SciDoc Publishers
Infer, Interpret & Inspire Science

OPEN ACCESS

International Journal of Clinical Dermatology & Research (IJCDR)
ISSN 2332-2977

Skin Diseases Among Sub-Saharan African Prisoners: The Cameroonian Profile

Research Article

Kouotou E A[1*], Sieleunou I[2], Defo D[1], Nansseu N. J R[3], Atenkeng Apasew H[1], Moyou Somo R[1], Zoung-Kanyi Bissek A C[1]

[1] Faculty of Medicine and Biomedical Sciences, University of Yaoundé I, Cameroon.
[2] School of Public Health, University of Montréal, Canada.
[3] Sickle cell unit, Mother and Child Centre of the Chantal Biya Foundation, Yaoundé, Cameroon.

Abstract

Background: Overcrowding and promiscuity observed in our prisons are a spreading source of several diseases including infections transmitted by interhuman contact. It has been argued that skin diseases are the most frequent reasons for consultations in prisons. In Cameroon, no study has been done to assess the magnitude of this issue. Our study aimed at determining the profile of dermatological pathologies among Cameroonian prison inmates.
Methods: This was a cross-sectional study at the Mfou Principal Prison from February to April 2014. Were included all prisoners who consulted the research team at the prison infirmary during the period of recruitment and who accepted to take part in the study. Prisoners were consulted and a structured questionnaire was used for data collection. Diagnosis was based on the anamnestic and clinical findings. Participants with uncertain diagnosis were excluded from the study. Data were entered into Microsoft excel 2010 spreadsheets and analyzed using SPSS version 17.0.
Results: A total of 217 prisoners were retained for our study out of the 369 present in the prison during the study period. Among these 217 prisoners, 201 (92.6%) were males, 189 (87.1%) were Christians, 123 (56.7%) did not attend the secondary school, and 137 (63.1%) were single. Age ranged from 14 to 60 years with a mean of 32 ± 4.7 years and, age groups 21-30 and 31-40 being the most represented ones. More than half (57.1%) of our population exhibited skin diseases with scabies being present in 41% of cases. The dominating presentations of skin diseases were: scabies (71.8%), eczema (9.7%), dermatophytosis (specifically tinea corporis: 5.6%), pityriasis versicolor (4.8%), and acne (3.2%). Six point five percent of participants presented with more than one skin disease, and eczema was the most frequent disease associated with scabies in 8 cases (6.4%). Pityriasis versicolor was the most common skin disease among females (25% of women infected).
Conclusion: There is a high prevalence of skin diseases among prisoners at the Mfou Principal Prison. of which scabies (71.6%), eczema (9.7%), dermatophytosis (5.6%) and pityriasis versicolor (4.8%) were the prevailing skin diseases encountered .There is thereby an urgent need to implement strong and efficient interventions in order to solve the problems of over population, poor hygiene, precarious quality of life and lack of health care in our prisons.

Key words: Skin diseases; Prison; Inmates; Sub-Saharan Africa

***Corresponding Author**:
Kouotou Emmanuel Armand,
Dermatologist,Senior Lecturer, Faculty of Medicine and Biomedical Sciences, University of Yaoundé I, Cameroon, P.O. Box: 7132 Yaoundé – Cameroon.
Tele: +237 22 11 19 99, +237 96 95 50 83, +237 79 84 4360
Email: kouotoea@yahoo.fr

Received: September 06, 2014
Accepted: October 08, 2014
Published: October 14, 2014

Citation: Kouotou E A et al (2014) Skin Diseases Among Sub-Saharan African Prisoners: The Cameroonian Profile. *Int J Clin Dermatol Res.* 2(7) 40-43. **doi:** http://dx.doi.org/10.19070/2332-2977-1400012

Introduction

During recent years, most African countries especially those located south of the Sahara like Cameroon have designed their health policies, focusing on building and equipping health facilities, with the aim of improving the quality of care and thus promoting equitable access to the local population.

Although this may be true for the general population, institutions such as prisons seem to have been left out by policy makers. Words and conditions that suitably describe Cameroonian prisons are: overpopulation, promiscuity, poor hygiene, precarious quality of life and total lack of health care. This picture is source of propagation of several inter-human transmitted diseases among which skin infectious diseases. It has been clearly shown for instance that skin diseases are the most frequent reasons motivating prisoners to consult.[1]

To the best of our knowledge, no previous study has been conducted in Cameroon dedicated at evaluating the magnitude of skin diseases among prisoners. We therefore undertook the present survey, the aim of which was to determine the profile of skin-related diseases and infecions among Cameroonian prison inmates.

Methods

This was a cross-sectional study held during three months, from Febuary to April 2014, at the Mfou Pricipal Prison (MPP), one of the 6 main prisons located in the Centre region of Cameroon. Mfou is the capital city of the Mefou and Afamba division, situated 17 km away from the political capital of Cameroon, Yaoundé. Its prison was constructed in 1976 with a capacity of 100 inmates, but there were 369 prisoners present at the MPP during our study

period (334 men and 35 women). Consequent major problems faced by MPP inmates are overcrowding with limited beds, inadequate water supply and medication. Nevertheless, most prisoners have at least a daily bath and do laundry at least twice weekly. This prison is made up of two camps known as quarters: the male and females' quarters, and is managed by a superintendent. The males' quarter is composed of 10 cells, one for minors and 9 for adults while the females' quarter comprises 5 cells without any age distinction. MPP has an infirmary managed by two state-registered nurses who carry-out daily consultations.

All the procedures used in the present study were in keeping with the current revision of the Helsinki Declaration. A Written and signed informed consent was provided by all the participants or their guardians (for minors). Consent forms and procedures, as well as survey protocol, were approved by the ethical committee of the Faculty of Medicine and Biomedical Sciences, Cameroon. We did obtained an administrative authorization provided by the superintendent of the prison before initiating any recruitment.

Participants were prisoners who volunteered to take part in the study regardless of their age, sex or physical condition and obviously present at MPP during the study period. For the purpose of the study, free medical consultations were organized at the MPP infirmary. Prior to enrollment, an intensive and repeated sensitization of prisoners was performed in their cells by the investigators. Concurrently, the prison staff also briefed inmates on the opportunity and benefits of having a medical examination. All prisoners feeling as to be sick or not were thus advised and encouraged to seek for medical consultation, more so as it was free of charge.

In order to undergo the medical consultation, the prisoner was allowed to leave his/her cell and reach the infirmary. There, all the aspects of the study were presented to the prisoners (or their guardians for minors) and those willing to participate in the study signed the consent form before being recruited. Participants were consecutively and exhaustively enrolled during the study period using a structured questionnaire, anonymously collecting data on socio-demographic background (cell number, age, sex, marital status, religion, level of education, and duration of imprisonment). The other part of the questionnaire served to record medical information. A complete dermatological examination was afterwards undertaken by two experienced dermatologists each of whom concluded on a diagnosis based both on anamnesis and clinical findings. Discordant diagnoses were excluded from the analyses. After consultation and before giving the treatment, all the participants were counseled on some basic hygiene rules and on how to disinfect clothes and sheets using boiled water.

Data were subsequently coded and entered using an excel spread sheet, and then analysed with SPSS version 17.0. Descriptive statistics were performed using absolute numbers, percentages, ranges and measures of central tendency accordingly.

Results

Of the 369 prisoners present at MPP during the study period, 217 agreed to participate in this survey, thus a response rate of 58.8%. Table 1 displays the age distribution among our participants. Age ranged from 14 to 60 years old, with a mean of 32 ± 4.7 years. The most represented age groups were 21-30 and 31-40 years (34.6% each). The male sex was the most encountered one: 201/217 (92.6%) with a sex ratio of 12.6/1. As depicted by table 2, Christianism was the dominating religion: 189/217 (87.1%). Besides, almost half of our inmates (45.6%) attended primary school, and not more than 11 (5.1%) prisoners reached the university or college. Eventually, 137 (63.1%) prisoners were single and 74 (34.1%) were married.

Table 1. Age distribution of the participants

Age Group	Male		Female		Total	
(years)	Number	(%)	Number	(%)	Number	(%)
20-Nov	21	10.4	0	0	21	9.6
21-30	69	34.3	6	37.5	75	34.6
31-40	71	35.3	4	25.0	75	34.6
41-50	31	15.4	2	12.5	33	15.2
51-60	9	4.5	4	25.0	13	6.0
Total	201	100.0	16	100.0	217	100.0

One hundred and twenty four inmates (57.1%) exhibited skin diseases, 14 (11.3%) of whom had more than one skin disease. The different skin diseases we recorded are presented in table 3. Scabies, eczema, dermatophytosis (specifically tinea corporis), pityriasis versicolor and acne were the predominant skin diseases registered: 71.8%, 9.7%, 5.6%, 4.8% and 3.2% respectively. Figures 1 and 2 depict 2 prisoners presenting with lesions of scabies, the first one being complicated by eczematisation.

Figure 1. A prisoner presenting with diffuse lesions of scabies complicated by eczematisation

Figure 2. Crusty lesions of scabies at the penile shaft

Discussion

This study carried-out among Cameroonian prisoners showed that skin diseases are not infrequent in these settings. We found indeed human scabies, eczema and dermatophytosis to be the major skin diseases registered. The MPP was initially advocated at receiving 100 inmates but we found 369 prisoners living in the milieu (made up of 15 cells), resulting as a consequence in overcrowding and promiscuity. In association with poor hygiene, precarious quality of life and lack of health care, these factors are leading causes responsible for the spreading of diseases transmitted though inter-human contact such as scabies and mycoses among others[2,3].

Table 2. Other socio-demographic characteristics of the study population

Characteristic		Male		Female		Total	
		Number	(%)	Number	(%)	Number	(%)
Religion	Christian	173	86.1	16	100	189	87.1
	Muslim	24	11.9	0	0	24	11.1
	Others	4	2	0	0	4	1.8
Educational Level	No formal education	20	10	04	25	24	11.1
	Primary	94	46.8	05	31.3	99	45.6
	Secondary	80	39.8	03	18.8	83	38.2
	Tertiary	07	3.5	04	25.0	11	5.1
Marital status	Single	132	65.7	05	31.3	137	63.1
	Married	65	32.3	09	56.3	74	34.1
	Separated	3	1.5	01	6.3	4	1.8
	Widow(er)	1	0.5	01	6.3	2	0.9

Table 3. Profile of skin diseases encountered

Pathology	Male		Female		Total	
	Number	(%)	Number	(%)	Number	(%)
Scabies	86	42.8	3	18.8	89	71.8
Eczema	11	5.5	1	6.3	12	9.7
Dermato-phytosis	5	2.5	2	12.5	7	5.6
Pityriasis versicolor	2	1.0	4	25.0	6	4.8
Acne	3	1.5	1	6.3	4	3.2
Prurigo	2	1.0	0	0.0	2	1.6
Drug Erup-tion	1	0.5	0	0.0	1	0.8
Genital warts	2	1.0	0	0.0	2	1.6
Onchocer-chiasis	1	0.5	0	0.0	1	0.8
Total	113	56.2	11	68.8	124	100.0

It is high time strong and efficient actions should be undertaken to solve the problems of overpopulation, health care and quality of life in Sub-Saharan African prisons keeping in mind that prisoners are before and afterall human beings with consequent attention and needs.

The age of prisoners ranged from 14 to 60 years with a mean of 32 ± 4.7 years, and the majority (69.1%) of inmates was aged between 21-40 years. This is unsurprising as the pyramidal structure of the Cameroonian population is dominated by youths. Moreover, the high rate of youth unemployment, coupled to poor civic education at school, may also explain this predominance of young men and women at MPP.

The prevalence of skin diseases at MPP (57.1%) corroborates results obtained by Rahmati Roodsari M. et al.[4]in Iran showing that 55.7% of inmates exhibited skin diseases in Ghezel Hesar prison. However, a study conducted by Bissek et al.[5]in rural settings of Cameroon revealed a prevalence of skin diseases of 62%. Scabies was the most frequent skin disease we encountered (41%). This prevalence is particularly high compared to the 2.8% registered among inhabitants of the rural settings of the Mbam division of Cameroon[5]. This particularly high prevalence could be justified by poorer sanitary conditions in MPP as well as excess overcrowding in the milieu, as it has clearly been pointed out that this is a risk factor for the spreading of human scabies[1,3,6-8]. Second after scabies was eczema exhibited by 12 (9.7%) of our inmates with 8 of them equally presenting with scabies. Similar findings were obtained by Bimal kanish et al. in the central jail of Punjab where eczema accounted for 21.0% of skin diseases [8]. Flares of condition like eczema are known to occur under conditions of increased stress as it was claimed by kimyai-Asadi et al.[9].

Equally present among these prisoners was dermatophytosis affecting 5.7% of inmates. This can be explained by the hot and humid climate of the tropics. Indeed, Kandhari et al. reported that dermatophytosis is more common in hot and humid climates[10].

Besides, Kuruvila et al. found that dermatophytosis were the most common skin diseases among Mangalore prison inmates, India, accounting for 53.6% of dermatosis in this penitentiary, scabies being the second dermatosis encountered (16.0%)[11].

Other skin diseases present at MPP were pityriasis versicolor (2.8%), acne (1.8%), prurigo (0.9%), fixed pigmented erythema (0.5%), genital warts (0.9%) and onchocerciasis (0.5%). These results are in line with Akakpo et al. findings in Lomé prison [12]. Though, in our study, scabies was the most common dermatosis especially among male prisoners, Pityriasis versicolor was the most common skin disease recorded among female inmates (25% of women infected).

Unfortunately, the sampling method used precluded us from any generalization of our results to the entire Cameroonian population of inmates. What's more, the cross-sectional design of the study as well as the small sample size impeded us to seek for independent factors influencing the occurrence of various skin diseases among our respondents. The diagnosis was only based on clinical evaluation as no laboratory workup was undertaken either to confirm the suspected lesion or to identify prisoners being ill but asymptomatic. However, clinical examinations were performed by experienced dermatologists, and their results were cross-checked so as to enhance reliability. Discordant diagnoses were excluded from the analyses.

Conclusion

There is a high prevalence of skin diseases among prisoners at the Mfou Principal Prison, of which scabies (71.6%), eczema (9.7%), dermatophytosis (5.6%) and pityriasis versicolor (4.8%) were the prevailing skin diseases encountered. There is urgent need to implement strong and efficient interventions in order to solve the problems of overpopulation, poor hygiene, precarious quality of life and lack of health care in our prisons.

References

[1]. Adamski H, Chiron R, Paysant F, Taverson A, Bernard B, Veillard D, Chevrant-Breton J, Le Guent-Develay M. Consultation de dermatologie dans un centre pénitentiaire de femmes : analyse de six années d'activité. *Ann Dermatol Venereol* 2008 ;135 :682-90.

[2]. Sfia M, Dhaoui MA, Jaber K, Youssef S, Doss N. Association gale et dermatophytose. *Ann Dermatol Venereol* 2007 ;134 :794-5

[3]. Revuz J. La gale dans les maisons de retraite. *Concours Méd* 1994 ;116 :2325-9.

[4]. Rahmati RM, Malekzad F, Rahmati RS. Prevalence of scabies and pediculosis in Ghezel Hesar prison. *Iranian Journal of Clinical Infectious Disease* 2007;2(2):87–90.

[5]. Bissek AC, Tabah EN, Kouotou EA, Sini V, Yepnjio FN, Nditanchou KR, et al. The spectrum of skin diseases in a rural setting in Cameroon (sub-Saharan Africa). *BMC Dermatol*. 2012 Jun 21;12(1):7.

[6]. Ceulemans B, Tennstedt D, Lachapelle JM. La gale humaine : Réalités d'aujourd'hui. *Louvain médical A*. 2005 ;124(6) :S127-S133.

[7]. Gaspard L, Laffitte E, Michaud M, Eicher N, Lacour O, Toutous-Trellu L. Scabies in 2012. *Rev Med Suisse*. 2012 Apr 4 ;8(335) :718-22, 724-5.

[8]. Bimal Kanish, Anuradha Bhatia. "Pattern of Cutaneous Disease in Inmates of Central Jail, Ludhiana, Punjab". *Journal of Evolution of Medical and Dental Sciences 2014*; Vol. 3, Issue 14, April 07; Page: 3679-3681, DOI: 10.14260/jemds/2014/2342.

[9]. Kimyai-Asadi A, Usman A. The role of psychological stress in skin disease. *J Cutan Med Surg*. 2001 Mar 1;5(2):140–5.

[10]. Kandhari KC, Sethi KK. Dermatophytosis in Delhi area. *J Indian Med Assoc* 1964; 42: 324.

[11]. Kuruvila M, Shaikh M, Kumar P. Pattern of Dermatoses Among Inmates of District Prison-Mangalore. *Indian J Dermatol Venereol Leprol*.2002; 68:16-8.

[12]. Akakpo AS, Ekouévi D, Mouhari-Toure A, Saka B, Sogan A, d'Almeida S, Kombate K, Tchangai-Walla K, Pitche P. Pathologies cutanées chez les détenus en milieu carcéral à Lomé, Togo: étude de 194 cas. http://dx.doi.org/10.1016/j.annder.2013.01.136