

Epidemiology of Skin Diseases among Displaced People in Diyala Province

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Abstract:

Background: Diyala have many internally displaced persons as a consequence of the armed conflict. Those peoples experience serious health problems related to their displacement, including skin disorders.

Objective: To determine the prevalence of skin diseases and the use of health care among displaced patients in Diyala.

Methods: A case-series study conducted on 246 displaced patients from May to November 2017, who attended Baqubah teaching hospital in Diyala. All patients were diagnosed by dermatologists depending on clinical findings.

Results: A total of 246 displaced patient from all age groups mean±SD (21.9±18.59) years, range 1-64) consultate the clinic, of them (29.3%) male and (70.7%) female with male to female ratio (1:2.4). Infectious skin diseases have the highest rate (65.9%), followed by dermatitis (18.4%), acne (5.7%), alopecia (5.3%), and Papulosquamous diseases (4.8%). Parasitic skin infestations (31.7%) and viral infection (24.4%) were the commonest noted infections. Significant associations present between previous consultation and economic status, and between prevalence of skin infections and low economic status. Significant associations between skin diseases and rising crowding index.

Conclusion: Infectious skin diseases are common among displaced patients, significantly higher among low economic status. Skin diseases significantly associated with rising crowding index.

Keywords: Skin diseases, internally displaced persons, crowding index.

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Introduction:

Iraq is experiencing the worst humanitarian disaster in decades since late 2013, as a result of clashes between Iraq Security Forces and the armed groups. Increasing violence in Iraq has resulted in over 3.5 million internally displaced persons (IDPs), who often have a slight access to the healthcare services (1). Of these, 842,519 individuals are recorded as living in 93 official camps across the country. As a result of destruction of Infrastructure and medical facilities, the local population leaved with no access to medical care (2). IDPs throughout Iraq express many challenges affecting their health and they have little access to the health services. Overcrowding, poor water and sanitation quality, and poor shelter conditions in extreme summer and winter temperatures can result in greater risk of skin diseases (3). IDPs are very vulnerable: generally, they have pass through numerous traumatic events and have significant health issues (4). Skin diseases represented the third most common cause of morbidity in IDPs (5). It is known that skin diseases have a great impact on quality of life of the patients. Worldwide, skin diseases are among the greatest global health issues, as it affects 1 in 3 persons in the United State and 1 in 5 in the United Kingdom, and there are huge variances between weathers and cultures, with higher

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prevalence rate among developing countries (6). Diyala is situated in eastern-central Iraq, having typical dry desert weather. The temperatures easily exceed over 40°C in summer, whereas rain is extremely limited and restricted to the winter and early spring (7). Prevalence of various skin diseases, such as seborrheic dermatitis, increase in a dry atmosphere. Many skin diseases, such as photodermatitis, dominate in sunny climate, while other diseases, for instance psoriasis, declines in sunny areas (8). In Diyala, the accessibility to public services is lower than in the rest of the country. Only 74.8% of the populations have sustainable access to good water source, which is the lowest of the whole country. More than 20% of Diyala's population depends on a source other than the public water system to accomplish their water needs (7). In the developing countries, the main reason for targeting skin disorders is that the most of them are communicable, preventable, and controllable (9). While the overall prevalence of skin diseases in Iraq was 27% (10), there is a distinct lack of knowledge on the prevalence of skin disorders among IDPs in Diyala. So, it is important to know the pattern of skin diseases and which one is the most frequent as this will make it easy for those concerned with establishing plan for education of both primary care health physician practitioners and medical students. The aim of the Study was to determine the prevalence

of skin disorders and the use of health care among displaced patients in Diyala.

Patients and Methods:

Study Design: A case-series study conducted on displaced patients from 1st of May to 30th of November 2017.

Patient Population: The study group is comprised of 246 displaced patients complained of skin disorders and consulting the dermatological department at Baqubah teaching hospital. Their age ranges from 1 year to 64 years old. All displaced patients were diagnosed by dermatologists depending on the clinical finding. Verbal consent obtained from all patients or their legal representatives. In each patient, a detailed history was documented including (age, gender, residence, clinical diagnosis and questions concerning health, and habits).

The exclusion criteria, we exclude persons who displaced from others provinces.

Statistical analysis:

Data analysis was performed using SPSS Version 22.0 for Windows. Chi-square test was used in the analysis of data. P-values <0.05 were considered statistically significant.

Result:

Rates of skin diseases: The study shows high rates of skin diseases. Of 246 consultations of displaced patients who examined between 1st May, 2017 and 30th November 2017, the most common skin diseases, based on diagnosis given previously by a dermatologist, were molluscum contagiosum 35 (14.2%), followed by scabies 32 (13%), cutaneous leishmaniasis 26 (10.6%) and contact dermatitis 26 (10.6%), plane wart 25 (10.2%), pediculosis 20 (8.1%), tinea 16 (6.5%), and acne 14 (5.7%). The study shows that Infectious diseases were the most common category of skin diseases among displaced patients 162 (65.9%), followed by dermatitis 45 (18.3%) (Figure 1). Parasitic infestations were observed in 78 (31.7%), viral infections in 60 (24.4%), fungal infections in 16 (6.5%), and bacterial infections seen in 8 (3.3%) of patients. Contact dermatitis was the most frequent dermatitis. Diseases of skin appendages including acne seen in (5.7%) and hair diseases seen in 13 (5.3%).

Demographic Characteristics:

Age: The age of these patients was ranged from one year up to 64 years, with a mean±SD of (21.9±18.59) years. The result was highly significant for infectious diseases in relation to the age groups P-value is 0.00001, while it was not significant for other skin diseases. The age group most frequently represented was (1-10) years (35.3%).

Gender: In the present study, 174 (70.7%) of displaced patients were female, and 72 (29.3%) of them were males (72). Male to female ratio was (1:2.4). There was no association between gender and

skin diseases category in the current study.

Residence: Most of displaced patients who present for consultation in dermatological department at Baqubah teaching hospital lived in urban area 177 (70.7%), while only 9 (3.6%) lived in camps. On comparing the habitat by disease category, there were non-significant statistical differences of skin diseases between patients living in urban and rural areas or in camp.

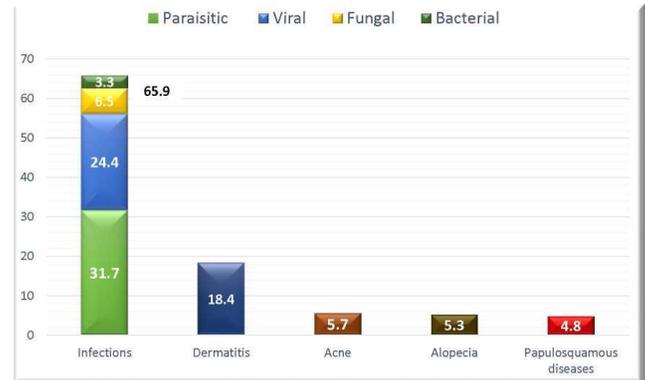


Figure (1): Frequency Distribution of skin diseases among displaced Patients by Categories.

Economic status: In the present study, there was strong association between economic status and skin diseases, the skin infectious diseases were more common in patients with poor economic status (69.4%), while noninfectious diseases were more common among patients with good economic status (60%) as shown in table (1).

Table (1): Frequency Distribution of Skin Diseases According to the Economic Status among Displaced Patients.

	Good Economic status		Poor Economic status		Total	
	No.	%	No.	%	No.	%
	30	12.2	216	87.8	(n = 246)	
Infectious Diseases	12	40	150	69.4	162	65.9
Non-Infectious Diseases	18	60	66	30.6	84	43.1
Total	30	100	216	100	246	100

The chi-square statistic is 10.156. The P-value is **0.001438**. This result is significant at P <0.05.

Duration of illness: The Duration of illness was ranged between 3 days up to 3 years, with a mean±SD of (6.7±14.97) months. 135 (54.9%) of displaced patients had an illness for 1-6 months.

Use of Medical Care: In the current study, only (42.7%) of displaced patients had previously visited a health care provider and received treatment, while (57.3%) hadn't visited a health care provider or received treatment for their condition. Most of the

displaced patients have poor economic status (87.8%). The P-value is 0.001246; the result is significant at $P < 0.05$ as shown in table (2).

Table (2): Previous consultations for a Health Care Provider among Displaced Patients in Relation to Economic Status.

	Good Economic status		Poor Economic status		Total	
	No.	%	No.	%	No.	%
Received treatment	21	12.2	216	87.8	237	42.6
Didn't Receive treatment	9	30	132	61.1	141	57.3
Total	30	100	216	100	246	100

The chi-square statistic is 10.4216. The P-value is **0.001246**. The result is **significant** at $P < 0.05$.

There is strong relationship between previous consultations and treatment and the disease duration. Most of the displaced patients didn't visit a health care provider or receive treatment in the 1st month of illness. The result is highly significant at $P < 0.05$ as shown in table (3).

Table (3): Previous consultations and treatment for a health care provider among displaced patients in relation to duration of illness.

	<1 month	1-6 months	7-12 months	> 12 months	Total
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Received treatment	6 (11.8)	69 (51.1)	24 (53.3)	6 (40)	105 (42.7)
Didn't Receive treatment	45 (88.2)	66 (48.9)	21 (46.7)	9 (60)	141 (57.3)
Total	51 (100)	135 (100)	45 (100)	15 (4.8)	246

The chi-square statistic is 25.97. The P-value is **0.00001** the result is highly **significant** at $P < 0.05$.

Living accommodation: In the present study, most of the displaced patients lived in overcrowding places (81.7%). The Crowding index was ranged from 1.5 up to 8 persons per room, with a mean \pm SD (3.16 \pm 1.24) persons per room. "Crowding index of each person is measured by dividing the number of households of each house by the number of the rooms, excluding the kitchen and bathroom" ⁽¹¹⁾. The prevalence of infectious skin diseases increased with rising households crowding index (P-value is 0.05), as shown in table (4). Significant association between households crowding index and Papulosquamous diseases (P-value 0.0035).

Discussion:

For decades the governorate of Diyala has been a flashpoint of conflict (7). This has leads to displacement of many persons. Displaced persons express many challenges affecting their health and they have little access to the health care services. Overcrowding, poor water and sanitation quality, and poor shelter can result in greater risks of skin diseases (3). This study was carried out to find the

epidemiological issues related to skin disorders encountered among displaced patients living in Diyala province. Although this study was limited to displaced patients who attended the dermatological department at Baqubah teaching hospital, we believe that the results represent a rough estimate of the frequency of skin diseases among IDPs in Diyala province. According to the etiology, infectious diseases were the commonest category of skin disorders encountered among displaced patients (65.9%). The result accords with the findings of some studies, in Libya (4) and in Chad (12), in that the infectious diseases were most common skin diseases in displaced patients, but other studies, in Spain (13) have reported the predominance of dermatitis among displaced patients. The high skin infections frequency may be due to overcrowding, poor sanitation, low economic state, and lack of awareness among IDPs. Parasitic infestations were the most frequent infectious skin diseases in this study (31.7%), scabies were the most prominent parasitic skin infections (13%). The result differs from other studies in Libya (4) and in Spain (13) in which fungal infections were the predominant skin infectious disorders. The higher frequency of parasitic infestations might be due to poor sanitation and warm climate in Diyala province, the predominance of scabies attribute to several environmental factors such as overcrowding, delay or inappropriate treatment of primary cases, and lack of public education, in addition to poor economic state that prevail in those displaced patients which are ideal for spreading of mite from person to other. Similarly, viral infections were the second most frequent infectious skin diseases (24.4%), molluscum contagiosum was the most commonly seen infections (14.2%) among displaced patients. These accords with the findings of Mohammed's study conducted in Al-Najaf (14), but study in Chad (12), had reported a significant low result (0.7%) of molluscum contagiosum infection among displaced patients. Dermatitis of different types was the second most common category of skin disorders encountered among displaced patients (18.3%), which might be due to the extreme climate in Diyala, this seasonal variation may increase the incidence of skin diseases especially dermatitis. this result consistent with those published previously from Libya (4) and in Chad (12), but disagree with previous studies in displaced persons in Spain (13) and Afghan (15), where it was found that dermatitis was the commonest category of skin disorders encountered among displaced patients. Different disorders are associated with different times of life, in this study infectious diseases correlate with the age groups with high significant difference among the age groups (P-value is 0.00001). The age group most frequently represented was (1-10) years (35.3%). This result agrees with population based study in Nebal (6), in which the prevalence was higher significantly among children than among

adults, but this result disagrees with those published previously among displaced people in Libya (4), in that the most frequently represented age group was the adults constitute (51.8%) of all displaced patients. In the present study, the frequency of skin diseases was higher among females (70.7%) than among males, male:female ratio was (1:2.4), which may reflect the sex distribution of IDPs in the area, and might attributable to the high awareness of females concerning skin diseases and esthetic appearance. Controversy, many males suppose that these diseases are trivial and they do not need medical care. This result consistent with those in Libya (4) in Chad (12), and in Spain (13). The majority of patients who presented for consultation at Baqubah teaching hospital were from the urban area (70.7%), and fewer numbers of patients who presented for consultation were from rural areas (24.4%) and to lesser extent from the camps (3.6%). The low rate of displaced patients who lived in camp and presented for consultation was due to the presence of health organizations centers closed to them, and those patients who lived in rural areas don't consult for their minor skin diseases, they are lived in remote area from the center. Those patients who might be poor residents and less mobile were unable to consult Baqubah teaching hospital; therefore, the actual prevalence of this study must be regarded as a minimum rate. This result disagrees with study in Iraq (10), in this population based study, a survey of all patients in both rural and urban areas was conducted, the prevalence skin diseases among patients lived in rural areas were higher than among those who lived in urban areas. This may reflect the difficult mobilization and remoteness of the clinical center for the displaced patients from the rural areas and camps. The frequency of infectious skin diseases was much greater in displaced patients with low economic status (69.4%) than high economic status (30.6%), this might be due to overcrowding, inadequacy of safe water, and poor sanitation. This agrees with population based study in Iraq (10) and in Basrah (16), and in Egypt (8). Most of displaced patients have skin diseases of (1-6) month duration, the longer duration of skin diseases the more negative impact on IDPs quality of life, and consequently more burden on the country's economy. A high rate of the displaced patients hadn't visit a health care provider or received treatment for the medical condition related to skin diseases (57.3%), as most of the IDPs have low economic status (87.8%). There were significant associations between economic status and having seen a health care provider, the result was highly significant (P-value is 0.001246). Lack of awareness and the lack of availability of free dermatological care were the main causes for hindrance receiving the treatment. This study agrees with a study on Arabic American (17) in that whether or not the patients were able to consult a

dermatologist was dependent on their economic status. There were significant associations between duration of illness and having seen a health care provider, the result was highly significant (P-value is < 0.00001), as the severity and the burden of the illness increase making the patients seek for medical care. There is also an association between crowding index and infectious diseases (P-value is 0.05), as the majority of IDPs in this study were living with a household crowding index of more than two persons per room (81.7%). The higher rate of skin infections in crowded houses in this study accords with the findings in a population based study in Erbil (11), Basrah (16), and in Egypt (8), as overcrowding encourages the spread of infectious agents. The high significant association between crowding index and papulosquamous diseases might be due bad living conditions neglect and lack of therapy. This result agrees with other findings in Erbil (11), Mosul (18), and Turkey (19). Health education on the preventive measures of frequent skin infections could control these diseases. Offer a free consultation clinic and treatment for IDPs with frequent visit of health care providers as mobile clinics to rural areas and camps. Further community based studies are essential to give the full picture of skin problems among IDPs.

Authors' contributions:

Naseer Kareem Alwan is Responsible for Collecting, Analyzing and Writing the Manuscript. (Study Conception, Study Design, Acquisition of Data Analysis, and Interpretation of Data of Manuscript). Shahab Ahmed Shakir and Hayder Hameed Waheeb (Supervisors): Critical Revision.

References:

1. Iraq: Crisis Update - October 2015 [Internet]. Medecins Sans Frontieres (MSF) International. 2017 [cited 23 December 2017]. Available from: <http://www.msf.org/article/iraq-crisis-update-%E2%80%93-october-2015>
2. REACH. Comparative Multi-Cluster Assessment of Internally Displaced Persons Living In Camps [Internet]. Iraq; 2017 p. 2-25. Available from: http://www.reachresourcecentre.info/system/files/resource-documents/iraq_report_multi_cluster_assessment_of_internally_displaced_people_in_camps_july_2017.pdf
3. Human Rights Council. Report of the Special Rapporteur on the human rights of internally displaced persons on his mission to Iraq [Internet]. United Nations; April 2016 p. 3-19. Available from: http://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/a_hrc_32_35_add.1.pdf
4. Elfaituri SS. Skin diseases among internally displaced Tawerghans living in camps in Benghazi, Libya. *International Journal of Dermatology*,

- 2015;55(9):1000-4.
5. Government of Iraq, World Health Organization. Iraq: EWARN & Disease Surveillance Bulletin [Internet]. reliefweb; 2016 p. 1-7. Available from: <https://reliefweb.int/report/iraq/iraq-ewarn-disease-surveillance-bulletin-2016-epidemiological-week-48-reporting-period>
 6. Shrestha D.P, Gurung D, Rosdahl I. Prevalence of skin diseases and impact on quality of life in hilly region of Nepal. *Institute of Medicine Journal*, 2012;3(34):44-9.
 7. Diyala Governorate Profile, [Internet]. Ncciraq.org. 2016 [cited 23 December 2017]. Available from: https://www.ncciraq.org/images/infobygov/NCCI_Diyala_Governorate_Profile.pdf
 8. Yamamah G.A., Emam H.M., Abdelhamid M.F, Elsaie M.L., Shehata H, Farid T., et al. Epidemiologic study of dermatologic disorders among children in South Sinai Egypt. *International Journal of Dermatology*, 2012;51(10):1180-5.
 9. Abd Al Hassan A. The pattern of skin diseases in Karbala city: A retrospective study. *QMJ*, 2011;7(12): 117-28.
 10. Al Samarai A. Prevalence of skin diseases in Iraq: a community based study. *International Journal of Dermatology*, 2009;48(7):734-9.
 11. Mohammed K. Prevalence of skin diseases in rural Erbil: A community-based study. *Zanco Journal of Medical Sciences*, 2012; 16(1):45-51.
 12. Ismael A, and ElGilany A. Pattern of skin diseases among Central African refugees in Chad. *TAF Preventive Medicine Bulletin*, 2015;14(4):324.
 13. Albares M, Belinchon I, Ramos J, Sanchez-Paya J. and Betlloch I. Epidemiologic study of skin diseases among immigrants in Alicante, Spain. *Actas Dermo-Sifiliograficas (English Edition)*, 2012;103(3):214-22.
 14. Mohammed Z. The Prevalence of Skin Diseases in Al-Najaf Governorate. *Der Pharma Chemica*, 2007;9(7):34-7.
 15. NWHO. Free medical camp at AkoraKhattak Afghan refugee camp and NWHO distributed medicine among refugees in Afghan Camp AkoraKhattak, in Pakistan. 2007. (Available at: www.newworldhope.org/health.html Accessed December 31, 2017).
 16. Al-Rubiay K, Al-Rubiay L. Dermatoepidemiology: A Household Survey Among Two Urban Areas in Basrah City, Iraq. *The Internet Journal of Dermatology*, 2006;4(2):1-6.
 17. El-Essawi D, Musial J, Hammad A, Lim H. A survey of skin disease and skin-related issues in Arab Americans. *Journal of the American Academy of Dermatology*, 2007;56(6):933-8.
 18. Abdul-Majeed AZ. Prevalence of skin diseases in Ninevah governorate. M.Sc. thesis. University of Mosul, college of medicine, 2002.
 19. Inanir I, Sahin M, Gunduz K, Dinc G, Turel A, Ozturkcan S. Prevalence of Skin Conditions in Primary School Children in Turkey: Differences Based on Socioeconomic Factors. *Pediatric Dermatology*, 2002;19(4):307-11.