

Pattern of Dermatological Diseases During the Lockdown and Pre-COVID Period at a Tertiary Care Center in Nepal

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Abstract

Introduction: Coronavirus disease 19 (COVID-19), which started in China, affected many countries in a short time and spread globally. The Nepal government implemented a strict lockdown to stop the spread of this viral infection.

Objectives: Analyzing the impact of COVID-19-induced lockdowns in the pattern of dermatological diseases in comparison to the non-COVID period of 2019.

Materials and methods: A retrospective cross-sectional study was done by reviewing the data from dermatology outpatients records for four months of each lockdown and four months of the non-COVID period.

Results: There was a 49% and 7% reduction in visits of dermatology outpatients during the first and second lockdown, respectively compared to the pre-COVID period. The number of non-infectious diseases was more compared to infectious diseases. Bacterial infection decreased by 1%. Herpes zoster and scabies increased by 0.5-1% during lockdowns. Cases of eczema and urticaria increased by 2% and 3-5.5% during the first and second lockdowns, respectively. Papular urticaria and sexually transmitted infections decreased by 1% during the second lockdown. Consultations for melasma increased by 1.5%.

Conclusion: There was a reduction in patient visits during both lockdowns. However, a marked reduction was seen during the first lockdown compared to the pre-COVID period.

Pruritic conditions like eczemas, urticarias, and scabies increased, whereas papular urticaria decreased. Pigmentary disorders decreased, but visits for melasma increased. All bacterial infections decreased, whereas herpes zoster increased among viral infections. Chronic diseases like psoriasis and acne vulgaris decreased slightly. The number of sexually transmitted infections (STIs) also decreased. There was no difference in the proportion of infectious and non-infectious diseases compared to the pre-COVID and the lockdown periods.

Key words: Dermatology outpatients; Lockdown; Pattern of diseases

Introduction

COVID-19 spread globally, affecting many countries quickly. On 11 March 2020, World Health Organization (WHO) declared COVID-19 a pandemic.¹

Nepal reported its first case on 23 January 2020 in a native student returning from China.² After two months, with the detection of the second case, amidst fear of spreading the disease, the Nepal government implemented a nationwide strict lockdown³ paralyzing every aspect of human life as practiced by many other countries.⁴⁻⁵

Again, after a rapid surge of delta variants of coronavirus, the government imposed a second

nationwide lockdown to stop the spread of infection.⁶

The lockdown-induced immobility affected major aspects of human life, including the routine health care system, and Dermatology was no exception. During the lockdown, there were reports of decreased number of patients in dermatology outpatients and a change in the pattern of various skin diseases^{7, 8}, like, consultation

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increased for atopic dermatitis in the pediatric age group while drug rash dominated among adults.⁹ Government statistics in Nepal showed that skin diseases constitute 7% of the total outpatients, holding the 8th most common cause for consultation in the country.¹⁰ Studies have reported the pattern of dermatological diseases during the pre-pandemic period in Nepal.¹¹ However, there is little information showing the impact of COVID-19 on dermatology services during the lockdown.

We carried out this current study to determine the impact of COVID-19 on dermatology outpatients. This study's information would help us know the nature of dermatology presentations during lockdown periods, thereby helping formulate a strategy to combat similar situations in the future.

Materials and methods

This retrospective cross-sectional study was undertaken after getting ethical approval from the Institutional Review Committee at Patan Hospital. The outpatient registers of the dermatology department were reviewed for 4 months in each year of 2019 (non-COVID period), 2020 (first lockdown), and 2021 (second lockdown). The first and second lockdowns constituted 24 March to 22 July 2020³ and 29 April to 31 August 2021 respectively.⁶ Both the lockdowns were implemented for approximately 4 months and fell in the same season of the year. To avoid seasonal variation in disease patterns, four months of the same season of 2019 was chosen as a comparator which exactly corresponded with the period of the first lockdown. The data were reviewed for age, gender, and pattern of dermatological diseases. Patients who primarily visited for dermatology services were included and cases referred from other departments were excluded from this study. A descriptive analysis was performed on both lockdown periods and compared with the data from the previous year using SPSS software.

Results

A total of 5916 patients visited dermatology outpatients constituting 31.4% of a total of 18830 skin patients during four months of 2019. Only 1230 patients visited during the first lockdown comprising 16.4% of a total of 7483 skin patients who visited in the year 2020. Similarly, 2923 patients visited dermatology outpatient, constituting 24.6% of a total of 11854 dermatology patients during the second nationwide lockdown in 2021 (Figure 1).

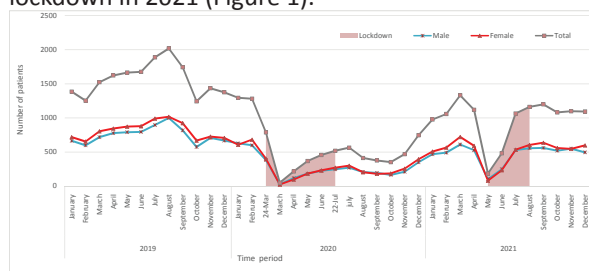


Figure 1. Change in dermatology patients’ frequency before and after COVID -19 outbreak at Patan Hospital. Females outnumbered males as usual, but males seemed slightly more courageous (51%vs 49%) to venture outside their homes during the first lockdown (Figure 2).

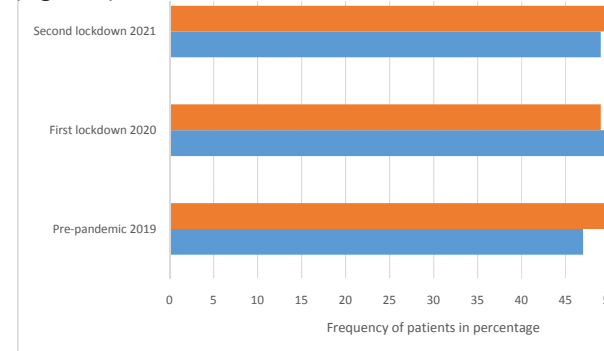


Figure 2. Gender distribution during periods of lockdown and pre-pandemic period

Most of the consultation was sought by younger patients irrespective of the lockdown or pre-pandemic period. (Figure 3).

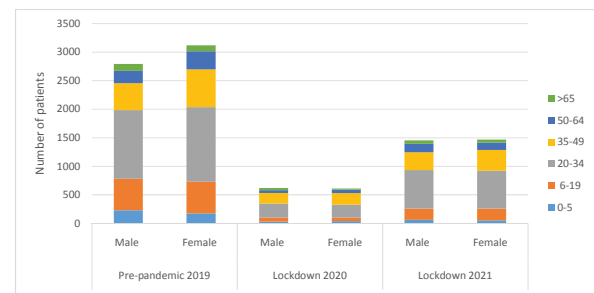


Figure 3. Age group and gender distribution during periods of lockdown and pre-pandemic time

We made a total of 6926 diagnoses among 5916 patients during the pre-pandemic period in 2019. Similarly, 1454 diagnoses were made among 1230 patients who visited during the first lockdown, and 3287 diagnoses were generated among 2923 patients during the second lockdown.

Non-infectious skin diseases formed the bulk in all three time periods as compared to infectious dermatoses. Among infectious skin conditions, fungal infection (17%) was the leading cause of presentation followed by viral (7%) and bacterial (4.9%) infections during the pre-pandemic period. Bacterial and viral infections slightly decreased during lockdowns in comparison to the pre-pandemic period (Table 1). All types of bacterial infections (abscess, cellulitis, folliculitis, furunculosis, impetigo, and secondary pyoderma) decreased during both lockdowns; viral infections (exanthem, molluscum contagiosum, varicella, and verruca) also closely followed the same trend except for herpes infections, which increased during both lockdown periods (1.5% in pre-COVID time, 2% and 2.3% during first and second lockdowns). The number

of STIs decreased whereas the number of scabies increased from the previous years.

Table 1. The pattern of infectious diseases during pre-pandemic period and lockdown

Pattern of infections	Pre-pandemic period n(%)	First lockdown n(%)	Second lockdown
n (%)			
Bacterial	338 (4.9)	58 (4)	129 (4)
Viral	531 (7.7)	96 (6.6)	251 (7.6)
Fungal	1177 (17)	258 (17.7)	527 (16)
Scabies	186 (2.7)	47 (3.2)	123 (3.7)
Leprosy	13 (0.18)	3 (0.20)	0
STIs	108 (1.55)	15 (1.03)	26 (0.7)
Total	2353 (34)	477 (33)	1056 (32)

Among non-infectious dermatoses, pigmentary

disorder (16%) was most common followed by eczema and dermatitis (14.2%) during the pre-pandemic period. In contrast, eczema and dermatitis (16.2%) were most common during both lockdowns, followed by urticaria and angioedema (11.3% and 13%) (Table 2).

Pigmentary disorders, the most common cause of hospital visit during the pre-pandemic period, was not the priority for hospital visit during both lockdown periods (3% and 5%). Among pigmentary disorders, melasma was the most consulted disease during lockdowns than in the pre-pandemic period. The number of pregnant ladies complaining of pruritus also rose more during both lockdown periods. There was not much difference in the number of visits for acne vulgaris, papulosquamous disorders, alopecia, photo-induced dermatitis, and other rare diseases like bullous disorders, connective tissue diseases (CTDs), and vasculitis. Skin conditions categorized as "others" included soft tissue tumours, miliaria, pruritus vulva, hyperhidrosis, pityriasis alba, and aphthous ulcer decreased during lockdown periods.

Table 2. Pattern of noninfectious disease during pre-pandemic period and lockdowns

Pattern of diseases	Pre-pandemic period n(%)	First lockdown n(%)	Second lockdown n(%)
Acne vulgaris and rosacea	416 (6)	72 (5)	172 (5.5)
Alopecia	130 (1.9)	31 (2.1)	67 (2.0)
Bullous disease	5	4	0
Drug rash	30 (0.43)	2 (0.13)	5 (0.15)
Eczema and dermatitis	986 (14.2)	237 (16.2)	526 (16)
Papular urticaria and bite reaction	116 (1.7)	24 (1.6)	20 (0.6)
Papulosquamous disorders	336 (4.8)	61 (4.2)	119 (3.6)
● Psoriasis	199 (2.9)	39 (2.7)	61 (1.9)
● Pityriasis rosea	41 (0.6)	6 (0.4)	21 (0.6)
● Lichen planus	96 (1.3)	16 (1.1)	37 (1.1)
Photo induced dermatitis	359 (5)	67 (5)	132 (4)
Pigmentary disorders	234 (16)	44 (3)	167 (5)
● Melasma	82 (1.1)	28 (1.9)	90 (2.7)
● Vitiligo	61 (0.9)	7 (0.5)	22 (0.6)
● Naevus	32	4	20
● Post-inflammatory hyperpigmentation	56 (0.8)	4 (0.3)	28 (0.8)
● Freckle and lentigen	3	1	7
Pruritus	96 (1.4)	41 (3)	102 (3)
● Pregnancy associated	79 (1.1)	35 (2.4)	98 (2.9)
● Systemic cause	17(0.24)	6 (0.4)	4 (0.1)
Steroid induced dermatosis	39 (0.5)	2 (0.1)	5 (0.2)
Urticaria and angioedema	561 (8)	165 (11.3)	447 (13.6)
Vasculitis and CTDs	40 (0.57)	7 (0.48)	3 (0.1)
Xerosis cutis	165 (2.3)	37 (2.5)	103 (3.1)
Others	1060 (15.3)	183 (12.6)	363 (11)
Total	4573 (66%)	977 (67%)	2231 (68%)

Discussion

Analyzing the difference between the pre-pandemic period and lockdowns we found that there is a marked reduction in the number of patients during lockdowns similar to studies by Sharif and Turkman.^{7,8} This reduction was because of COVID-related panic in the community and governmental stay at home orders unless for urgent or medical emergencies. On top of that, people feared contracting coronavirus in Patan Hospital, as this was one of the hub hospitals for COVID case management in the Kathmandu valley.¹²

There was a female preponderance of patients visiting dermatology outpatients before the pandemic, which is also the case with other studies.⁸ However, during the first lockdown, the number of males appeared slightly more when compared to that of the previous year. This increment may be because females are more cautious about their health. More importantly, they are bound to stay inside the home taking care of other family members.

Children and elders also visited hospitals less during the lockdowns. Since these groups were considered high risk and enjoyed extra care from family members, they became less ill and hence fewer hospital visits.⁷ We saw a reduction in infections. Continuous hand hygiene practice which was one of the major means of prevention of COVID led to a decrease in the number of bacterial and viral infections compared to the previous year.^{13,14} Though overall viral infections decreased, the number of herpes zoster increased during both lockdowns than that of the previous year as in another study.¹⁵ This may be due to psychological stress related to COVID, being confined at home, having lost jobs and businesses,^{16,17} and other stressful conditions.

This kind of stressful environment along with repeated use of soap and sanitizer led to higher hospital visits seeking help for eczema and dermatitis-related conditions, which is consistent with another study.⁵

There was an outbreak of scabies in Europe during the COVID pandemic.^{18,19} We also observed an increased number of scabies cases during both the lockdowns as compared to the pre-pandemic period. This surge could be due to close contact among family members who lived together in a confined space. Further, lack of attention to personal hygiene like bathing because of a lack of necessity to go out for work or other social activities might have facilitated the disease transmission.¹⁹

A study on sexual health during the pandemic assumed a decline in STIs due to social isolation, the closure

of entertainment facilities, and the restriction of unnecessary movement.²⁰ However, no reduction of STIs was found by Balestry et al.²¹ In contrast, we observed a decline in the diagnosis of STIs during the pandemic, which was comparable with another findings.²²

Papular urticaria and other insect-bite reactions are common among children and younger people who are engaged in outdoor activities like sports, hiking, and hanging out with friends. Since such activities were limited during the lockdown, we observed a reduced frequency of such disorders during lockdowns.

Overall, the pigmentary disorder was the most frequently visited skin disorder during the non-COVID time. However, this was the least common cause of hospital visits during the lockdown. This reduction could be because patients gave less importance to a non-morbid condition compared to other morbid conditions. Contrary to this finding, the number of melasma cases increased during lockdowns compared to the pre-pandemic era, probably due to more time spent in front of screens.²³ In contrast, Iraqi women showed decreased number of melasma during the lockdown.²⁴

There were reports about the association of urticaria with COVID, suggesting that urticaria might be one of the cutaneous manifestations of COVID-19.^{25,26} We also found an increased number of urticaria cases during the pandemic period. However, we could not ascertain the cause-and-effect relationship as we did not perform the COVID test on these patients.

As stated in other studies, we did not find an increased number of psoriasis, pityriasis rosea, or acne vulgaris.^{8,24} Rare and uncommon diseases like bullous diseases, drug rash and vasculitis, and CTDs remained rare during lockdowns as in other studies.^{5,22}

Conclusion

There was a decreased frequency of all infections except herpes zoster and scabies during lockdowns. Psychological, financial, and COVID-related stress might have contributed to an increased number of herpes zoster. Similarly, close contact among family members while living in a confined space and a lack of attention to personal hygiene might have facilitated the increased number of scabies. Among non-infectious dermatoses, pruritic diseases like eczema and urticaria increased. However, papular urticaria and bite reactions decreased. Chronic conditions like acne vulgaris and papulosquamous disorders decreased.

The number of STIs also decreased, which may be due to restrictions on unnecessary movement.

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