



## **Pattern of Skin Diseases in Yenagoa, Nigeria: A Hospital Based Study**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. Author DA designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors UO and BOO managed the analyses of the study. Author BOO managed the literature searches. All authors read and approved the final manuscript.*

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### **ABSTRACT**

**Background:** There are no studies about the prevalence of skin diseases in Yenagoa, Bayelsa state. An area of swamp, mangrove and tropical rain forest with various factors influencing skin diseases.

**Aim:** To find out the pattern of skin diseases in relation to age and sex and compare with similar studies.

**Methods:** Collection of data of all new patients that attended the Dermatology out-patient clinic of the Federal Medical Centre Yenagoa within an 8 months period from May to December 2020. Diagnosis was mostly made on clinical basis, though laboratory investigations requested to confirm our diagnosis when needed.

**Results:** The total number of new patients attended to in the dermatology out-patient clinic between May to December of 2020 was 167. Comprising of children 41 (24.6%) and adults 143 (75.4%), among which males were 65 (38.9%) and 102 (61.1%) were females. Overall, infective conditions of the skin and subcutaneous tissues were the most common (36%), followed by

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papulosquamous disorders (34%) and eczema (30%). With pigmentary disorders, pruritus and urticaria and autoimmune disorders accounting for 17%, 13% and 3% respectively.

**Conclusion:** The incidence of infective dermatoses was found to be higher than non-infective dermatoses. This provide baseline information on the prevalence of skin disease in the study population and assist with ensuring the right services are made available to meet patient's needs.

*Keywords: Subcutaneous tissues; papulosquamous disorders; eczema; pigmentary disorders; skin diseases.*

## 1. INTRODUCTION

Skin diseases are among the most common of all human health afflictions and affect almost 900 million people in the world at any time. Several skin diseases are associated with long term disfigurement, disability and stigma. The global burden of disease project has shown that skin diseases continue to be the 4<sup>th</sup> leading cause of nonfatal global health burden [1]. However, poor hygiene, lack of basic amenities and overcrowding play an important role in the occurrence of a number of skin diseases. Also, the lack of basic knowledge of simple features of skin diseases at the primary care level adds to the burden of skin diseases [2,3].

The prevalence of skin diseases in an area is influenced by climate, geography, genetics and socioeconomic status as well as nutritional and other environmental factors in the community [4,5]. Skin diseases account for a significant cause of morbidity in our environment, although with no previous studies, it is expected that a varying pattern of skin diseases will be observed at any one time in a community due to the dynamic factors influencing this [6].

Although, hospital prevalence studies do not reflect the exact situation in a community, they are an indication of the magnitude of any problem and may be used to develop strategies to eradicate or minimize such problems [6].

### 1.1 Aims

The study was conducted with the intention of finding out the prevalence of skin diseases in relation to age and sex and compare with similar studies.

## 2. MATERIALS AND METHODS

The study was conducted amongst new patients attending the Dermatology outpatient clinic, of the Federal Medical Centre, Yenagoa, Bayelsa

state over a period of 8 months (from May to December of 2020). A total number of 167 new patients were enrolled at the out-patient clinic within this specified period. Ethical approval from the ethical review committee of the Federal Medical Centre Yenagoa was obtained before commencement of the study.

### 2.1 Selection Criteria

1. Inclusion criteria: Patients of all ages newly registered at the DOPC of our medical facility with skin diseases and both sexes. With a verbal consent for the study obtained from all adults and parent/guardian of younger patients.
2. Exclusion criteria: Patients on follow-up care and cases with doubtful diagnosis were excluded from the study.

A detailed history of the complaint, complications if any, care prior to hospital visit, past medical and surgical history, drug history were obtained from the patients and a thorough physical examination carried out in all cases. Baseline investigations were carried out in most cases and specific investigations such as skin scrapping for mycology, skin biopsy, bacterial smear and culture and slit smear were requested when necessary.

## 3. RESULTS

A total of 328 patients presented in the Dermatology outpatient clinic over a period of 8 months. Out of which 161 patients came for hospital follow-up visit, while 167 patients were registered as new cases. This group comprised of 65 (38.9%) males and 102 (61.1%) females and male female ratio was 1:1.6. The age range noted was 3 months to 78 years with a mean age of  $32.2 \pm 7.4$  years. The majority of the patients fall within the age range of 20 – 40 years.

The pattern and frequency of skin diseases in our study is demonstrated in Table 1.

**Table 1. Distribution of infectious causes of skin disorders by age and gender**

<b>Skin diseases</b>	<b>Male</b>	<b>Female</b>	<b>&lt;18 Years</b>	<b>&gt;18 Years</b>	<b>Percentage (%)</b>	<b>Total</b>
<b>1. Skin Infection</b>					21.6	<b>36</b>
a. Tinea corporis	1	7	4	4	4.8	<b>8</b>
b. Tinea versicolor	6	1	1	6	4.2	<b>7</b>
c. Candida intertrigo		1		1	0.6	<b>1</b>
d. Scabies	2	5	1	6	4.2	<b>7</b>
e. Tinea cruris	2			2	1.2	<b>2</b>
f. Furunculosis		1		1	0.6	<b>1</b>
g. Tinea pedis		2	1	1	1.2	<b>2</b>
h. Epidemodysplasiaverruciformis	1			1	0.6	<b>1</b>
i. Kaposi sarcoma	1			1	0.6	<b>1</b>
j. Herpes zoster	2	2		4	2.4	<b>4</b>
k. Syphilis	2			2	1.2	<b>2</b>
<b>2. Eczema</b>					18.0	<b>30</b>
a. Contact allergic dermatitis	4	2	1	5	3.6	<b>6</b>
b. Venous ulcer		1		1	0.6	<b>1</b>
c. Atopy dermatitis	7	7	10	4	8.4	<b>14</b>
d. Seborrheic dermatitis	2	7	1	8	5.4	<b>9</b>
<b>3. Papulosquamous disorders</b>					20.3	<b>34</b>
a. Lichen planus	5	14	2	17	11.4	<b>19</b>
b. Pityriasis rosea	1	4	1	4	3.0	<b>5</b>
c. Psoriasis	3	6	2	7	5.4	<b>9</b>
d. Pityriasis nitidus		1	1		0.6	<b>1</b>
<b>4. Pruritus /Urticaria</b>					7.8	<b>13</b>
a. Aquagenic pruritus		1		1	0.6	<b>1</b>
b. Papular urticaria	4	1	4	1	3.0	<b>5</b>
c. Urticaria	2	5		7	4.2	<b>7</b>
<b>5. Pigmentary disorders</b>					10.2	<b>17</b>
a. Vitiligo	3	9	8	4	7.2	<b>12</b>
b. Exogenous onychosis	1	2		3	1.8	<b>3</b>
c. Naevus	1	1		2	1.2	<b>2</b>
<b>6. Autoimmune disorders</b>					1.8	<b>3</b>
a. Pemphigus vulgaris	1			1	0.6	<b>1</b>
b. Alopecia areata	1			1	0.6	<b>1</b>
c. Bullous pemphigoid		1		1	0.6	<b>1</b>
<b>7. Others</b>					20.3	<b>34</b>
a. Acne	6	11	2	15	10.2	<b>17</b>
b. Hypertrophic scar		3		3	1.8	<b>3</b>
c. Warts	4	2	1	5	3.6	<b>6</b>
d. Granuloma annulare		1		1	0.6	<b>1</b>
e. Keloid	3		1	2	1.8	<b>3</b>
f. Post herpetic neuralgia		1		1	0.6	<b>1</b>
g. Palmoplantar keratoderma	1	1		2	1.2	<b>2</b>
h. Frontal fibrosing Alopecia		1		1	0.6	<b>1</b>

From our study on the pattern of skin diseases, infections of the skin and subcutaneous tissues to be the most common affecting 36 (21.6%) patients out of the total number of 167 new cases. Among these patients, Tinea corporis accounted for the majority of cases 8 (4.8%), followed by Tinea versicolor 7 (4.2%) and scabies 7 (4.2%), Herpes zoster 4 (2.4%),

Tinea cruris 2 (1.2%), Tinea pedis 2 (1.2%), syphilis 2 (1.2%), furuncle 1 (0.6%), Tinea intertrigo 1 (0.6%) and Kaposi sarcoma 1 (0.6%). Tinea corporis was found to be more common in females. Adults were noted to be mostly affected by infections of the skin and subcutaneous tissues more than children.



**Fig. 1. Tinea cruris in a 43 year old female, presenting with complains of itching and change in colour of skin around the upper medial aspect of her thigh**



**Fig. 2. Tinea corporis on the right knee of a 23 year old female**

Papulosquamous disorders were seen in 34 (20.3%) patients, with lichen planus noted as the most commonly seen variety, accounting for 19 (11.4%) of cases. Lichen planus was also seen more in the adult group with a female preponderance. Psoriasis 3 (5.4%), pityriasis rosea 5 (3.0%), pityriasis nitidus 1 (0.6%).

Eczema was seen in 30 (18%) patients. Among these patients, atopy dermatitis accounted for majority of cases 14 (8.4%) and was more common in patients less than 18 years with an equal distribution in both genders. Followed by seborrheic dermatitis 9 (5.4%), contact dermatitis 6 (3.6%), Venous ulcer 1 (0.6%).



**Fig. 3. Tinea vesicolor: To the left- a 12 year old male who presented with complaints of hypopigmented patches and to the right- a 27 year old male presented with Papulosquamous disorders**



**Fig. 4. A 34 year old male presenting with complaints of itching, papular skin rash, post inflammatory hyperpigmentation and scarring, a diagnosis of Lichen planus was made after a detailed history, examination and biopsy**



**Fig. 5. Pityriasis rosea in a 23 year old female (skin lesions with herald patch)**

Pruritus and urticaria (7.8%) was seen in 13 patients (7.8%). More common in adults, with Urticaria accounting for 7 (4.2%), Papular urticaria for 5 (3.0%), Aquagenic pruritus 1 (0.6%).

Cutaneous manifestations autoimmune disorders were seen in 3 (1.8%) patients. Pemphigus

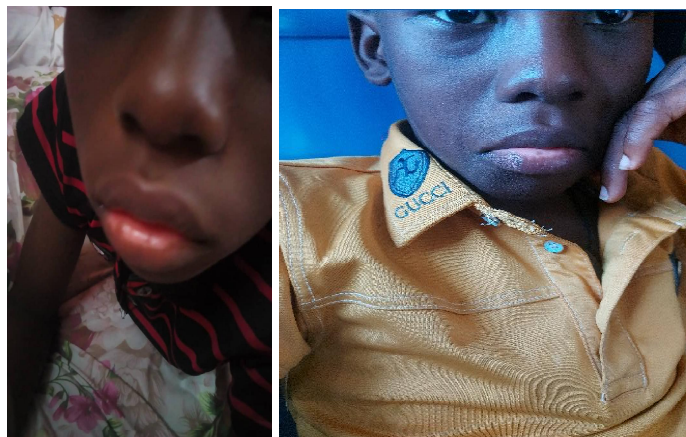
vulgaris 1 (0.6%), Alopecia areata 1 (0.6%), bullous pemphigoid 1 (0.6%) (Fig. 10). The miscellaneous group in our study comprised of 34 (20.3%) of patients and included Acne 17 (10.2%), warts 6 (3.6%), Hypertrophic scar 3 (1.8%), keloid 3 (1.8%), Palmoplantar keratoderma 2 (1.2%), Granuloma annulare 1 (0.6%), Frontal fibrosing alopecia 1 (0.6%).



**Fig. 6. Atopy dermatitis in a 15 year old female. Presented with a history of skin rash on flexural regions, itching and skin darkening**



**Fig. 7. A 35 year female with an evanescent rash being managed for Urticaria**



**Fig. 8. Patients with pigmentary disorders were 17 (10.2%). Vitiligo 12 (7.2%), Exogenous onychosis 3 (1.8%), Naevus 2 (1.2%)**



**Fig. 9. A 7 year old male with perioral and acral vitiligo**



**Fig. 10. Bullous pemphigoid in a 40 year old female**

#### **4. DISCUSSION**

To understand the effect of factors influencing the pattern of skin diseases in Yenagoa, it is important to know some facts about the area and its surrounding [7]. Yenagoa, town, capital of Bayelsa state, southern Nigeria, in the Niger River delta. Situated in an area of swamp and mangrove and tropical rain forest.

Geographically, located on longitude 4°55'29"N and latitude 6°15'51"E. The LGA has an area of 706 km<sup>2</sup> and a population of 470,800 (2016) projection from 2006 census. It is home to the Ijaw people, a fishing group. In Yenagoa, the wet season is warm and overcast, the dry season is hot and mostly cloudy. Over the course of a year, the temperature typically varies from 71°F to 87°F and rarely below 63°F or above 90°F.





**Fig. 11. Postherpetic neuralgia in a 19 year old female**

The Federal Medical Centre Yenagoa is the only tertiary health institution with a dermatology out-patient clinic. Attending to patients from varying socio-economic background with a majority in the lower and middle class. Patients are attended in the dermatology out-patient clinic based on referral from either from the general out-patient department, other departments clinic as primary cases or based on referral from the general out-patient department or other departments in the hospital, as well as peripheral health care facilities with or without a referral letter mostly based on difficult to diagnose skin diseases. The number of patients attending the out-patient clinic has increased over the years for several reasons, including better awareness of the public, a state health insurance scheme which covers for 50% of the patient's health care expenses and a growing specialist clinic with more resident doctors.

In our study, it was noticed that females visited the dermatology out clinic of our facility more than males (M/F =1:1.6). Similar female preponderance to those observed in other studies and this may be due to mindfulness of their looks and high sensitivity to health-related issues.

The age groups of 16-30 years were found to have the maximum incidence of skin diseases, followed by 31- 45 years.

Most male patients were in the age group of 20-45 years (58.2%) and majority of female patients were in age group of 16-35 years (64.7%). Other studies on the pattern of diseases in Nigeria also reported similar figures.

Skin infections was found to be the most frequent reason for attendance at our dermatology out-patient clinic, accounting for 36 (21.6%) of the total number of patients. This finding is in agreement with other studies in Nigeria and globally; Altraide et al. [8], Olusola et al. [9], Ayesha et al. [3], Mohammad et al. [10] and Deepak et al. [6].

Fungal infection was the most common entity seen in 16 (9.6%) of the total number of patients made up of mostly adult females in our study, similar to other studies [3,7]. The reason for the incidence of fungal infection in our environment may be due to the warm and humid climate. Other influencing factors including; poor environmental and personal hygiene stemming from the lack of awareness of proper skin care, use of herbal and natural cosmetics [11,12],

overcrowding and lack of basic amenities like purified pipe borne water and electricity. Scabies, caused by the mite *Sarcoptes scabiei* and transmitted by contact with infected persons, clothing and beddings, was mostly noted in adults 7 (4.2%) of the total number of patients. Viral infections accounted for 2.4% of the total number of patients in our study, a slightly higher figure compared to an earlier study performed in south-south Nigeria by Altraide et al. Also, kaposi sarcoma and epidermodysplasia verruciformis occurred in patients with background HIV infection in our study. Papulosquamous disorders. Unlike other studies, Eczema was the third most common diagnosis among our patients [13,14,15,16], with a frequency 30 (18.0%). Atopy dermatitis accounted for a highest proportion with a frequency of 14 (8.4%) with a greater proportion being <18 years of age, followed by seborrheic dermatitis 9 (5.4%) and contact dermatitis 6 (3.6%) of the total number of patients.

Low incidence of STI 2 (1.2%) noted in this study is similar with previous studies. This may be due to private consultations to avoid social stigma [17] and accessibility of over-the-counter medication.

Pruritus and urticaria affected 13 (7.8%) of the total patients. With a broad spectrum, although, most cases were idiopathic.

## 5. CONCLUSION

The prevalence of skin disease varies in location and direct representation of community development as well as public health awareness and accessible health care. In this study a higher incidence in infective dermatoses than non-infective dermatoses were found, with fungal infections being the largest in this category.

## CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

The study was conducted amongst new patients attending the Dermatology outpatient clinic, of the Federal Medical Centre, Yenagoa, Bayelsa state over a period of 8 months (from May to December of 2020). A total number of 167 new patients were enrolled at the out-patient clinic

within this specified period. Ethical approval from the ethical review committee of the Federal Medical Centre Yenagoa was obtained before commencement of the study.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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