

# CLINICAL SPECTRUM OF SKIN DISEASES IN A NEWLY ESTABLISHED DERMATOLOGY CLINIC IN SOUTH-WESTERN NIGERIA: A PRELIMINARY STUDY.

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## ABSTRACT

**BACKGROUND:** Skin diseases are major health problems especially in resource poor countries and one of the most frequent conditions informing hospital visit. Despite its low mortality, morbidity is however remarkable due partly to meagre resources allocated to skin health care and inadequate dermatologists to manage the increasing number of cases. This preliminary study therefore seeks to evaluate the clinical characteristics of skin diseases in a newly established clinic in Owo, a semi-urban settlement, in South-western Nigeria. The data from this study can assist the health policy makers in prioritizing resources allocated to health to improve skin health and also creates awareness on how prevalent skin diseases are in this locality with a view to giving it the desired attention.

**METHODS:** This was a retrospective study carried out between April, 2016 and March, 2017. Information comprising age, sex and diagnoses were retrieved from the medical records of all the patients that attended the Dermatology Clinic within the study period.

**RESULTS:** We reviewed 204 patients' medical records within the study period. The mean age was  $33.88 \pm 20.57$  (SD) years with age ranged between seven months and 81 years. The females formed 55.4% of the patients with male to female ratio of 1:1.2. Infections had the highest prevalence of 33.3% with about half being fungal infections (16.2%). Infections of public health importance like leprosy and onchocerciasis were 1.0% each. Scabies was seen in significant number (6.4%) of the patients. Papulosquamous and reactive dermatoses were seen with equal proportion (10.8% each). Vitiligo was the most common pigmentary disorders found in this study. Acne and acneiform eruptions was 5.4%. Atopic dermatitis was the predominant dermatitis seen among the patients with eczema.

**CONCLUSIONS:** Infectious dermatoses remain the commonest cause of skin diseases. Addressing poverty, instituting public health preventive measures and increase access to dermatologist will enhance patients' skin health.

**CONFLICT OF INTEREST:** There is no conflict of interest.

**RUNNING TITLE:** Skin diseases newly established dermatology clinic

**KEYWORDS:** spectrum, skin, disease, dermatology, clinic

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## INTRODUCTION

Skin diseases constitute one of the major health problems worldwide and one of the major reasons for seeking medical care<sup>1,2</sup> especially in sub-Saharan Africa where a lot of factors contribute to the burden of skin diseases. Among these factors that may contribute to the rising prevalence of skin diseases in Africa are ignorance, poverty, poor hygiene, lack of social amenities, unemployment, overcrowding, low socioeconomic status, occupation, racial and

genetic factors. These factors increase the morbidity and sometimes mortality from skin conditions and consequently contribute to the global burden of diseases. Chante et al.<sup>3</sup> in a study of 306 diseases and injuries reported that skin diseases contributed 1.79% to the global burden of diseases and the fourth leading cause of worldwide disability. Determining the clinical pattern of skin diseases like this study, will provide an insight into the patterns in the general population and assist health policy makers in planning public health interventions and prevention strategies that will ameliorate the burden of skin diseases.

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Previous studies conducted from urban centers in the same geo-political zones with this present study might not have captured the true prevalence of skin diseases in this semi-urban environment surrounded predominantly by agrarian population. This may be due to the fact that many of the patients might not present to those centers because of distance and cost of accessing skin healthcare in the city. This study will therefore provide a more accurate data depicting the prevalence and pattern of dermatoses in Owo and the surrounding agrarian communities.

### AIMS AND OBJECTIVES

To determine the clinical spectrum of skin diseases in a newly establish dermatology clinic in a semi-urban town of Owo, Ondo state, South-Western Nigeria.

### METHODOLOGY

This preliminary study was conducted at Federal Medical Centre, a tertiary health facility located in the semi-urban town of Owo, Ondo state, South-Western Nigeria. The town is surrounded by many agrarian rural communities. The centre was created to serve the state with a population of more than 3.4 million according to 2006 census. It

also subserves part of neighbouring states of Osun, Ekiti and Edo states with a total population of more than 9 million.

This is a cross-sectional retrospective study carried out between April, 2016 and March, 2017. The medical records of the 204 patients seen at the Dermatology Clinic within the study period were reviewed and data such as age, sex and the diagnoses of dermatological diseases were collected using proforma. All patients were examined by Consultant Dermatologists and diagnoses made based on clinical features. Laboratory investigations such as histopathology, skin snip, blood for microfilaria, mycological studies and other relevant investigations were done as indicated. The data collected were coded and analyzed using IBM SPSS Statistics 20.0 and results were presented in tables.

### RESULTS

Table 1 depicts the age group and sex distribution of patients in this study. There were 204 patients comprised of 91 (44.6%) males and 113 (55.4%) females with male to female ratio of 1:1.2. The mean age was  $33.88 \pm 20.57$  (SD) years ranging from 0.58 to 81 years. Majority of the patients (62.7%) were of younger age group, less than 41 years of age.

**Table 1: Age group and sex distribution**

Age	Male N (%)	Female N (%)	Total N (%)
0-10	13 (6.4)	20 (9.8)	33 (16.2)
11-20	9 (4.4)	13 (6.4)	22 (10.8)
21-30	20 (9.8)	25 (12.3)	45 (22.1)
31-40	12 (5.9)	16 (7.8)	28 (13.7)
41-50	16 (7.8)	19 (9.3)	35 (17.2)
51-60	9 (4.4)	12 (5.9)	21 (10.3)
61-70	5 (2.5)	2 (1.0)	7 (3.4)
71-80	7 (3.4)	5 (2.5)	12 (5.9)
81-90	0	1 (0.5)	1 (0.5)
Total	91 (44.6)	113 (55.4)	204 (100.0)
Mean age	$33.88 \pm 20.57$		
Male to Female ratio	1:1.2		

The distribution of skin disease in group and their percentages are shown in Table 2. The most common disease group were infections. This was followed by eczema, papulosquamous and reactive dermatoses in equal proportion of 10.8% each. These top four skin disease groups constituted 65.7% of all skin disease categories. Skin tumours were the least dermatoses seen only in 10 (4.8%) patients. The group classified as others were 28 (13.7%) patients and comprised of skin diseases like miliaria rubra, alopecia areata, connective tissue diseases, senile xerosis, leg ulcers and plantal hyperkeratosis.

**Table 2: Distribution of groups of skin diseases.**

Skin diseases group	Frequency N	Percentage %
Infections	68	33.3
Dermatitis/Eczema	22	10.8
Papulosquamous diseases	22	10.8
Reactive dermatoses	22	10.8
Pigmentary dermatoses	21	10.3
Acne and Acneform eruptions	11	5.4
Skin tumours	10	4.9
Others	28	13.7
<b>Total</b>	<b>204</b>	<b>100</b>

Table 3 shows the distribution of specific skin diseases in this study. More than 40 specific skin diseases were observed and the leading five skin diseases arranged in descending order of occurrence were tinea infection 14 (6.9%), scabies 13 (6.4%), pityriasis versicolor 11 (5.4%), vitiligo 11 (5.4%) and viral warts 10 (4.9). Leprosy and onchocerciasis which are diseases of public health importance were seen with equal frequency of 2 cases each.

**Table 3: Distribution of specific skin diseases.**

S/N	Skin diseases	Frequency (N=204)	Percentage (%)
1	Tinea infection	14	6.9
2	Scabies	13	6.4
3	Pityriasis versicolor	11	5.4
4	Vitiligo	11	5.4
5	Viral wart	10	4.9
6	Acne vulgaris	10	4.9
7	Atopic dermatitis	9	4.4
8	Papular urticarial	8	3.9
9	Chronic urticarial	8	3.9
10	Lichen planus	7	3.4
11	Psoriasis	7	3.4
12	Candidiasis	7	3.4
13	Senile pruritus	6	2.9
14	Post-inflammatory hyperpigmentation	6	2.9
15	Epidermal nevus	5	2.5
16	Seborrheic dermatitis	5	2.5
17	Pityriasis rosea	4	2.0
18	Alopecia areata	4	2.0
19	Lichen simplex chronicus	4	2.0
20	Follicular hyperkeratosis	4	2.0
21	Exfoliative dermatitis	4	2.0
22	Fixed drug eruption	4	2.0
23	Drug reaction	3	1.5
24	Genital wart	3	1.5
25	Plantar hyperkeratosis	3	1.5
26	Contact dermatitis	2	1.0
27	Albinism	2	1.0
28	Leprosy	2	1.0
29	Exogenous onchocerciasis	2	1.0
30	Onchodermatitis	2	1.0
31	Other	24	11.7
<b>TOTAL</b>		<b>204</b>	<b>100</b>

The distribution of skin infections are shown in Table 4. Of the sixty-eight (33.3%) patients with skin infections, fungal infections were the commonest with prevalence of 16.2%. Parasitic infections (scabies 6.4% and onchocerciasis 1.0%) and viral infections (viral wart 4.9%, viral exanthema 0.5%, genital wart 1.5%, chicken pox 0.5%) occurred with equal prevalence of 7.4% each. Five (2.5%) patients had bacterial infections (Leprosy 1.0%, syphilis 1.0%, furunculosis 0.5%).

**Table 4: Relative frequency of skin infections.**

<b>Skin infection</b>	<b>Frequency N=204</b>	<b>Percentage %</b>
<b>Fungal infections</b>	<b>33</b>	<b>16.2</b>
Dermatophytes	14	6.9
Tinea corporis	3	1.5
Tinea incognito	2	1.0
Tinea manum	1	0.5
Tinea pedis	5	2.5
Tinea unguim	3	1.5
Candida infections	7	3.4
Candida intertrigo	2	1.0
Candida paronychia	1	0.5
Cutaneous candidiasis	4	2.0
Pityriasis versicolor	11	5.4
Cutaneous cryptococcosis	1	0.5
<b>Parasitic infestations</b>	<b>15</b>	<b>7.4</b>
Scabies	13	6.4
Onchocerciasis	2	1.0
<b>Viral infestation</b>	<b>15</b>	<b>7.4</b>
Viral wart	10	4.9
Viral exanthema	1	0.5
Genital wart	3	1.5
Chicken pox	1	0.5
<b>Bacterial infections</b>	<b>5</b>	<b>2.5</b>
Leprosy	2	1.0
Syphilis	2	1.0
Furunculosis	1	0.5
<b>Total skin infection</b>	<b>68</b>	<b>33.3</b>

## DISCUSSION

This study assessed the distribution of skin diseases in a newly established dermatology clinic in a tertiary hospital located in the south-western part of Nigeria. This survey has shown that the distribution of skin diseases were higher amongst the younger age group similar to previous studies from within and outside Nigeria.<sup>4,5</sup> This probably a reflection of higher population of active younger age group in the society that tend to seek for dermatological consultations than the older age group because of more negative effects dermatoses have on their quality of life. The higher percentage of females with dermatoses in this study is similar to earlier results from other authors.<sup>1,6,7</sup> The preponderance of females with dermatoses may be ascribed to greater health seeking behaviors and increased concern of females about their cosmetic appearance than their male counterparts.<sup>8</sup>

The most common skin diseases in this study were infectious dermatoses (33.3%) similar to previous studies from Nigeria especially rural

communities and other developing countries.<sup>1,4,9-11</sup> The higher relative frequency of infectious dermatoses may be due to the effect of overcrowding, poor personal and environmental hygiene, occupation like farming activities and inadequate social amenities such as portable water, electricity and housing which are prevalent in developing nations and encourage infections spread. However, contrary to the findings from this study, many authors have also reported changes in pattern of skin diseases from urban centers in Nigeria different from ours, making eczema (dermatitis) the commonest dermatosis presenting to dermatologist.<sup>12,13</sup> This has been attributed to effect of industrialization, urbanization, increased socio-economic status and resultant changes in lifestyle and increased exposure to many allergens.<sup>12-14</sup>

Amongst the infectious dermatoses, fungal infections predominate with dermatophytes (6.9%) been the most common and cutaneous cryptococcosis (0.5%) been the least, seen in only one patient. The predominance of fungal

infections in this study is similar to other studies from Nigeria and other developing nations.<sup>7,15,16</sup> Several factors including high humidity, hot tropical climate, poor personal and environmental hygiene were suggested as probable causes.<sup>7</sup> Scabies caused by *Sarcoptes scabiei var. hominis* is a disease of poverty and overcrowding,<sup>17</sup> transmitted by close, prolonged skin-to-skin contact with an infected person, was the commonest parasitic infection found in this study similar to findings by other researchers.<sup>4,13,18</sup> Our findings is however different from that of Atraiide et al<sup>7</sup> who reported low prevalence of scabies. The higher frequency of scabies in our study may be due to the fact that majority of the cases from other units including paediatric age groups were referred to the new dermatology clinic. Besides, lack of timely and appropriate treatment in the past occasioned by inadequate healthcare facilities and resident dermatologist before the new dermatology clinic was established, encouraged person-to-person spread.

Other infectious dermatoses like leprosy and onchocerciasis caused by *Mycobacterium leprae* and *Onchocerca volvulus* respectively, were low in frequency in this study similar to the low prevalence reported by Atraiide et al.<sup>7</sup> and Asokan et al.<sup>19</sup> These infectious diseases though low in frequency, they remain skin diseases of public health importance because of the psycho-social effects it has on the patients and their long time complications<sup>20</sup> such as endemic blindness in onchocerciasis and auto-amputation of the limbs in leprosy. The low frequencies reported from these studies may be because they were hospital-based besides effective WHO spearheaded control programmes.<sup>21,22</sup> Adeyeba et al,<sup>23</sup> Edungbola et al<sup>24</sup> and Uttah et al<sup>25</sup> however documented higher prevalencies in contrast to this study. This is probably due to the fact that their studies were community based and may be a better representation of the prevalence in the entire population.

Eczema, papulosquamous and reactive dermatoses were among the non-infectious diseases noted in this study and they occurred in equal proportion of 10.8%. Dermatitis had been documented in the previous studies to be next to infective dermatoses similar to this study.<sup>5,12,14,26</sup> Other non-infectious dermatoses like vitiligo

(5.4%) was the commonest pigmentary disorder. This was followed by post-inflammatory hyperpigmentation accounted for 2.9%. This finding was similar to earlier report by Altraid et al<sup>7</sup> where pigmentary disorders accounted for 7.4% of their patients. The reported frequency of vitiligo in this present study was however different from that of the general population with prevalence of 0.1% - 2.0% reported by Alkhateeb.<sup>27</sup> This study by Alkhateeb et al was among the Caucasians and patients may not present early unlike the negroid with darker skin contrast and more visible lesions. These patients suffer discriminations, social stigmatization and reduced quality of life, hence the need for them to present early and manage by the dermatologists.<sup>28-31</sup>

Skin diseases with significant cosmetic morbidity such as acne vulgaris (4.9%), fixed drug eruption (1.9%), alopecia areata (1.9%), lichen simplex chronicus (2.0%) and exogenous ochronosis (1%) were also observed to be present in this study. Of importance among these skin diseases is acne vulgaris, a disease of pilosebaceous unit commonly affects adolescents in both sexes and young adult. Previous hospital-based studies showed similar frequency and pattern of acne vulgaris to our study.<sup>7,19</sup> Acne vulgaris not only impair the quality of life of sufferers, it is also complicated by keloidal scars, nodulo-cystic acnes, post-inflammatory hyperpigmentations and significant psychosocial morbidity especially in females.<sup>32</sup> Treatment of these patients by dermatologist will reduce some of these complications.

## CONCLUSION

Infections are major causes of skin diseases in Nigeria. This baseline data can be used to plan effective preventive strategies by health policy makers. Reduction of overcrowding, provision of social amenities such as potable water, adequate housing, and improved environmental and personal hygiene can sufficiently reduce the burden of skin diseases especially the infective ones like scabies. Non-infectious diseases like vitiligo and acne vulgaris with significant impairment on the quality of life should be managed by dermatologist to alleviate the psycho-social effects suffered by these patients and prevent complications. Efforts and resources should be channel towards further development and sustenance of the new dermatology clinic.

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