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# Epidemiological Profile of Patients with Skin Diseases in a Tertiary Hospital in Kathmandu, Nepal: A Cross Sectional Retrospective Study

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## Abstract

**Introduction:** Skin diseases are one of the commonest causes of disability globally. Skin diseases vary with the etiology, season and socioeconomic status. As the socioeconomic conditions are changing, so are the disease patterns.

**Objectives:** To find the hospital prevalence of the different skin diseases and to compare the findings with similar hospital based studies and community based studies done in past in Kathmandu and around the country.

**Materials and Methods:** Outpatient department (OPD) records of Civil Service Hospital from Baishakh to Chaitra of the year 2075 Bikram Sambat were reviewed after ethical clearance from institution review committee and were tabulated using Microsoft excel.

**Results:** Total number of cases were 9886 (4.51% of total hospital attendance). In total 8097 were new cases. There were 4218 -52.1% males and 3879 -47.9% females. Most common diagnosis was eczemas (18.47%), followed by dermatophytosis (15.29%). Eczemas, chronic urticaria, psoriasis and lichen planus were more common in the adult population of more than 30 years, while infections and acne were more common in young adults, 15-30 years, in both the sexes. Tinea was common during summer and so was scabies in males, while in females, melasma peaked in summer and chronic urticaria during spring and winter.

**Conclusion:** The pattern of skin diseases is changing with the time. Diseases of possible allergic and immunologic etiology are increasing and diseases with infective etiology are still a huge burden on society.

**Key words:** Nepal; Pattern; Retrospective study; Skin diseases

## Introduction

Skin diseases comprise the eighth most frequently visited disease in out-patient department (OPD) in Nepal<sup>1</sup> and the 4<sup>th</sup> leading cause of disability globally, as measured in Disability-adjusted life years (DALYs).<sup>2</sup> The occurrence of the skin diseases varies widely depending on the geographic region, season and socioeconomic conditions.<sup>3</sup> Nepal has three different geophysical landscapes; mountains, hills and plains. These places have different climates and thus the different disease trends. The prevalence of skin diseases ranges from 20%<sup>4</sup> in hills to 62%<sup>5</sup> in the terai. Most common dermatoses in hilly regions are found to

be eczemas<sup>4</sup> and pigmentary disorders.<sup>6</sup> While in terai region fungal infection is found to be commonest.<sup>5</sup> Globally burden of disability is highest with eczema.<sup>2</sup> Pattern of skin diseases in medical college hospitals with different climatic regions have observed similar patterns.<sup>7,8</sup> A study based on two decades old hospital data from Kathmandu<sup>9</sup> show different pattern compared to a recent one<sup>10</sup> and so does the one done one decade ago.<sup>11</sup>

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With the changing life-style and urbanization the pattern of diseases change and mostly affect the lower and mid income group.<sup>12,13</sup> Kathmandu is also rapidly urbanizing. Thus we have undertaken this retrospective cross-sectional study to find the patterns of skin diseases in a government owned tertiary center in Kathmandu and compare our findings with similar studies done in past in Kathmandu and around the country.

## Objectives

1. To find the hospital prevalence of the different skin diseases.
2. To compare the findings with similar hospital based studies and community based studies done in past in Kathmandu and around the country.

## Materials and Methods

All the new patients attending our OPD from Baishakh to Chaitra of the year 2075 Bikram Sambat (BS) were included in this study. The diagnosis was mostly clinical, based on detailed history and examination, in cases of doubt pertinent investigations were sent, the record of which were retrieved from the medical records. Clinical diagnoses were made by the two consultant dermatologists and authors; SP and RS. In this study the demographic characteristics such as age, sex and diagnoses were studied and seasonal trends of different skin diseases were also studied. In cases of eczema all cases of allergic and irritant contact dermatitis, atopic dermatitis, seborrheic dermatitis, xerosis eczema and any other itching condition that could not be labelled as a specific diagnosis were retained as eczema. Commonly used diagnostic tools were potassium hydroxide mount, pus culture/sensitivity, skin biopsy for histopathology, patch test, Wood's lamp, serology for STIs and occasionally special tests like Anti-Nuclear Antigen, Direct Immunofluorescence and Immunohistochemistry were also sent. In cases of multiple diagnosis the first diagnosis was recorded. The follow-up cases and cases seen in Emergency were excluded from this study.

After the ethical clearance from the institution review board of civil hospital all the records were reviewed, categorized and tabulated. Frequency and percentages were calculated for all non-parametric variables using Microsoft excel software.

## Results

The total general OPD attendance was 9886 in the year 2075BS, which was 4.51 % of total hospital attendance of 219316. Out of that the new cases whose diagnosis was recorded in the register were 8097, males were 4218 (52.1%) and females 3879 (47.9%) (Table 1).

The commonest reason of OPD visit was eczema (18.47%), males and females were almost equally affected. Dermatophytosis or tinea was the second common disease pattern and by far the most common infective skin disease (15.29%).

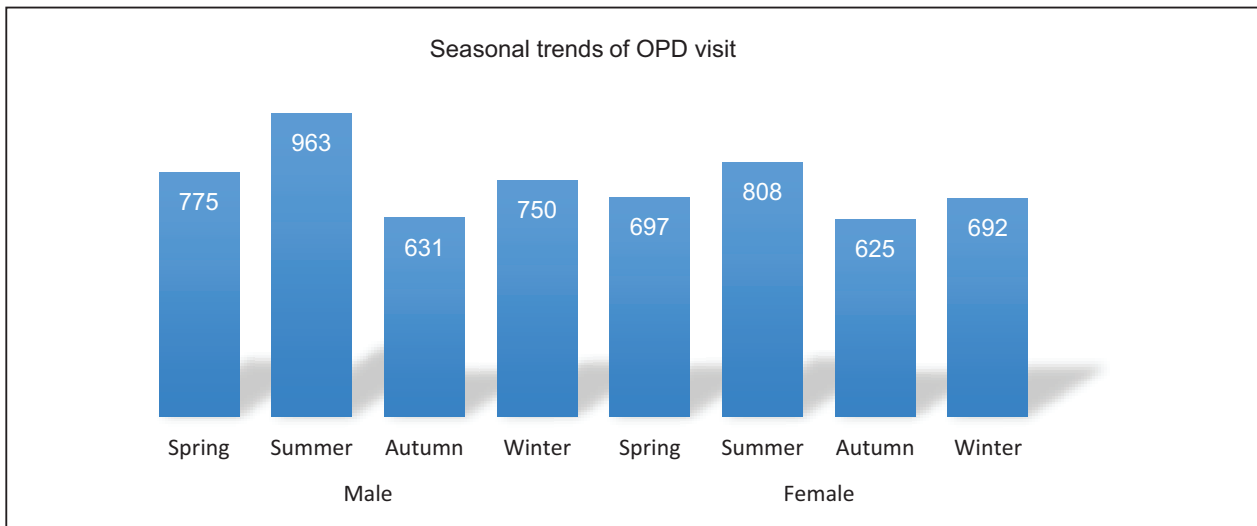
When the frequencies of occurrence were compared between males and females tinea, scabies, psoriasis, non-genital warts, pyodermas and pityriasis versicolor were more common in males, while acne, chronic urticaria, melasma and photodermatitis were more common in females.

Thirteen most common conditions comprised of 73.37% of total diagnoses (Table 2). Eczemas, chronic urticaria, psoriasis and lichen planus were more common in the adult population of more than 30 years. While infections and acne were more common in young adults, 15-30 years, in both the sexes. In geriatric group eczemas were common, while in pediatric group eczemas and infections were similar in occurrence.

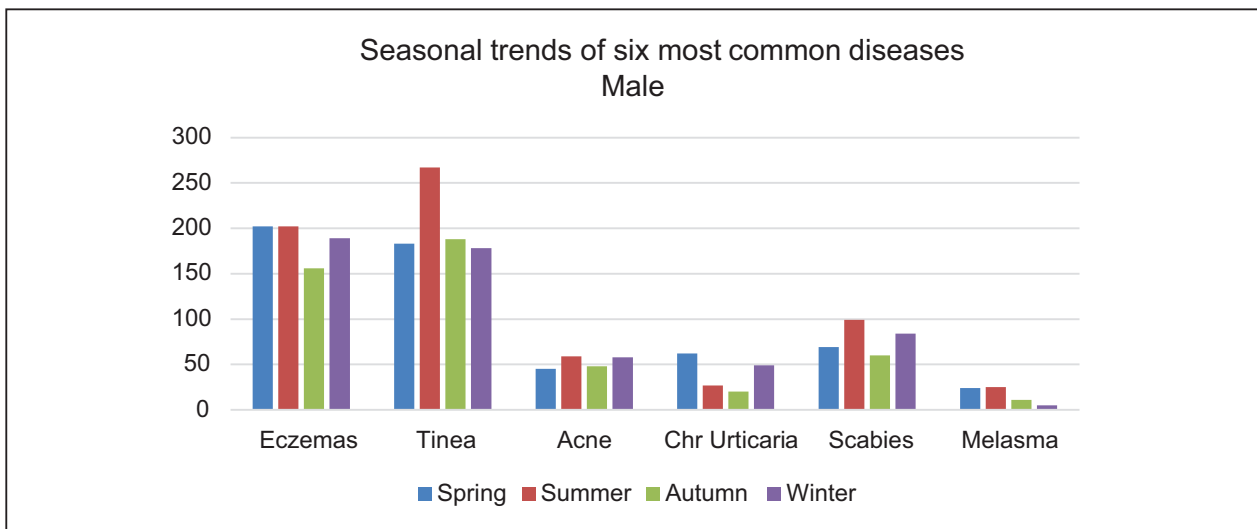
Nepal has four distinct seasons; spring (Falgun, Chaitra and Baishakh), summer (Jestha, Asar and Shrawan), autumn (Bhadra, Aswin and Kartik) and winter (Mangsir, Poush and Magh). Based on the number of cases in different months of the year, we studied the seasonal trends of the skin diseases as well.

Summer had the most OPD visits while autumn had the least number in both sexes. Autumn is the season of festivals in Nepal, so the lowest number of OPD visits were seen during the autumn (Figure 1).

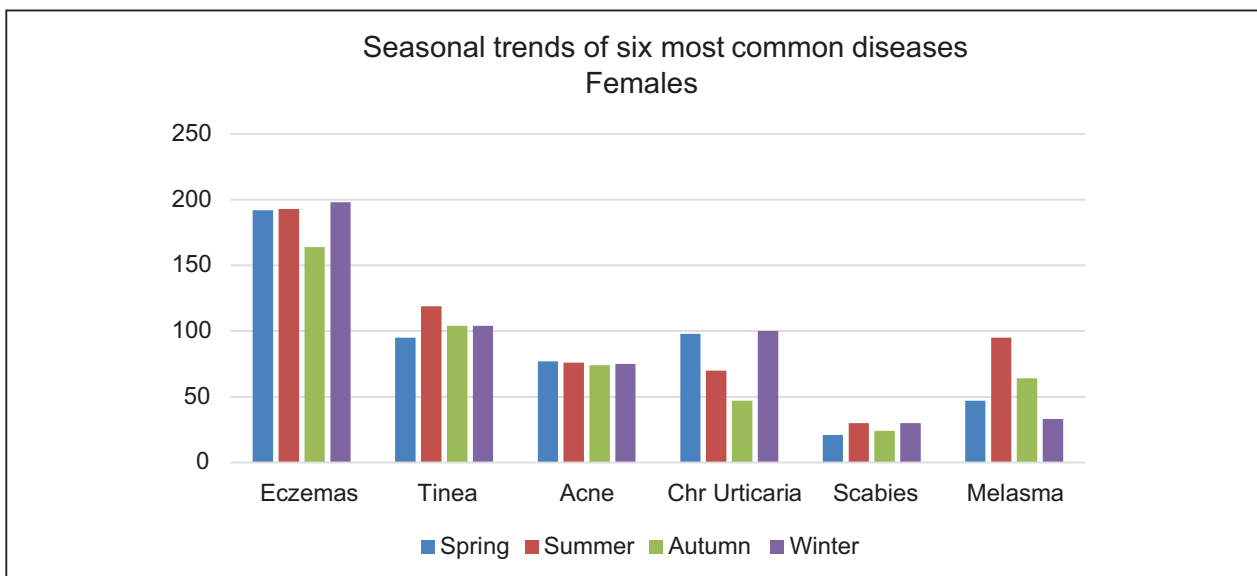
Tinea was common during summer and so was scabies in males, while in females, melasma peaked in summer and chronic urticaria during spring and winter. Season trends of six commonest diseases are depicted in graphs for both sexes (Figure 2 and 3).



**Figure 1:** Seasonal variation in the number of cases of skin diseases in OPD.



**Figure 2** Pattern of six commonest skin diseases in males over different seasons.



**Figure 3** Pattern of six commonest skin diseases in females over different seasons.

**Table 1:** Gender-wise distribution of skin diseases

Disease	Male N (%)	Female N (%)	Total (%)
Eczema	749 (9.25)	747 (9.23)	1496 (18.47)
Tinea**	816 (10.10)	422 (5.21)	1238 (15.29)
Acne	210 (2.59)	302 (3.73)	512 (6.32)
Chronic Urticaria	158 (1.95)	315 (3.90)	473 (5.84)
Scabies	312 (3.85)	105 (1.30)	417 (5.15)
Melasma	65 (0.80)	239 (2.95)	304 (3.75)
Psoriasis	174 (2.14)	110 (1.35)	284 (3.50)
Non-genital Warts	164 (2.02)	114 (1.40)	278 (3.43)
Pyodermas	140 (1.72)	102 (1.25)	242 (2.99)
Photodermatoses	77 (0.95)	141 (1.74)	218 (2.69)
Pityriasis Versicolor	115 (1.42)	64 (0.80)	179 (2.21)
Acute urticaria	71 (0.87)	90 (1.11)	161 (1.99)
Lichen Planus	68 (0.83)	71 (0.87)	139 (1.72)
Vitiligo	67 (0.83)	61 (0.75)	128 (1.58)
Alopecia areata	66 (0.81)	42 (0.52)	108 (1.33)
AGA and other hair disorders	42 (0.51)	43 (0.53)	85 (1.05)
Chronic granulomatous infections	16 (0.20)	14 (0.17)	30 (0.37)
Varicella	52 (0.64)	31 (0.38)	83 (1.02)
Herpes Zoster/PHN	72 (0.89)	57 (0.70)	129 (1.60)
Pityriasis Rosea	69 (0.83)	64 (0.55)	133 (1.64)
Insect bite/ PU	33 (0.40)	34 (0.42)	67 (0.82)
Onychomycosis	31 (0.38)	30 (0.37)	61 (0.75)
CTDs	11 (0.13)	26 (0.32)	37 (0.46)
STI	90 (1.11)	45 (0.56)	135 (1.67)
Nevi/tumors/Scars/Cysts	261 (3.22)	233 (2.87)	494 (6.10)
Other pigmentary disorders	67 (0.82)	83 (1.02)	150 (1.85)
Miscellaneous	222 (2.74)	294 (3.63)	516 (6.37)
<b>Total</b>	<b>4218 (52.1)</b>	<b>3879 (47.9)</b>	<b>8097 (100)</b>

AGA: Androgenetic alopecia, PU: Papular Urticaria, CTDs: Connective tissue diseases, STI; Sexually transmitted diseases

**Table 2:** Disease trends in the different age groups.

Disease	Number of Patients								Total N (%)
	Male				Female				
	0-15 years	15-30 years	30-60 years	>60 years	0-15 years	15-30 years	30-60 years	>60 years	
Eczemas	92	197	297	163	61	228	363	95	1496 (18.47)
Tinea	37	421	308	50	28	195	176	23	1238 (15.29)
Acne	11	187	12	0	14	254	34	0	512 (6.32)
Chronic Urticaria	8	40	98	12	3	106	195	11	473 (5.84)
Scabies	41	210	50	11	19	43	35	8	417 (5.15)
Melasma	0	27	38	0	0	161	78	0	304 (3.75)
Psoriasis	4	29	99	42	1	21	68	20	284 (3.50)
Non-genital Warts	26	97	30	11	12	58	39	5	278 (3.43)
Pyodermas	15	57	52	16	15	27	52	8	242 (2.99)
Photodermatitis	6	23	32	16	2	38	80	21	218 (2.69)
Pityriasis versicolor	12	68	30	5	8	33	20	3	179 (2.21)
Acute Urticaria	28	26	12	5	32	31	18	9	161 (1.99)
Lichen Planus	3	19	32	14	0	14	48	9	139 (1.72)
<b>Total (%)</b>	<b>283 (3.50)</b>	<b>1401 (17.30)</b>	<b>1090 (13.46)</b>	<b>345 (4.26)</b>	<b>195 (2.40)</b>	<b>1209 (14.93)</b>	<b>1206 (14.89)</b>	<b>212 (2.62)</b>	<b>5941 (73.37)</b>

**Table 3:** Comparison of the common diseases 20 years apart in two studies from Kathmandu

Condition	This study N=8097 (%)	Jha et al. <sup>9</sup> N=1746 (%)
Eczema	1496 (18.47)	156 (8.93)
Tinea	1238 (15.29)	424 (24.28)
Acne	512 (6.32)	411 (23.54)
Chronic Urticaria	473 (5.84)	-
Scabies	417 (5.15)	149 (8.53)
Melasma	304 (3.75)	235 (13.46)
Psoriasis	284 (3.50)	-
Non-genital Warts	278 (3.43)	55 (3.15)
Pyodermas	242 (2.99)	-
Photodermatoses	218 (2.69)	225 (12.89)

## Discussion

Eczema (18.47%) was the most common reason to visit the OPD as was in several other studies conducted recently<sup>8,10,14</sup>. Eczema was the fourth common cause of OPD visit twenty years back<sup>9</sup> (Table 3) and second common reason ten years ago<sup>11</sup> in two Kathmandu based studies. Exposure to numerous chemicals, foods and cosmetics may have contributed this rise in last 20 years. In communities the prevalence was 12.2% in hills<sup>4</sup> and more than 8% in terai.<sup>5</sup> Globally, the prevalence of eczema especially in children and adolescents is increasing in the developing countries.<sup>15</sup>

Tinea, which was 15.29% of all diagnoses in this study was the most common infective condition in other studies as well.<sup>7,9,10</sup> This trend has not changed in 20 years as observed by Jha et al.<sup>9</sup> Perennial lack of water, ever increasing crowd, disregard for hygiene and use of topical steroids could be the reasons for this. The incidence and recurrence of tinea has become a big burden in the low socio-economic countries specially south-east Asia.<sup>16</sup> Scabies (5.5%) is also seen as commonly as it was seen two decades back.<sup>9</sup> The reason could not be different than that of tinea. The scabies was seen 3.3% in hospital based study in terai region.<sup>7</sup> In community based studies conducted in terai,<sup>5</sup> both tinea (11.4%) and scabies (3.4%) were higher than in hilly area based community study.<sup>4</sup> Nepal's terai region is hot, humid and more crowded than hilly region, which could be the reason for this difference.

Interestingly chronic urticaria was not in the top nine diseases two decades back as noted by Jha et al.,<sup>9</sup> which has now come to top four with 5.84% of total dermatology cases, if acute urticaria is added then it is the third most frequent condition. A similar study in a

rurally located medical college found 3.4% of OPD visits due to urticaria.<sup>7</sup> However, two studies conducted one decade back have not mentioned about the urticaria in their studies,<sup>6,11</sup> signifying the trend of increasing urticaria is recent. Two rural community based studies found urticaria prevalence 1.8%<sup>5</sup> and 2.5%.<sup>4</sup> The increasing prevalence of chronic urticaria have been noted in other parts of the world as well like in Korea<sup>17</sup> and Italy.<sup>18</sup> This may signify that currently we are exposed to a larger number of risk factors than in the past.

Other disease that could be attributable to change in life-style is psoriasis. In this study psoriasis was seventh common diagnosis and consisted of 3.5% of all diagnoses. But two decades back this disease was not in top nine diseases reported from a tertiary care hospital of Kathmandu.<sup>9</sup> In a rural community the prevalence was 0.2%.<sup>5</sup> In a rural medical college psoriasis was 1.5%.<sup>7</sup> Several hospital based studies failed to report psoriasis as a separate diagnosis. The global epidemiological study suggest this is more common in more developed parts of the world<sup>19</sup> but it seems that the different life styles within the country also may play some role.

Melasma 3.75% was fairly common presentation in our study. Previously it was reported to be 13.46%<sup>9</sup> of total OPD attendance. It was more prevalent in a community based study in terai (6.8%),<sup>5</sup> than hilly area based community study (2.9%).<sup>4</sup>

Young adult group of population (15-30 years) were more vulnerable for acquiring the infective dermatoses, and non-infective diseases were more common in adults (>30 years). Though some infections were more common in young adults, other studies didn't show this difference.<sup>7,14</sup>

In this study summer season had relatively more OPD visits probably due to rise in the infective cases. Hot and humid conditions and lack of skin hygiene may be the reason for the rise.

## Conclusion

Allergy and autoimmunity are increasing as the causes of skin diseases in urban Nepal. Infective causes of skin diseases are also a big burden. Since this is a small scale, single hospital based study, large population based studies need to be conducted to confirm these findings and if possible find the possible cause as well.

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