Prevalence of skin diseases in an urban slum area

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Introduction

A large number of people in the community suffer from diseases of the skin[1]. Some of them think it is unnecessary to seek treatment, and a fair number resort to self care[2]. Studies show that skin problems account for about 15% of the workload in ambulatory primary medical care[3].

The health status of the skin of the population at large and the needs of the community have not been studied so far. The available data refer to the patterns of consulting for skin disease at the hospital specialist skin clinics[4,5].

An effort was made by the authors in 1998 to study the disease frequency in a periurban and rural community in the Piliyandala area[1]. The present study was subsequently undertaken with a view to determining the prevalence of skin disease in an urban area.

The urban area was an overcrowded slum but had close access to specialist services in a main general hospital or in the private sector whereas the rural community where the houses were situated far apart had more limited access to such services.

Method

A slum area within the municipality of Colombo (ward 44) named Siddarta Para within easy reach of Colombo South Teaching Hospital and National Hospital Sri Lanka was selected for the study. Here the residents lived in tenements situated very close to each other. It was decided to survey the whole tenement garden on a sunday when people were expected to be home. The youth leaders of the village and the public health staff comprising of a nursing sister, health wardens and midwives were asked to inform the household members to remain at home for that day for the purpose of the survey. The local community hall was improvised to serve as clinic premises. For each household a standard questionnaire was used to gather information on the total number of people in the household and their socio-demographic data. This questionnaire was administered by the medical students and the medical graduates awaiting internship. They visited the households accompanied by the public health staff. They also directed the patients who had skin lesions to the clinic. At the clinic dermatologists examined the patients and recorded the diagnosis on a separate form. To facilitate these entries a simple and easy to use classification of skin diseases made using ICD10 as a guide was used as a reference. All patients were examined from waist upwards and knees downwards. The rest of the body was examined only if the patient reported a lesion. All lesions were recorded irrespective of whether treatment was required or not.

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Those who needed followups were reffered to the closest skin clinic.

Collection of data took approximately 7 hours. Ten 3rd year medical students, 12 MBBS graduates awaiting internship and 12 medical officers took part in the survey in addition to the investigators.

All data were entered into the computer and analysed using Epiinfo and SSPS packages.

Results

Characteristics of the study population

There were 1556 people residing in the 362 households that were surveyed. No one refused examination. Since the survey was started early in the day nearly all residents were available at the time of the visit. The study population included a range of persons from infants to the elderly >65 years. There were 743 males and 813 females.

Of this group, 512 people had skin lesions and 760 diagnoses were recorded. The maximum number of diagnoses recorded for a person was 4. Out of the 512 patients 300 (65.4%) had only one skin disease and a higher percentage of females had more than one lesion when compared to the males. But when pediculosis was eliminated this difference was not seen. There was a higher percentage of female skin patients 64.5% as compared to males 35.5%. The prevalence of skin disease was 32.9%.

The results show that this is a mixed a Sinhala 41% and Tamil 48% community where 47% were married and 51% were single.

60% had at least a secondary education, only 13% had not gone to school.

The age distribution selected for this study corresponds to certain vulnerable groups such as the under five age group, the elderly (>65yrs), schoolgoing ages (6-10), the adolescents (11-20), adults (21-35), and the middle aged (36-65). There were no significant differences in the total prevalence in the different age groups under consideration. Among the females, the highest prevalence of skin disease was seen in the 11-20 age group and among the males, in the elderly group.

The diseases were categorized into 19 broad groups and further subdivided into diseases of high, low and very low prevalence as shown in Tables 2, 3 and 4.

Highest prevalence was seen with fungal infections (11.4%) and this accounted for 23% of the total diagnoses. However the majority of fungal infections were due to Pityriasis Versicolor (6. 3.%). The dermatophytoses accounted for only 4%. The two common skin diseases Pityriasis Versicolor and Seborrhoeic Dermatitis (which included *Scalp dandruff) accounted for 15.4% prevalence. Eczemas accounted for 15.3% of the diagnoses and had a prevalence of 7.5%. While the prevalence of parasitic diseases was 7.8%.

Discussion

Prevalence of skin disease

This study was an attempt to determine the differences in prevalence of skin diseases in an urban area as opposed to a periurban\ rural area and to identify a true picture of the disease burden in the country until larger studies including the whole country could be undertaken.

32.9% of the population surveyed had a skin disease (Table 1). This is rather a low figure compared to the Piliyandala study (PS) where 47.6% had a skin disease, but these results compare well with the large community studies in the UK and the USA that recorded 20-30% prevalence[6,7]. Similar figures were reported by Gibbs S in rural Tanzania[8].

The low figure of 32.9% seen in this study as compared to the periurban study (47.6%) is probably the result of utilisation of health services. More people admitted to using health care services as the first line treatment rather than resort to self care as in the Piliyandala study.

An increased morbidity in the females after exclusion of pediculosis was found in this study too as in the PS (x 25.9 df=1 p<.00001). Reason for this is unknown and needs further studies in different parts of the country.

Table 1. Prevalence of skin disease by age and sex

Age (in years)	*Male*			*Female*			*Total*		
	1	2	3	1	2	3	1	2	3
0-5	76	22	28.9	78	31	39.7	154	53	34.4
6-10	71	18	25.4	79	37	46.8	150	55	36.7
11-20	146	39	26.7	172	84	48.8	318	123	38.7
21-35	205	46	22.4	222	96	43.2	427	142	33.3
36-65	219	47	21.5	237	77	32.5	456	124	27.2
>65	26	10	38.5	25	05	20.0	51	15	29.4
Total	743	182	24.5	813	330	41.0	1556	512	32.9

1 = Total number of persons
2 = Number with skin lesions
3 = Prevalence %

Table 2. Skin diseases of high prevalence

Disease	*Prevalence*		*Proportion*
	No.	*(%)*	*(%)*
Fungal Infections	**178**	**11.4**	**23.4**
Tinea of scalp	9	0.6	1.2
Tinea of body	33	2.1	4.3
Tinea of feet	14	0.9	1.8
Pity. versicolor	98	6.3	12.9
Other	24	1.5	3.2
Dandruff	**107**	**6.9**	**14.1**
Seb. dermatitis	**35**	**2.2**	**4.6**
Dandruff+Seb dermatitis	142	9.1	18.7
Parasitic infestations	**121**	**7.8**	**15.9**
Scabies	16	1.0	2.1
Pediculosis	104	6.7	13.7
Other	01	0.1	0.1
Dermatitis/Eczema	**116**	**7.5**	**15.3**
Contact dermatitis	51	3.3	6.7
Photo dermatitis	9	0.6	1.2
Atopic dermatitis	17	1.1	2.2
Other Dermatitis/Eczema	39	2.5	5.1
Acne vulgaris	**34**	**2.2**	**4.5**

Table 3. Skin diseases of low prevalence

Disease	*Prevalence*		*Proportion*
	No.	*(%)*	*(%)*
Urticarias	**25**	**1.6**	**3.3**
Acute Urticaria	09	0.6	1.2
Papular urticaria	16	1.0	2.1
Benign Tumours	**20**	**1.3**	**2.6**
Seb keratosis	16	1.0	2.1
Other	04	0.3	0.5
Pigmentary Disorders	**15**	**1.0**	**2.0**
Vitiligo & other leucodermas	02	0.1	0.3
Hyperpigmentation	13	0.8	1.7
Icthyosis	**21**	**1.3**	**2.8**

Table 4. Skin diseases of very low prevalence

Disease	*Prevalence*		*Proportion*
	No.	*(%)*	*(%)*
Viral infections	**14**	**0.9**	**1.8**
Warts	09	0.6	1.2
Molluscum contagiosum	05	0.3	0.7
Bacterial infections	**11**	**0.7**	**1.4**
Acute	04	0.3	0.5
Leprosy	0.1	0.1	0.1
Other	06	0.4	0.8
Hyperkeratotic disorders	**11**	**0.7**	**1.4**
Follicular hyperkeratosis	02	0.1	0.3
Palmo plantar keratoderma	09	0.6	1.2
Hair and nail disorders	**11**	**0.7**	**1.4**
Pruritus	**07**	**0.5**	**0.9**
Alopecias	**06**	**0.4**	**0.8**
Psoriasis	**05**	**0.3**	**0.7**
Lichen planus	**02**	**0.1**	**0.3**
Erythematous papulo squamous eruptions	**02**	**0.1**	**0.3**
Miliaria	02	0.1	0.3
Connective tissue disorders	**01**	**0.1**	**0.1**
Miscellaneous	**18**	**1.1**	**3.0**

Prevalence of different diseases

The highest prevalence due to fungal infections compare well with the results of the Piliyandala study except that the prevalence of Pityriasis Versicolor was higher in Piliyandala (10.5%). The high prevalence of fungal infections is due to the warm humid climate of the country and the lifestyle of the people. They are in constant contact with the soil, and travel about in packed buses in addition to living in overcrowded conditions.

The proportion of the disease burden when Pityriasis versicolor is excluded (10.5%) compares well with the Sri Lankan hospital clinic attendance pattern where consultations for fungal infections was 12.8% of the total cosultations (Table 6).

Table 5. Prevalence of different diseases by sex

Disease	*Sex of the patient*				*Total*	
	Male		*Female*			
	No.	*%*	*No.*	*%*	*No.*	*%*
Dermatitis/eczema	46	6.2	70	8.6	116	7.5
Seborrhoiec dermatitis	10	1.3	25	3.1	35	2.2
Dandruff	25	3.4	82	10.0	107	6.9
Fungal infections	75	10.1	103	12.7	178	11.4
Bacterial infections	06	0.8	05	0.6	11	0.7
Viral infections	09	1.2	05	0.7	14	0.9
Parasitic infections	18	2.4	103	12.7	121	7.8
Pigmentary disorders	05	0.7	10	1.2	15	1.0
Psoriasis	02	0.3	0.3	04	0.5	0.3
Acne	17	2.3	17	2.1	34	2.2
Lichen planus	01	0.1	01	0.1	02	0.1
Icthyosis	05	0.7	06	2.0	21	1.3
Erythematous papulo squamous eruptions	00	0.0	02	0.2	02	0.1
Urticaria	09	1.2	16	2.0	25	1.6
Hyperkeratotic disorders	04	0.5	07	0.9	11	0.7
Pruritus	03	0.4	04	0.4	07	0.5
Connective tissue disorders	00	0.0	01	0.1	01	0.1
Alopecias	02	0.3	04	0.4	06	0.4
Benign tumours	04	0.5	16	2.0	20	1.3
Hair and nail disorders	04	05	07	0.9	11	0.7
Miscellaneous	06	0.8	12	1.4	18	1.1
Total	251	33.8	509	62.6	760	48.8

Table 6. Comparsion of the distribution of some skin diseases in the community with hospital clinic attendance patterns

Disease	Rural Com. Piliyandala 1997 Prev.%	Pro.% Attend.%	Urban Com. Kirillapone 1999 Pro.%		Hospital Clinic Matara 1992 Prev.%
Eczema	9.58	12.0	7.5	15.3	42.63
Fungal infections	14.34	17.9	11.4	23.4	12.89
Vitiligo	1.22	1.5	0.1	0.3	5.38
Psoriasis	0.44	0.6	0.3	0.7	4.50
Acne	5.98	7.5	2.2	4.5	2.91
Benign tumours	6.70	8.4	1.3	2.6	2.03
Leprosy	0.06	0.1	0.1	0.1	1.23
Scabies	0.17	0.2	1.0	2.1	0.88
Connective tissue disorders	0.06	0.1	0.1	0.1	0.35
Miliaria	2.05	2.6	0.1	0.3	0.09

Seborrhoeic dermatitis was found to be 2.2%. Scalp dandruff accounted for 6.9%. The total prevalence of both diseases was 9.1%. In the earlier study seborrhoeic dermatitis was not listed separately. However in both studies the prevalence of Scalp dandruff was high and a higher percentage of females suffered from it.

Prevalence of eczema was 11.4% but, nearly half (42.6%) the consultations in a hospital clinic are for eczematous conditions. This may mean lack of expertise at the primary level in treating this disease or utilization of specialist clinics due to the availability of expensive steroid creams. Also, the majority of patients with eczema may be seeking treatment while people are of the view that other skin problems do not need medical care.

Prevalence of contact dermatitis was 3.3% similar to what was found in the Piliyandala study (2.6%). However as expected a female preponderance was found in this study which was not found in the earlier study. But this difference was of borderline significance ($\times$ 3.28 df1 $p < .07$). Perhaps the urban women are more exposed to toxic and irritant substances in their day to day work. Prevalence of atopic dermatitis was low (1.1%). A markedly low prevalence of atopic dermatitis was seen in both rural and urban areas compared to studies from the developed countries[9]. This aspect needs further investigation.

A high prevalence of parasitic diseases was found in 7.8% and this was due to the presence of pediculosis which was high in women.

There was only one case of Leprosy and even this patient was under treatment.

Seborrhoeic keratosis and skin tags which were classified as benign tumours were less common, 1.3% than in the PS. As in Piliyandala, malignanat tumours were not found.

Pigmentary disorders also accounted for only 1% as against the 4.32% at Piliyandala and the prevalence of Vitiligo was even lower 0.1% (1.22%). The much higher incidence seen in the Matara

hospital clinic could be due to the fact that treatment was sought by a large number of people with vitiligo at this clinic. In Sri Lanka where there is no system of registration people do seek treatment from various specialists for chronic ailments with little or no cure for their diseases.

Palmoplantar keratodermas that were the major problem among hyperkeratotic disorders at Piliyandala was not found in Kirillapone, probably because females here are used to wearing shoes and sandles and living in a comparatively dry area.

Prevalence of scabies in this community too was low as in Piliyandala. This is because sulphur ointment had been freely distributed by the public health midwives of the area some years back and majority of people had used it.

The low prevalence of Psoriasis found (0.3%) was similar to the Piliyandala study as well as that of the community survey by Gunawardene D in 1960, although the general prevalence in most populations is 1-3%[10]. The skin clinics in the country have recorded an attendance pattern ranging from 3.1-7.3% but Psoriasis accounted for only 0.7% of total burden of disease in the study. This again is probably a reflection of health seeking behaviour rather than incidence. Patients tend to seek treatment from different clinics at the same time for this condition hoping for a cure.

Conclusions

The overall prevalence of skin diseases is high in this community. A large majority had Pityriasis Versicolor and /or Seborrhoeic dermatitis.

Fungal infections followed by Parasitic diseases and Dermatitis were found to be the commonest problems.

Prevalence of atopic dermatitis, contact dermatitis, leprosy and psoriasis were similar to that found in the Piliyandala study.

There were no malignant tumours.

Prevalence of Scabies is low in this community.

Sex was a determinant for a large majority of skin diseases.

Recommendations

Continuing medical education programmes for primary care physicians on the management of the highly prevalent skin conditions would benefit the society.

Health education and availability of topical applications at the primary health care level for common skin problems would improve the quality of life for these people and also help to eradicate certain skin problems from the community.

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