



Dermatological pathology in an African prison environment: Guinean experience

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Abstract

Introduction: The aim of this study was therefore to provide a detailed description of the dermatological conditions presented by prisoners and to determine their determining factors in the largest detention center in Guinea.

Material and methods: This work took place in the central house of Conakry. It is a penitentiary establishment built at the beginning of the 20th century for a theoretical capacity of three hundred people. Its occupancy rate in 2013 was 377%, reflecting saturation. From April 1 to 17, 2013, we conducted a descriptive and analytical cross-sectional study that included all prisoners with one or more dermatosis and who agreed to participate in the study. For each inmate, the different types of dermatosis were identified. The frequency of the shower, the use of soap for the shower, the change of clothes and the sanitation of the cells were analyzed by the Chi² of Pearson at the threshold of 5%. The study was authorized by the prison authorities.

Results: One thousand one hundred and thirty-one detainees were examined; 320 had dermatosis, a prevalence of 27.3%. They were 292 men and 28 women with an average age of 30 years and extremes of 15 and 70 years. Infectious dermatosis were the most represented, with 247 cases (77.2%) with a predominance of scabies in 146 inmates, and dermatophytis in 58 inmates. Non-infectious dermatosis accounted for 22.8% of dermatosis with a predominance of contact eczema noted in 27 patients. One hundred and eighty-nine (59%) patients showered irregularly, 62% did not use soap for the shower, 51% irregularly changed their clothes after showering, 70 % of the cells were irregularly cleaned. Seventy-five percent of patients had never had a dermatological consultation. We found a statistically significant relationship between the occurrence of infectious dermatosis and hygienic conditions in prison settings including the frequency of the shower, the use of soap and the frequency of changing clothes.

Conclusion: The profile of skin disease observed in the Guinean prison environment is no different from that of the majority of resource-limited countries. These are pathology that can be the subject of preventive measures and/or can be aggravated by precarious conditions of hygiene and detention.

Keywords: Infectious dermatosis, prison, defectivehygiene, Guinea

Introduction

The prison population is a disadvantaged and vulnerable population, the majority of whom are youth and adults. Over population

and poor sanitary conditions in the prison environment offer favorable conditions for the development of various pathologies, including dermatological pathologies.

These have been the subject of several studies [1-5], with frequencies varying according to the context: 7.7% in Belgian prisons [6] 27% in prisons in Switzerland [7], 56.2% in Cameroon [2] 49.2% in Nigeria [4]. They are responsible for significant morbidity.

Nowadays, no data centered on dermatological pathology in prisons are available in Guinea.

The purpose of this study was therefore to provide a detailed description of the dermatological pathology presented by inmates in the largest detention center in Guinea and to determine the determining factors.

Methods

Site of study

This work took place in the central house of Conakry. It is a penitentiary establishment built at the beginning of the 20th century for a theoretical capacity of three hundred (300) people. Its occupancy rate in 2013 was 377% and reflects saturation.

Type and length of study

From 01 to 17 April 2013, we carried out a cross-sectional, descriptive and analytical study that included all prisoners with one or more dermatologic pathology and freely agreed to participate in the study.

The consultations were carried out by two dermatologist physicians assisted by the Physician of the establishment and a nurse. The diagnosis was based exclusively on anamnestic and clinical arguments.

The data were: age, sex, education, marital status, length of incarceration, number of inmates per cell, history of consultation, frequency of shower, use of Soap for the shower, changing clothes, sanitizing cells and different types of dermatoses.

The frequency of the shower, the use of soap for the shower, the change of clothes and the sanitation of the cells were analyzed by the Pearson chi-square at the 5% threshold or by Fisher's exact test.

Ethically, the study was conducted after the free and voluntary consent of the detainees. Moreover, it was carried out after the agreement of the prison authorities.

Results

During the reporting period, one thousand one hundred and thirty-one patients were examined. Of these, 320 had dermatosis, a prevalence of 27.3%.

These were 292 men and 28 women with an average age of 30 years and the extremes of 15 and 70 years. The majority of patients (42.5%) were in the 20-29 age group years. They were out of school in 40.6% of the patients, had a pre-university level of 52.2% and a university level of 7.2% of the patients. The socio-demographic characteristics are detailed in **Table 1**. Seventy-five percent of patients had never had a dermatological consultation. Infectious dermatosis were the most common, with 247 cases (77.2%) with a predominance of scabies (**Figure 1**) in 146 inmates (59.1%), dermatomycosis (**Figure 2**) in 58 patients.

Table 1. Socio-demographic Characteristics of study population.

Variable		Number	Percentage (%)
Age (years)	<20	43	13.4
	20-29	136	42.5
	30-39	87	27.2
	40-49	35	10.9
	50-59	14	4.4
	≥60	5	1.6
Sex	Male	292	91.7
	Female	28	8.3
Level of education	Unschooling	130	40.6
	Pre-university	167	52.2
	Superior	23	7.2
Marital status	Singles	212	66.3
	Married	98	30.7
	Divorced	4	1.2
	Widowed	6	1.9
Duration of incarceration (year)	<1	244	76.2
	1-5	72	22.5
	>5	4	1.3



Figure 1. Profuse scabies in a 32-year-old prisoner in conakry prison.

Non-infectious dermatosis accounted for 22.8% of dermatosis with a predominance of contact eczema noted in 27 patients. The clinical characteristics of the patients are summarized in **Table 2**.

One hundred and ninety-nine (59.1%) patients were showering irregularly, one hundred and ninety-nine patients (62.2%) did not use soap for showering, one hundred and sixty-four patients (51.3%) Irregularly changed clothes after showering, 70% of the cells were irregularly cleaned. We found a statistically significant relationship between the occurrence of infectious dermatosis and the hygiene conditions in prisons, including the frequency of showering, the use of soap and the frequency of change of clothing (**Table 3**).

Discussion

This study was the first to document the epidemiological and



Figure 2. Profuse dermatomycosis in a 28-year-old man in conakry prison.

Table 2. Clinical characteristics of the patients.

Type of dermatological pathology		Number	Percentage %
Infectious Dermatitis (247/320:77.2%)			
Parasitic infections (146/247:59.1%)	Scabies	146	59.1
Fungal Infections (98/247:39.6%)	Dermatomycosis	58	23.4
	Onychomycosis	2	0.8
	Pityriasis versicolor	38	15.3
Bacterial infection (3/247:1.2%)	Furuncle	3	1.2
Viral infection (2/247:0.8%)	Genitalwarts	2	0.8
Infectious Dermatitis (73/320:22.8%)			
	Eczema	27	39.1
	Acne	23	31.5
	Urticaria	4	5.4
	Sudden dermatitis	11	15.0
	keloid	2	2.7
	Prurigo	6	8.2

Table 3. Distribution of the prisoners according to the occurrence of skin disease according to the risk factors.

Factors	Infectious Dermatitis		Exact Fisher Test	P-value
	Yes	No		
Frequency of shower				
Regular	99	32	Positive	p<0.05
Irregular	176	13	--	--
Using soap for shower				
yes	90	31	Positive	p<0.05
No	185	14	--	--
Change of clothes after shower				
Regular	58	26	Positive	p<0.05
Irregular	217	19	--	--

clinical profile of dermatosis in Guinean prison settings.

The main findings indicate a situation similar to that reported by other authors, namely a high prevalence of infectious diseases and youth in the prison population [2,5,8].

It reports a prevalence of 28.3%. This result is consistent with data from the literature, which highlights the frequency of dermatosis in prisons and accounts for the extent of dermatological conditions in Guinean prison settings.

They were dominated by infections noted in 77.2% of patients. Our result is superior to that of Parajuli et al., [3] in Nepal, who report a 34.8% prevalence of infectious dermatosis but similar to that reported by Kouotou et al., [2] in Cameroon who reported a prevalence of 76.4% infectious dermatosis.

Prison over crowding, promiscuity and poor hygienic conditions are all factors that favor this strong representativeness of the scabies and dermatomycosis observed during our study.

The over population observed in our study is also reported by several other authors [4,8-10].

These infectious pathologies are transmissible and require early management and special hygiene measures to limit their spread. The detainees were mostly young, with an average age of 30 years, and extremes of 15 and 71 years. This result is not only a reflection of the youth of the prison population but also calls for the need to promote integration approaches so that young people can play their role better as a development actor. The result is in line with those of Kouotou et al in Cameroon [2] and B. Khatibi et al., [11] in France, which report averages of 32 years and 34 years respectively. The sex ratio was in favor of men at 10.42. This is the image of recruitment because there was a male predominance in prison. Inmates were single in 66.3% of the cases and 40.6% were out of school. B. DEMOURES et al., [12] reported almost exclusively male prisoners aged between 13 and 67 (48% aged 20-30 years) single in 59% of the cases and 55% of whom were enrolled in school.

Regarding hygiene conditions, only 5.9% of the cells were sanitized daily, 59.1% of the prisoners took irregularly, the shower, 62.2% showered without soap and only 26.3% wore clean clothes after the shower. We found a statistically significant relationship between prison hygiene conditions (including frequency of shower, use of shower soap, frequency of change of clothes) and the occurrence of infectious dermatosis with P<0.05. Oninla OA et al., [8] and Makoutode M et al., [9] in their respective studies, the existence of a statistically significant link between the hygiene conditions of the prison environment and the occurrence of infectious dermatosis was established.

In our study, we identified 247 cases of infectious dermatosis, a frequency of 77.2% and 73 cases of noninfectious dermatosis, or a frequency of 22.8%. Our data are similar to those of Oninla OA et al., [8] in Nigeria, which found 63.6% infectious dermatosis, 36.4% non-infectious dermatosis. Among infectious dermatosis, 59.1% (146/247) of mange, 39.6% (98/247) of mycotic dermatosis dominated by dermatomycosis were found in 58 patients, i.e., 23.4% followed by pityriasis versicolor in 38 Patients, is 15.3%. In our study, as in those of several other

authors, mycotic conditions also remain of high prevalence in prison settings [8,13,14]. In the study by B. Khatibi et al in France, the low rate of scabies was due to the anti-scabious treatment and to the isolation during one week of the prisoners for whom this diagnosis was evoked during the systematic medical consultation that follows their Transfer from their place of custody [12].

The high prevalence of infectious diseases also reported by Kuruvila et al [15] could be reduced by improving hygiene conditions.

Non-infectious pathologies were dominated by contact dermatitis.

The discomfort caused by the various pathology encountered did not seem to be a priority, as only 82 of them (25.6%) said that they had previously consulted the prison infirmary for these dermatosis and 83% benefited from treatment. This result would probably be related to the benign character of the different pathology observed.

This work, which was based on a single penitentiary institution, can not be extrapolated to the whole country, but

given the socio-economic conditions, we hypothesize that the profile described here would be comparable to that of the other centers detention throughout the country.

A wider study including prisons in the regions may confirm or disprove our hypothesis.

Conclusion

The profile of skin disorders observed in the Guinean prison environment is no different from that of the majority of resource-limited countries. These are pathologies that can be the subject of preventive measures and/or can be aggravated by precarious conditions of hygiene and detention.

Despite the apparent benignity of the pathologies encountered, it would be important to develop regular monitoring of the health status of prisoners and to establish appropriate management to reduce morbidity.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

Authors' contributions	TMT	MMS	MK	FBS	FAT	TD	IC	DS	BFD	AD	BH	MC
Research concept and design	✓	✓	✓	--	--	✓	--	--	--	--	--	✓
Collection and/or assembly of data	✓	✓	✓	--	--	✓	✓	--	--	--	--	--
Data analysis and interpretation	✓	✓	✓	✓	✓	--	✓	--	--	--	✓	--
Writing the article	✓	✓	✓	--	--	✓	--	--	--	--	--	--
Critical revision of the article	✓	✓	✓	✓	✓	✓	--	✓	✓	✓	✓	✓
Final approval of article	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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