1994, with a sample size of 3979 and house to house survey in 3 rural communities, the prevalence of skin diseases was 14%³. However, in a study in Pakistan carried out in 1980 included a sample size of 444 for all children aged less than 5 years in three villages in Punjab, the prevalence rate was 36%. Examination was carried out by research assistants trained by dermatologists⁹.

In the present study the prevalence rates of skin diseases in both areas were high among younger and adult group, 15<25 and 25<45 years old. This may be primarily due to the increase prevalence of acne vulgaris at puberty, pityriasis versicolor, chloasma and contact dermatitis, especially housewives contact dermatitis. This finding is consistent with other studies in which the pattern of skin diseases varied markedly with age when all forms of skin diseases were considered together^{3,6,7}. The percentage of skin disorders in our study was higher among females than males in both areas. The reasons behind this may be due to the high awareness of females about skin problems and its cosmetic appearance such as acne, chloasma and hair disorder as well as housewives dermatitis. On the contrary, males think that many of these disorders are trivial and do not justify medical attention.

The results also showed that when all forms of skin diseases were considered together in both areas, the leading cause was the infections which constituted 23.9%. This is followed

by dermatitis/eczema 19.0% and acne vulgaris 16.8%. Similar pattern is reported in other developing countries^{10,11,12}. However a population based study in Tanzania showed that scabies was observed in 6.0%, pediculosis capitis in 5.3%, and dermatophyte infections 5.1%¹². A more recent study in Tanzania showed that superficial mycosis was the most common skin disease followed by scabies, acne and eczema¹⁰. In a retrospective hospital-data study in Mali, infection constituted 41% of all diagnosed dermatological cases¹¹. The results of the present study are consistent with those published previously from Iraq and Arabian countries. However, the majority of those studies basically hospital based^{13,14,15,16,17,18}. Our results disagree with well known two populations based studies in developed countries, where it was found that eczema and acne were the most common diagnoses. This may be due to extent of reporting occupational dermatoses and difference with respect to life style, nutrition racial and regional variation^{6,7}.

CONCLUSION AND RECOMMENDATIONS

The skin diseases are common and at least a quarter of population has skin problems and the leading causes was infections and infestation followed by dermatitis and acne vulgaris and we recommend further community based studies to cover other parts of Iraq which are required to assess the scope and extent of skin problems in urban and rural areas.

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