

# The spectrum of dermatoses among prisoners; A retrospective analysis

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## Abstract

**Background** Skin diseases in underprivileged populations are under-estimated. Prisons may harbour several dermatoses due to congestion and neglected hygienic conditions of their inhabitants. This may further aggravate their misery and psychological health. No study addressing skin disorders in this population has been conducted in our part of the world.

**Objective** To analyse the pattern of various skin disorders among prison inmates.

**Methods** Clinical data of male prisoners of Central Jail Lahore seen from 2016 to 2021 were retrospectively analysed in this cross-sectional study. Frequencies and patterns of their skin diseases were studied and grouped according to their ages.

**Results** A total of 194 inmates were seen. The most commonly observed skin disease was scabies, followed by tinea pedis and acne. The mean age of the patients was  $41.78 \pm 10.9$  years. Most (57.2%) of the patients were less than 40 years of age. The frequencies of skin disorders observed were as follows: Infections and infestations (53.1%), eczematous disorders (23.2%), autoimmune disorders (5.7%), disorders of pigmentation and solar damage (3.6%) and miscellaneous diseases (14.4%). Among infections, scabies was most frequently seen (42.8%), followed by fungal (38.8%), viral (12.6%) and bacterial infections (5.8%).

**Conclusion** Infestations and infections are the commonest dermatological conditions observed among inmates, probably due to overcrowding and poor hygienic conditions prevalent in jails.

## Key words

Dermatoses, jail inmates, scabies.

## Introduction

Prisons are a potential reservoir for various skin diseases, particularly infections. These may spread to the community through visitants, workers or the released inmates.<sup>1,2</sup> The lack of adequate sanitation, hygienic practices and congestion in detention centres contribute to the rapid spread of these diseases. Inadequate medical facilities further contribute to delayed

diagnosis and optimal management.<sup>3</sup> The prevalence of these diseases is often underestimated. The situation is further worsened by damaging activities like drug and substance abuse, illicit sexual activities and physical and psychological trauma.<sup>4</sup> Analysis of their pattern and prevalence is inevitable as many of these disorders are contagious and can be prevented.<sup>5</sup>

Pakistan is home to many endemic and epidemic disorders.<sup>6</sup> To date, studies conducted in prisons of Pakistan have focussed only on infections like tuberculosis, HIV, hepatitis etc.<sup>2,3,7</sup> No data is available regarding cutaneous diseases in this

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population in our country, which is, therefore, more likely to stay undiagnosed and underestimated. Moreover, the management of these patients is also challenging regarding limitations of investigations and provision of systemic and topical drugs.<sup>8</sup> Dermatologists from designated hospitals visit these prisons weekly and give their opinion. If required, patients are investigated by the same hospitals which might need transportation of patients to these settings.

The rationale of this study was to analyse the pattern of various dermatoses in the most marginalised population of prisons in Pakistan to help in better management and planning for the provision of health care services to them. We also intended to compare these details from studies across the world, to better understand the magnitude of the problem.

**Methods**

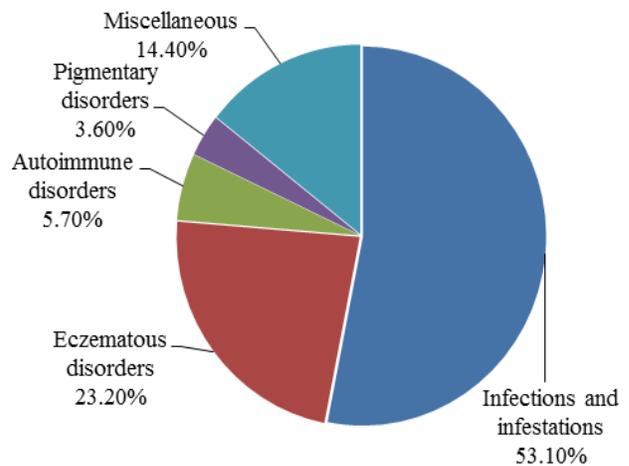
This retrospective, cross-sectional survey was conducted at the Department of Dermatology, Services Hospital/ Services Institute of Medical Sciences, Lahore. After obtaining permission from IG Prisons, Punjab, clinical data of male patients of Central Jail, Kot Lakhpat Lahore, seen from 2016 to 2021, were analysed. Demographic data and clinical details of patients were recorded. Disorders like contact dermatitis, seborrheic dermatitis and xerotic eczema were lumped together as Eczematous disorders. Category of autoimmune diseases included pemphigus vulgaris, pemphigus foliaceus, bullous pemphigoid, lupus erythematosus, lichen planus, etc. Disorders of pigmentation and solar damage included lentigines, freckles, melisma, seborrheic keratosis and vitiligo. Infectious skin diseases included viral infections, fungal infections, bacterial infections and scabies. Miscellaneous diseases included chronic ulcers, acne, fixed drug eruption, keloid, etc. Results were tabulated and analyzed using frequencies.

**Table 1** Frequency of different disease groups (n=194).

Types of lesions	N (%)
Infections and infestations	103 (53.1)
Eczematous Disorders	45 (23.2)
Autoimmune Disorders	11 (5.7)
Disorders of pigmentation and solar damage	7 (3.6)
Miscellaneous diseases	28 (14.4)

**Results**

The frequency of various disorders among jail inmates was analysed using SPSS 25. **Table 1** depicts the relative frequency of various groups of skin diseases observed. A total of 194 inmates were seen. **Table 2** depicts the frequency of individual diseases seen. The most commonly observed skin disease was scabies, followed by tinea pedis and acne. The mean age of the patients was 41.78±10.9 years. Most (57.2%) of the patients were less than 40 years of age. The frequencies of groups of skin disorders observed (**Figure 1**) were as follows: infections (53.1%), eczematous disorders (23.2%), autoimmune disorders (5.7%), disorders of pigmentation and solar damage (3.6%) and miscellaneous diseases (14.4%). Among infections and infestations, scabies was most frequently seen (42.8%), followed by fungal (38.8%), viral (12.6%) and bacterial infections (5.8%).



**Figure 1** Relative frequencies of various dermatoses among prisoners.

**Table 2** Frequency of various dermatoses among Jail patients.

Skin diseases	Age of patients (years)			Total
	<= 40	41-60	>=61	
Eczema of unknown cause	3	10	0	13
Contact dermatitis	4	0	2	6
Seborrheic dermatitis	7	5	0	12
Xerotic eczema	0	3	1	4
Stasis eczema	3	1	0	4
Atopic eczema	0	0	1	1
Prurigo	1	0	0	1
Infected eczema	1	1	0	2
Photo contact dermatitis	0	1	0	1
Intertrigo	1	0	0	1
Psoriasis	1	2	1	4
Pemphigus vulgaris	1	0	0	1
Pemphigus Foliaceous	1	0	0	1
Chronic urticaria	3	0	0	3
Lichen planus	2	0	0	2
Lentiginos	1	0	0	1
Freckles	1	0	0	1
Melasma	3	0	0	3
Seborrheic keratosis	0	1	0	1
Vitiligo	0	1	0	1
Oral candidiasis	0	1	0	1
Pityriasis versicolor	0	4	1	5
Tinea pedis	9	6	2	17
Tinea cruris	5	3	0	8
Tinea corporis	9	0	0	9
Folliculitis	2	0	1	3
Cellulitis	1	0	0	1
Pitted keratolysis	1	0	0	1
Pityriasis rosea	0	1	0	1
Viral warts	3	3	0	6
Herpes zoster	2	1	0	3
Herpes zoster ophthalmicus	1	0	0	1
Post herpetic neuralgia	1	1	1	3
Scabies	25	16	3	44
Acanthosis nigricans	0	1	0	1
Sebaceous cyst	2	0	0	2
Dermatitis artefacta	1	0	0	1
Non-healing ulcers	0	1	0	1
Acne	15	2	0	17
Fixed drug eruption	0	2	0	2
Keloid	0	1	0	1
Oral aphthoses	0	0	2	2
Insect bite reaction	1	0	0	1
Total	111	68	15	194

**Discussion**

Dermatological disorders are frequently seen, but neglected, among prison inmates. This is particularly so in the developing world owing to poor hygienic conditions and congestion in this population.<sup>9</sup> We conducted this study to estimate the magnitude of the issue in our part of the world. According to our observations, the

frequency of various skin diseases was unique in some respects and authenticated other studies in others. The alarmingly high frequency of infectious diseases (53.1%) highlighted their importance behind the bars. Scabies was the most frequently seen (42.8%), followed by fungal (38.8%), viral (12.6%) and bacterial infections (5.8%). eczematous disorders (23.2%), autoimmune disorders (5.7%), disorders of pigmentation and solar damage (3.6%) and miscellaneous diseases (14.4%) comprised the rest of the disease burden.

Recently in a similar study conducted in India, Das *et al.*<sup>9</sup> also found infections as the commonest dermatoses in jails. However, they observed fungal and bacterial infections to be the commonest, followed by infestations. In our observation, scabies infestation was the most prevalent disease. This difference may be attributed to the fact that they studied both male and female prisoners while we observed only males. They too concluded that most patients belonged to the less than 40 years age group. This observation can be related to the fact that most of the prisoners belong to this age group in jails. However, it is disturbing to know that even at this active age, they don't pay heed to hygienic practices to avoid infections and other skin diseases. Oninla *et al.*<sup>10</sup> also highlighted the magnitude of infectious diseases in a Nigerian prison. They too found fungal infections as commonest followed by bacterial infections. They correlated their observations to hygienic practices and sanitary supplies and found a significant impact of these on overall prevalence.<sup>11</sup> Due to the lack of this data provided to us, we couldn't relate our observations to congestion or sanitary practices in our jails.

Parajuli *et al.*<sup>12</sup> too noted a high prevalence of infections (34.8%) in Nepal. However, they too noted fungal infections to be the most frequent,

followed by eczema (16.3%) and infestations (12.3%). Studies conducted in other parts of the world by Coury *et al.*,<sup>13</sup> Mannocci *et al.*<sup>14</sup> and Kocaturk *et al.*<sup>15</sup> also showed similar results. Studies conducted on prison inmates, in our part of the world, focussed more on the prevalence of hepatitis, HIV and sexually transmitted diseases.<sup>2,16</sup> However, this study is the first to address skin disorders in this underprivileged population. The major limitation was the lack of data regarding congestion and hygienic practices in jail and we studied inmates in a single jail in Lahore, so the sample size is limited.

## Conclusion

Prisons and detention centres are inevitable for the security and law and order of a community. However, in the developing world, congestion, poor sanitation and hygienic practices and lack of adequate medical facilities contribute to the increasing prevalence of infections, infestations and other cutaneous disorders behind the bars. This adds to their misery and poor quality of life.

Meticulous health care measures are required to adequately address health care issues of prison inmates along with training of health care staff and provision of equipment for sanitation and maintenance of personal hygiene.

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