Paper

Prevalence of skin diseases in suburban Sri Lanka

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Abstract

Background In Sri Lanka the only available measures of disease frequency related to skin disorders are from hospital-based clinic studies. They reflect only the patterns of clinic attendance, and the actual prevalence of skin diseases in the community is unknown. The main objective of this study was to determine the prevalence of skin diseases in a selected area.

Methods A household survey based on health interviews and clinical examination was conducted over a period of 4 months. 418 households were selected for modified cluster sampling from predetermined areas in Piliyandala.

Results There were 1806 people residing in the 418 households surveyed. 894 cases were identified, of which 34 people could not be traced for clinical examination. 33 households did not have anyone with a skin lesion. The prevalence of skin disease was 47.6 %. Fungal infections, followed by dermatitis, were found to be the commonest problems. There was only one case of leprosy. Psoriasis was found to be of low prevalence.

Conclusions The overall prevalence of skin disease was high in the community that we surveyed. There were marked differences between community prevalence and hospital dermatology clinic attendance data for a number of skin diseases.

Introduction

An analysis of 35 000 consultations collected from 8 private practice centres in 1992, showed that 12% of all consultations were for diseases of the skin (1). A percentage of 15 was reported from a study in 1985 on outpatient attendance at the state hospitals (2). Some patients with skin disease prefer traditional methods of treatment (3). The actual burden of skin disease in the community is not known. The only data hitherto available in Sri Lanka are based on the patterns of skin disease seen at the hospital specialist clinics (4,5). As indicators of morbidity, these statistics may have the merit of diagnostic accuracy, but are unrepresentative. They are also influenced by a variety of factors such as the availability and accessibility of treatment facilities in specialist clinics, severity of the disease, and beliefs in the community about causative factors and the efficacy of traditional remedies. Hospital attendance only provide numerators, and the differences between the healthy and the sick cannot be assessed.

Methods

A cross-sectional household survey was conducted using interviews and clinical examination. The study was carried out in four phases. Five villages belonging to the project area of the Faculty of Medical Sciences of the University of Sri Jayawardenepura were selected for the study.

The villages have 6000 households and a population of 35 000. Eight locations were selected to include rural and semi-urban areas. It was decided to survey a sample of 384 households on a presumptive prevalence of 50% at household level, plus 10% households to account for non-response. Sundays and Poya days were selected for the survey as people are usually at home on public holidays.

A questionnaire was designed to record socio-demographic data, diagnosis of skin lesions and health utilisation patterns. Using the International Classification of Diseases 10 as a guide, a simple classification of skin diseases was devised. A similar guide to health utilisation patterns was also made for use by interviewers.

Public Health Midwives and medical students were selected and trained as research assistants. Questionnaires were pretested and a pilot study was done before the survey, which was from February to May 1997. On the day of the survey the medical students visited the selected households with the midwives. Two students covered 10 to 12 households, and recorded the socio-demographic data of each household. Residents who reported skin lesions were directed to the nearby clinic. All other members of each household were questioned by the

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students using a checklist, examined by them, and those with skin disease were referred to the clinic. The information obtained by medical students was checked by the investigators, who visited every fourth house.

At the clinic all patients were examined from waist upwards and knees downwards. Other areas were examined in relevant cases. The diagnoses were recorded by dermatologists, and other investigators recorded the health utilisation patterns. All patients were treated at the clinic or referred to hospital for follow up.

The data were analysed using the Epi info and SPSS Packages.

Results

Characteristics of the population

There were 1806 people residing in 418 households. The study population included a range of people from infancy to the elderly. There were 907 males. The study area is a predominantly a Sinhala Buddhist one, where 79.8% had at least a secondary education. 48% were married. Average monthly income shared among 5 residents was about Rs. 4500, and 88% lived in permanent houses.

The research assistants identified 894 people with skin lesions but only 860 patients were examined by the dermatologists, as 34 were non-respondents. There were no skin problems in 30 households (7.1%).

Prevalence of skin disease

Of the people surveyed 47.6% had at least one skin disease. The maximum number of diagnoses recorded for a single person was six. 446 had only one skin disease. The prevalence by age and sex is shown in Table 1. Among the females, the highest prevalence of skin disease was seen in the elderly, and among the males, in those under 21 years.

Prevalence of different diseases

The diseases were categorised into 20 broad groups as shown in Tables 2 and 3. Table 4 shows the prevalence by age for common skin diseases. The highest prevalence was of fungal infections (14.34%), accounting for 18% of all diagnoses. The majority of fungal infections were due to *Pityriasis versicolor* (10.5.%). The dermatophytoses accounted for only 4%. There were no deep fungal infections. The highest prevalence was in the 10 to 20 year group (Table 4).

Table 1. Prevalence of skin disease by age and sex

Age (years)	*Male*			*Female*			*Total*		
	1	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**
5 - 0	107	61	57.0	94	56	59.6	201	117	58.2
6 - 10	86	30	34.9	71	28	39.4	157	58	36.9
11 - 20	159	85	53.5	157	89	56.7	316	174	55.1
21 - 35	259	66	25.5	277	171	61.7	536	237	44.2
36 - 65	259	73	28.2	267	163	61.0	526	236	44.9
>65	37	12	32.4	33	26	78.8	70	38	54.3
Totals	907	327	36.0	899	533	59.3	1806	860	47.6

1 = Total number of people

2 = Number with skin lesions

3 = Prevalence (%)

Table 2. Skin diseases of high prevalence

Disease	*Prevalence*		*Proportion*
	Number	*(%)*	*(%)*
Dermatitis/eczema	**173**	**9.5**	**12.0**
Contact dermatitis	48	2.6	3.3
Photo dermatitis	20	1.1	1.4
Atopic dermatitis	3	0.1	0.2
Other	36	5.6	7.1
Seborrhoeic dermatitis	**218**	**12.0**	**15.1**
Fungal infections	**259**	**14.3**	**17.9**
Tinea of scalp	2	0.1	0.1
Tinea of body	43	2.3	3.0
Tinea pedis	22	1.2	1.5
Pityriasis versicolor	190	10.5	13.1
Other	2	0.1	0.1
Benign tumours	**121**	**6.7**	**8.4**
Seborrhoeic keratosis	83	4.6	5.7
Skin tags	17	0.9	1.2
Other	21	1.1	1.5
Acne vulgaris	**108**	**5.9**	**7.5**
Hyperkeratotic disorders	**77**	**4.2**	**5.3**
Follicular hyperkeratosis	3	0.1	0.2
Palmo-plantar keratoderma	68	3.7	4.7
Other	6	0.3	0.4
Pigmentary disorders	**78**	**4.3**	**5.4**
Vitiligo	22	1.2	1.5
Hypomelanosis	9	0.5	0.6
Hyperpigmentation	47	2.6	3.3
Erythematous papulosquamous eruptions	**67**	**3.7**	**4.6**
Pityriasis rosea	2	0.1	0.1
Miliaria	37	2.0	2.6
Pityriasis alba	27	1.5	1.9
Erythroderma	1	0.1	0.1
Ichthyosis	**64**	**3.5**	**4.4**
Ichthyosis	59	3.2	4.1
Xerosis	5	20.2	0.3

Table 3. Skin diseases of low prevalence

Disease	*Prevalence*		*Proportion*
	Number	*(%)*	*(%)*
Naevi	**48**	**2.66**	**3.3**
Melanocytic	26	1.44	1.8
Vascular	10	0.55	0.7
Other	12	0.66	0.8
Urticaria	**39**	**2.16**	**2.7**
Acute urticaria	2	0.11	0.1
Papular urticaria	37	2.05	2.6
Alopecias	**38**	**2.10**	**2.6**
Hair and nail disorders	**36**	**01.99**	**2.5**
Viral infections	**36**	**1.99**	**2.5**
Warts	34	1.88	2.4
Molluscum contagiosum	2	0.11	0.1
Bacterial infections	**26**	**1.44**	**1.8**
Acute bacterial infections	23	1.27	1.6
Leprosy	1	0.06	0.1
Other	2	0.11	0.1
Pruritus	**15**	**0.83**	**1.0**
Psoriasis	**8**	**0.44**	**0.6**
Parasitic infections	**7**	**0.39**	**0.5**
Scabies	3	0.17	0.2
Pediculosis	4	0.22	0.3
Connective tissue disorders	**1**	**0.06**	**0.1**
Miscellaneous*	**26**	**1.44**	**1.8**

*eg leg ulcer, bullous eruptions etc

Table 4. Prevalence of common skin diseases by age

Disease	*Age (years)*						*Total*
	0-5	6-10	11-20	21-35	36-65	>65	
Fungal infections	11	8	70	75	85	10	259
Seborrhoeic dermatitis	11	3	49	95	59	1	218
Dermatitis/eczema	18	16	21	39	63	16	173
Benign tumours	2	1	5	36	64	13	121
Acne	0	1	59	43	5	0	108
Pigmentary disorders	12	4	5	13	35	9	78
Hyperkeratotic disorders	3	3	7	26	33	5	77
Erythematous papulo-squamous eruptions	29	9	8	10	10	1	67

Table 5. Comparision of the distribution of some skin diseases in the community with hospital clinic attendance patterns

Disease	*Community prevalence %*	*Hospital clinic (Matara 1992) attendance %*
Eczema	9.58	42.63
Fungal infections	14.34	12.89
Vitiligo	1.22	5.38
Psoriasis	0.44	4.50
Acne	5.98	2.91
Benign tumours	6.70	2.03
Leprosy	0.06	1.23
Scabies	0.17	0.88
Connective tissue disorders	0.06	0.35
Miliaria	2.05	0.09

Seborrheic dermatitis accounted for 12% of the diagnoses, and eczemas for 9.59%, but atopic dermatitis was found to be very low. The highest prevalence of dermatitis was seen in the elderly group (22.8%). Miliaria and *Pityriasis alba* were common in children under 5 years. The prevalence of psoriasis was found to be low (0.44%). The prevalence of parasitic infestations and bacterial infections were also low, and there was only one case of leprosy.

Discussion

The prevalence of skin disease was found to be high in the study population (47.6%). Large community studies in the UK and in USA have reported that 20 to 30% of the population has skin diseases requiring intervention (6,7,8). Similar figures were reported from rural Tanzania (9). However, these studies have recorded only treatable skin disease or included only certain age groups.

In our study about 50% of the people with skin lesions did not think that it was necessary to seek treatment for their problem. More females had skin disease. It has been documented that in England more females consult a General Practitioner for skin problems between the ages of 15 and 44 (10). However, whether the females are more prone to skin disease or whether they are more sensitive about their skin problems has not been studied. In this study the lesions were diligently looked for in the males by the investigators but a few insignificant lesions may have been missed. Even insignificant lesions were pointed out by the females as expected.

The high prevalence of fungal infections is likely to be related to the warm humid climate, and the high prevalence of seborrhoeic dermatitis is due the fact that scalp dandruff was also included under this group. Long hair with lack of evaporation of sweat may predispose to scalp dandruff. It has also been suggested that *Pitrosporum ovale* plays a role in seborrhoeic dermatitis, and that an excess of scaling facilitates the growth of this organism (11).

Eczemas accounted for 12% of the diagnoses with a prevalence of 9.59%, whereas in hospital clinics it was 49%. The prevalence of atopic dermatitis was low compared to studies from other countries (12).

The high prevalence of acne seen in young women in our study is because it tends to persist longer in them. Unlike in the West, acne caused little concern to those who had it, only 2.8% of them being seriously affected by it. The majority thought that treatment was unnecessary. This may account also for the low incidence seen in hospital clinics (2.4%). The comparatively high prevalence of pigmentary disorders noted in our study is probably because post-inflammatory pigmentation is common in the tropical skin. As expected, the highest prevalence was found in the over 65-year group, as a result of progressive reduction of melanocytes generally, and localised proliferation of melanocytes in exposed areas of the skin.

The low prevalence of vitiligo in the community compared to the much higher incidence seen in hospital clinics could be due to the fact that hospital clinic treatment was

sought by the majority with vitiligo. In addition, in Sri Lanka, as people are free to seek treatment at any hospital, there is a tendency for the same patient to visit different clinics for this disfiguring condition. The prevalence of psoriasis that we noted (0.44%) is similar to the figures of the community study done in 1978 (13). It has also been documented that the prevalence of psoriasis is low in Asians (15). The hospital clinic figures, which range between 3.1 and 7.3%, probably reflect the health seeking behaviour rather than true incidence.

Prevalence of scabies in this community was low. This is because sulphur ointment had been freely distributed by the public health midwives of the area some years ago, which the entire community had used.

Leprosy was diligently looked for, and we found only one patient, who was under hospital treatment. This is likely to be the result of the effective social marketing program launched by the Anti-Leprosy Campaign recently to create awareness about leprosy among the public.

Among the urticarias, papular urticaria was found to be a significant problem. In the majority, it was the bites of mosquitos or fleas that caused papular urticaria.

The prevalence of infectious and parasitic diseases was low in this community even though fungal infections had a high prevalence. This possibly reflects on the improving living standards, as well as better management at the primary care level.

This is the first community survey of skin disease in Sri Lanka. We have tried to record here a comprehensive picture regarding prevalence, so that our data could be used as a basis to plan interventions at community level.

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