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Burden of Dermatological Disorders in Remote Hilly Region of Western Nepal: A Community Health Camp-based Study

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Abstract Population based cross-sectional surveys depicting the magnitude of dermatological diseases among the hilly population in Nepal, where limited resources are available for skin care. The study aimed to measure prevalence of dermatological conditions and associated factors in remote hilly region of Nepal. The cross sectional study was done in September 2014 in a multispecialty medical camp held in remote hilly area of western Nepal to find out the pattern and assess the relation of various demographic factors with the type of dermatological disorders. All the cases were examined by a dermatologist in natural light and a clinical diagnosis was made. 153 cases were examined (total camp cases were 1132), camp prevalence of 13.51%. Patients were from one month of age to 90 years old with mean age of 25.69. The commonest cutaneous diseases encountered were bacterial infections(56/153). Odds ratio of infectious and non infectious disease in current smokers and non-smokers was 1.60. There was no statistically significant relation in type of dermatoses and age group (p=0.55), socioeconomic status (p=0.43), education level (p=0.74), occupation (p=0.24).

Keywords: *cutaneous morbidity, western nepal, health camp*

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1. Introduction

A high prevalence of skin diseases (21–87%) has been reported from developing countries all over the world by World Health Organization (WHO) with significant socioeconomic and behavioral impact [1]. It affects all ages and ethnic groups with significant morbidity through symptoms, disfigurement, disability, reduction in quality of life(QOL) and so on [2]. Mortalities in cutaneous diseases are rare, but may be encountered in severe drug reactions, bullous disorders, metastatic skin cancers etc. Despite the high prevalence of skin disorders in developing countries like Nepal, stake holders have so far not considered it as a significant health problem. Data on cutaneous diseases and contributing factors are helpful in planning and evaluating health related preventive and curative services.

It has been said 'epidemiological studies are the simplest method of studying diseases in humans and many contributions have been made by studies that need only the ability to count, think and implementing an imaginative idea [3].

The annual report of department of health services, Nepal (2011/2012) ranks skin diseases as fourth most common complaint in patients attending outpatients department (OPD) in Nepal [4]. A community based study of 3207 population showed skin diseases prevalence of 20.1% [2]. Whereas, in developed countries like United States skin diseases are reported to be one of the top 15 groups of medical conditions for which health care expenses increased the most between 1987 and 2000, with approximately 1 of 3 person having a skin disease at a given time [4]. These available data suggest that there may be many fold difference in prevalence between developed countries and the poorest.

2. Materials and Methods

This was a cross sectional study, carried out in a two day multispecialty free health camp with the help of eight doctors and fourteen paramedics/support staffs, held in a rural hilly region, Pasgaung village development committee (VDC), about 35 kilometers from Pokhara, 28.30°N 84.22°E in Western Nepal with around 20,000 populations during first week of September 2014. People of surrounding VDCs were informed through local FM radio stations, pamphlets and local social workers two weeks before the health camp. Patients who visited dermatology OPD including the referrals, (153 cases out

of total 1132 camp cases) were taken in the study. In case of patients aged ≤ 15 years accompanying guardians were interviewed.

Permission from local Primary Health Center (PHC) and Institutional Ethical committee's clearance were obtained.

2.1. Methodology

Data were collected in the predesigned, pretested, semi-structured schedule. The performa included socio-demographic factors like age, sex, education, socio-economic factors. Skin examination was carried out in natural light. Investigations, like KOH mount; gram staining and hemogram were carried out by certified lab assistants. Cases needing skin biopsy, electrocoagulation, drainage of abscess, excision of small benign growths/ cysts and extraction of molluscum and milia were carried out in the minor operation theatre in the PHC. Cases like suspected skin tuberculosis, leprosy, cutaneous malignancy etc. needing further investigations and surgical intervention were referred to Fishtail Hospital and Research Center, Pokhara.

2.2. Excluding Criteria

Patients with doubtful diagnosis were excluded from study.

2.3. Sample Size Calculation

In a pilot study done prior to original study showed percentage of infectious diseases were 80%, so with 95 % confidence interval and 10 % allowable error sample size required was 96.

2.4. Statistical Analysis

Statistical analysis was done using Statistical Package for Social Service (SPSS) version 16 and Microsoft Excel.

3. Results

There were 153 cases, examined by dermatologist in natural daylight (total camp cases were 1132), camp prevalence of 13.51%. Patients were from one month of age to 90 years old with mean age of 25.69. General description of study population is shown in Table 1.

Table 1. General description of study subjects

Gender	Number	Percentage
Male	29	17.3
Female	124	82.7
Age group		
0 – 15	86	56.2
16 – 30	16	10.5
31 -45	17	11.10
46 – 60	10	6.5
61 – 75	13	8.5
76 – 90	11	7.2
Literacy		
Illiterate	06	6.3
Primary	66	69.5
Secondary	23	24.2
Profession		
Student	9	9.5
House-makers	34	35.8
Farmers	42	44.2
Job holders	10	10.5
Socioeconomic status		
Lower	23	24.2
Middle	62	65.3
Upper	10	10.5
Tobacco use		
Yes	62	40.5
No	91	59.5

It showed children population i.e. patients aged ≤15 years constituted the maximum number of study population 86/153 (56.2%).

Pattern of skin diseases diagnosed is give in table No 2

Table 2. Pattern of skin diseases diagnosed.

Infectious Dermatoses		No	%	Non-Infectious Dermatoses:		No	%
1	Bacterial infections	46	36.8	1	Dermatitis and eczema	11	39.3
2	Bacterial infections	32	25.6	2	Disorders of skin appendages	9	32.1
3	Viralinfections	27	21.6	3	Papulosquamous disorders	3	10.7
4	Parasitic infections	20	16.0	4	Urticaria and erythema	3	10.7
5				5	Pigmentary disorders	2	7.14
6							
Total		125	100	Total		28	100

Infectious dermatoses were more than non-Infectious group; 125(81.7%) compared to 28(18.3%).Patients with both infectious and noninfectious dermatoses were grouped in to category which was their primary complain. Among the infectious disorders, bacterial infections were most common (46/125) 36.8%, followed by fungal infections (32/125) 25.6%, viral infections (27/125) 21.6% and parasitic infections (20/125) 16.0%and among the non-infectious dermatoses, eczemas and dermatitis were most common (11/28) 39.3% followed by disorders of skin appendages (9/28)32.1%, pigmentary disorders (3/28)10.70%, urticaria in two10.7% and others in two 7.14% patients. Among the studied patients, (62/153)40.5% were current user of Tobacco. There was no relation between type of dermatoses and tobacco use. Contact history was given by 33.2% of the patients. Overcrowding was reported by 58.1% and only twenty five out of 153 (16.13%) reported that they have been treated earlier for their skin disease. There was no statistically significant relation in type of dermatoses and age group, socioeconomic status, education level, and occupation.

There was no statistically significant relation in type of dermatoses and age group (p=0.55), socioeconomic status (p=0.43), education level (p=0.74), occupation (p=0.24) measured by chi square test.

4. Discussions

Type of skin diseases vary widely and are influenced by demography, socio-economic, religious and ecological factors. Information on skin diseases in Nepal are rare and sketchy. In the study, female patients outnumbered the males (82.7%), as most of the male of that area were out of Nepal for their jobs abroad. infectious dermatoses were found to be more common, similar to one of the oldest publication about skin diseases in Nepal by Burgoyne JS [6]. Similar findings reported by Indian study in Imphal, India [7]. Whereas in study by Shrestha et al [8], In a community level, it were noninfectious dermatoses, mostly eczemas and pigmentary disorders and Rao et al [9], in India where 57.07% had non-infectious dermatoses compared to 43.41% cutaneous infections. Another Indian study by Juno et al had similar findings [10]. Similarly Emmanouil K S et al [11], in Mediterranean island found allergic dermatitis and urticaria (35.7%) as most common cutaneous disorder followed by infectious diseases (26.1%). and insect bites (10.2%). Proportion of Insect bite in our study was negligible, supporting the evidence that diseases pattern in a specific population is usually determined by ecological factors. Among Infectious group bacterial infections were the commonest type, followed by fungal infections. In contrast to one of the pioneer study in Nepal by Walker et al [12] where, point prevalence of skin abnormalities was 62.2% and the most prevalent were dermatophyte infections (11.4%) and pityriasis versicolor (8.9%) also fungal skin diseases were reported in top 10 most prevalent diseases worldwide in 2010 [13]. We used Modified Kuppuswamy's Socioeconomic Scale to classify study population in to upper, middle and lower class [14]. The study showed that infectious dermatoses were common in those who had positive family history and poor standard of living, which is supported by their pathogenesis. Some of the study findings were also supported by WHO report that three main factors have generally been responsible for the high prevalence and incidence of common skin diseases in developing areas, a low level of hygiene, overcrowding and climatic factors. The study also supports the statement "Three main factors that impact state of health in Nepal are its high rate of poverty, illiteracy, and its physical geography" [15]. Jha et al [16], reported in their study among OPD visits in Nepal that skin diseases had statistically significant pattern of seasonal variations supporting role of ecological factors. Only 16.13% of the patients reported that they have consulted health care workers for their skin problem, the findings were similar to another study in mountains of India [17].

At the global level, skin conditions were the fourth most common cause of nonfatal disease burden, which strongly support the argument of including skin disease prevention and treatment in future global health strategies [12]. Among Noninfectious group dermatitis and eczemas were more common which are similar to other studies [7,8,9,11,12].

5. Conclusion

The findings of this study highlight the fact that along with medical treatment, education, quality of living, allocation of resources may help us to bring down the prevalence of skin diseases. This type of study would help in planning strategy and allocation of resources in rural hilly regions of Nepal.

Declaration of Conflicting Interests

The authors declare that there is no potential conflicts of interest with respect to the research, authorship and /or publication of this article.

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