

# Spectrum of Skin Diseases in Nasarawa State, North-Centre, Nigeria

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**Running head:** Spectrum of Skin Diseases in Nasarawa State

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## ABSTRACT

**Background:** There is limited information on the pattern of skin diseases seen in the North central part of Nigeria. The dermatology clinic of Federal Medical Centre (FMC), Keffi started in February 2014 as the only dermatology clinic in Nasarawa State. We reviewed the pattern of skin diseases seen at the clinic between 2014 and 2019.

**Objective:** To determine the pattern of skin diseases seen at the dermatology clinic at FMC Keffi, Nasarawa State, Nigeria

**Methodology:** This was a retrospective study to review clinic records of all the new patients seen from March 2014 to February 2019. The demographics and diagnoses were extracted. Data was analysed using SPSS 20 statistical software. The findings were compared with studies from other regions of the country.

**Result:** Five hundred and ten new patients were seen during the period under review. Overall, atopic dermatitis (10.6%) was the most common skin disease while acne vulgaris (4.6%) was the most common among adults. Dermatitis (22.5%) and infections/infestations (22.5%) were the most common group of diseases. The ten leading causes of skin diseases were atopic dermatitis (10.6%), tinea infections (6.3%), acne vulgaris (4.6%), vitiligo (4.2%), pityrosporum folliculitis (4.1%), seborrheic dermatitis (3.9%), warts (3.7%), urticaria (3.0%), contact dermatitis (3.0%), lichen planus (2.6%).

**Conclusion:** A wide range of skin diseases were seen. Atopic dermatitis was the most common in our study. The overall pattern of skin diseases mirrors that of other parts of the country suggesting a predominant role of environmental factors. Community based studies will be required to highlight the determinants of these common diseases.

**Keywords:** Skin diseases, Atopic dermatitis, acne vulgaris, North-Central Nigeria

## Spectre des maladies de la peau dans l'État de Nasarawa, centre-nord, Nigéria

### Abstrait

**Contexte:** Il existe peu d'informations sur le schéma des maladies de la peau observées dans le centre-nord du Nigéria. La clinique de dermatologie du Federal Medical Centre (FMC), Keffi a débuté en février 2014 en tant que seule clinique de dermatologie de l'État de Nasarawa. Nous avons examiné le schéma des maladies de la peau observées à la clinique entre 2014 et 2019.

**Objectif:** Déterminer le schéma des maladies de la peau observées à la clinique de dermatologie du FMC Keffi, dans l'État de Nasarawa, au Nigéria

**Méthodologie:** Il s'agissait d'une étude rétrospective visant à examiner les dossiers cliniques de tous les nouveaux patients vus de mars 2014 à février 2019. Les données démographiques et les diagnostics ont été extraits. Les données ont été analysées à l'aide du logiciel statistique SPSS 20. Les résultats ont été comparés à des études menées dans d'autres régions du pays.

**Résultat:** Cinq cent dix nouveaux patients ont été vus au cours de la période sous revue. La dermatite atopique (10,6 %) était la maladie de peau la plus fréquente et l'acné vulgaire (4,6%) était la plus courante chez les adultes. La dermatite (22,5%) et les infections/infestations (22,5%) étaient le groupe de maladies le plus courant. Les dix

principales causes de maladies de la peau étaient la dermatite atopique (10,6 %), les teignes (6,3 %), l'acné vulgaire (4,6 %), le vitiligo (4,2 %), la folliculite à pityrosporum (4,1 %), la dermatite séborrhéique (3,9 %), les verrues. (3,7 %), urticaire (3,0 %), dermatite de contact (3,0 %), lichen plan (2,6 %).

**Conclusion:** Un large variété de maladies de la peau a été observé. La dermatite atopique était la maladie la plus fréquente dans notre étude. Le schéma général des maladies de la peau reflète celui d'autres régions du pays, ce qui suggère un rôle prédominant des facteurs environnementaux. Des études communautaires visant à accentuer les déterminants de ces maladies courantes seront nécessaires.

**Mots clés:** maladies de la peau, la dermatite atopique, l'acné vulgaire, Centre-Nord Nigéria

## Introduction

Skin diseases are an important cause of morbidity in the community. They are associated with significant psychological effects and suicidal ideation in some cases.<sup>1-3</sup> In addition, they are of public health importance leading to reduced work hours, reduced quality of life and increased economic loss.<sup>4,5</sup>

The pattern of skin diseases have been described in different regions of Nigeria more than a decade ago.<sup>6-</sup>

<sup>9</sup> In the north-central region, very few studies had described the pattern of skin diseases. A one year review of patients seen in the dermatology clinic in Jos, Plateau State found that atopic dermatitis was the commonest skin disease.<sup>10</sup> Similarly, Yahaya<sup>9</sup> reported that atopic dermatitis was the commonest skin disease in patients visiting the dermatology clinics about a decade ago in Kaduna, north-west, Nigeria. A similar review done more than three decades ago in the same region reported that skin infections were the commonest dermatological cases.<sup>11</sup> Likewise, this pattern of transition from infections to dermatitis over time has been reported in southern Nigeria.<sup>7, 8</sup> It is necessary to report the recent pattern of skin diseases in the community which is important in planning and distribution of resources.

In addition, the dermatology clinic of Federal Medical Centre (FMC) Keffi was established six years ago and it is the only dermatology clinic in Nasarawa State, Nigeria. A review of the cases seen in the dermatology clinic will provide basic data for further dermatology research in the environment.

In this study, we reviewed the pattern of skin diseases seen at the dermatology clinic at FMC Keffi, Nasarawa State, North-centre, Nigeria in the last five years and compared it with that from the other parts of the country.

## Methods

All the records of the new patients seen by the dermatologist at the dermatology clinic of FMC Keffi, Nasarawa State Nigeria between March 2014 and February 2019 were reviewed. Those with incomplete data were excluded from the study. Ethical approval was obtained from the health research ethics committee (HREC) of the Federal Medical Centre, Keffi before the study was commenced and there was no conflict of interest with regards to the study. The diagnosis of all the skin diseases was made by the dermatologist through proper clinical evaluation and appropriate laboratory investigations. The diagnoses were classified according to the International Classification of Diseases (ICD 11). The age, sex and diagnoses of the patients were retrieved and entered into an excel sheet. The data was subsequently analysed with SPSS 20 statistical software. The continuous variables like age were represented as mean with standard deviation while categorical variables like sex and diagnoses were represented as proportions.

## Results

### Demography

Five hundred and ten new patients were seen at the dermatology clinic during the study period. The mean age of the patients was  $28.40 \pm 16.57$  years with a range of 3 weeks – 87 years. Two hundred and forty four (47.8%) were males while 266 (52.2%) were females. One hundred and twenty eight (25.1%) were less than 18 years while 382 (74.9%) were adults (18 years and above).

### Prevalence of Skin diseases

Five hundred and thirty eight diagnoses were made in all the patients. Fifty seven (10.6%) patients had atopic dermatitis which was the commonest skin disease. Among adults (patients  $\geq 18$  years), acne

vulgaris was the commonest reason for dermatological consultation while among the paediatric age group (patients < 18 years), atopic dermatitis was the commonest skin disease.

Among the various classes of skin diseases, dermatitis and infections/infestations were the commonest groups of skin diseases. The frequency of all the groups of diseases is shown in Table 1 below.

The distribution of dermatitis, infections/infestations, follicular disorders, pigment disorders and papulosquamous disorders are shown in Figures 1 - 4. Alopecia areata was the commonest cause of alopecia, constituting 50% of the alopecias. Other causes of alopecia were female pattern baldness (18.2%), central centrifugal circatricial alopecia (27.3%) and traction alopecia (9.1%). Among patients with disorders of keratinization, palmoplantar keratoderma was the commonest cause, constituting 73.3% of the group. Fixed drug eruption was the commonest cause of cutaneous drug reactions contributing to 44.4% of drug reactions. Other types of cutaneous drug reactions were exfoliative dermatitis (22.2%) and Stevens-Johnson syndrome (33.3%).

Melanoma was the commonest skin cancer comprising of 50% of the skin cancers while neurofibroma (22.7%) and syringoma (22.7%) were the commonest benign tumours. Other common skin tumours seen were Kaposi sarcoma (13.6%) and sebaceous adenoma (18.2%). Discoid lupus erythematosus (83.3%) was the commonest connective tissue. Other connective tissue diseases were scleroderma (16.7%) and systemic lupus erythematosus (8.3%). Pemphigus vulgaris (62.5%) was the commonest immunobullous disease. Other immunobullous disorders were epidermolysis bullosa acquisita (25%) and bullous pemphigoid (12.5%).

The ten leading causes of skin diseases in our clinic were compared with those from other regions in Nigeria (Table 2). The pattern of the leading skin diseases was similar in all the regions except for the frequency of pityrosporum folliculitis (4.1%) which was unusually high, occupying the fifth position.

## Discussion

A total of 510 new patients were seen within the

study period. This was fewer than the number of patients in reports from other dermatology clinics in Nigeria.<sup>7-9</sup>

The pattern of skin disease varied widely like in the reports from other parts of Nigeria. Atopic dermatitis was the commonest skin disease seen in all the patients. This is similar to the findings from the review of dermatology cases in Jos, Kaduna, Ibadan and major cities in Africa.<sup>8-10, 12, 13</sup> Dermatitis and infections/infestations were the leading groups of skin diseases (Table 1). Studies from different parts of Nigeria had reported infections<sup>6, 14, 15</sup> or dermatitis<sup>7-9, 16, 17</sup> as the commonest cause of skin disease. Our finding is similar to the report of Rosenbaum et al that found dermatitis and infections as the leading cause of skin disease in Ghana.<sup>12</sup> Keffi is a semi-urban town providing a transition zone between the developed capital city of Abuja and other rural towns of adjoining Nasarawa State. Patients visiting our hospital are drawn from these areas. While studies from developed cities attribute the high frequency of atopic dermatitis and other dermatitis to the rise in urbanization and industrialization which leads to increased exposure to skin allergens/pollutants and higher risk of allergies, older studies more than three decades ago in these cities documented infections/infestations as the commonest group of skin diseases linked to low socio-economic status.<sup>7-9, 11, 18, 19</sup> In addition, the dry and hot climate in northern Nigeria also contributes to higher frequency of atopic dermatitis.<sup>9</sup> Dry weather leads to increased transepidermal water loss and xerosis which in the presence of allergens can trigger dermatitis.<sup>20, 21</sup> Our situation in Keffi represents a mixture of patients from both rural and urban areas associated with the environmental effects of low socio-economic status and urbanization respectively.

Among adults, acne vulgaris was the commonest skin disease. Similar clinic reviews had reported acne as the commonest skin disease among adults of African descents.<sup>10, 12, 22</sup> Most of the patients had moderate or severe acne with post-inflammatory hyperpigmentation which is a common complication in black skin. There is usually associated significant psychological effect necessitating visits to the clinic.

The ten leading causes of skin diseases (Table 2)

among our patients were atopic dermatitis, tinea infections, acne vulgaris, vitiligo, seborrheic dermatitis, pityrosporum folliculitis, warts, urticaria, lichen planus and contact dermatitis. These were similar to the reports from different parts of Nigeria except for pityrosporum folliculitis which is higher in our report.<sup>7-9, 16-18, 23</sup> Nigeria lies in the tropics with daily maximum temperature of 27° C – 35°C associated with increased tendency for increased UV-induced pigmentation. Most of the patients with pityrosporum folliculitis had used skin lightening creams containing potent steroids in attempts to reduce the pigmentation. This use of steroids as component of skin lightening creams has been documented as a common problem in Nigeria.<sup>24, 25</sup> Overall, this pattern supports a predominant role of similar environmental factors

in determining the distribution of skin diseases across the country despite the multiple ethnic groups.

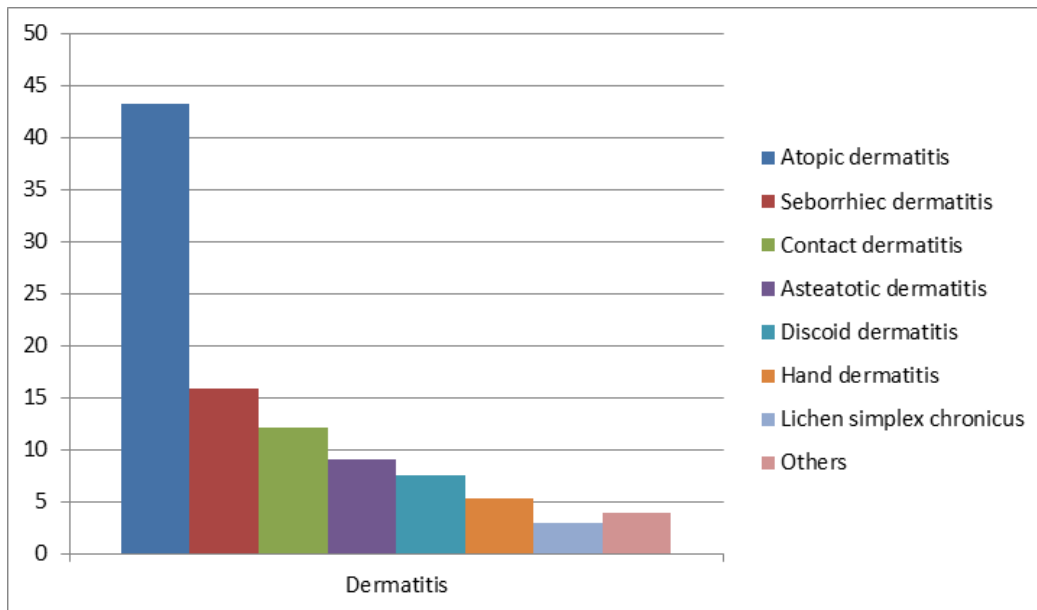
### Conclusion

A wide range of skin diseases was diagnosed during the period of the study. Atopic dermatitis was the commonest skin disease among all the patients while acne vulgaris was the commonest skin disease among adults. The pattern of skin disease mirrors that of other regions of the country suggesting the role of similar factors across the regions. Community based studies will be required to find out the determinants of these common diseases.

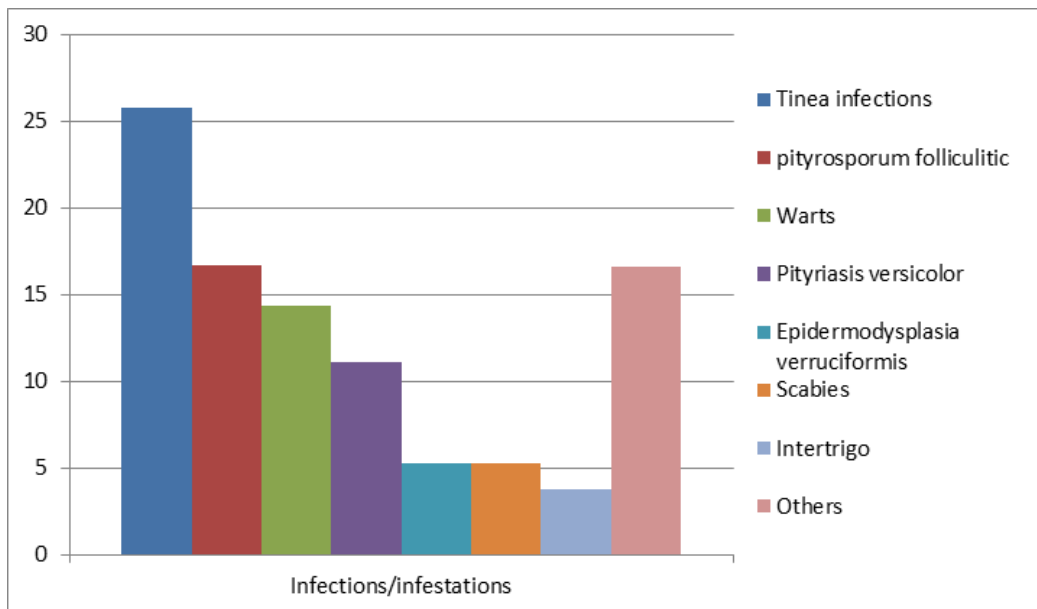
The authors declare no conflicts of interest

**Table 1 Frequency of the various groups of skin diseases**

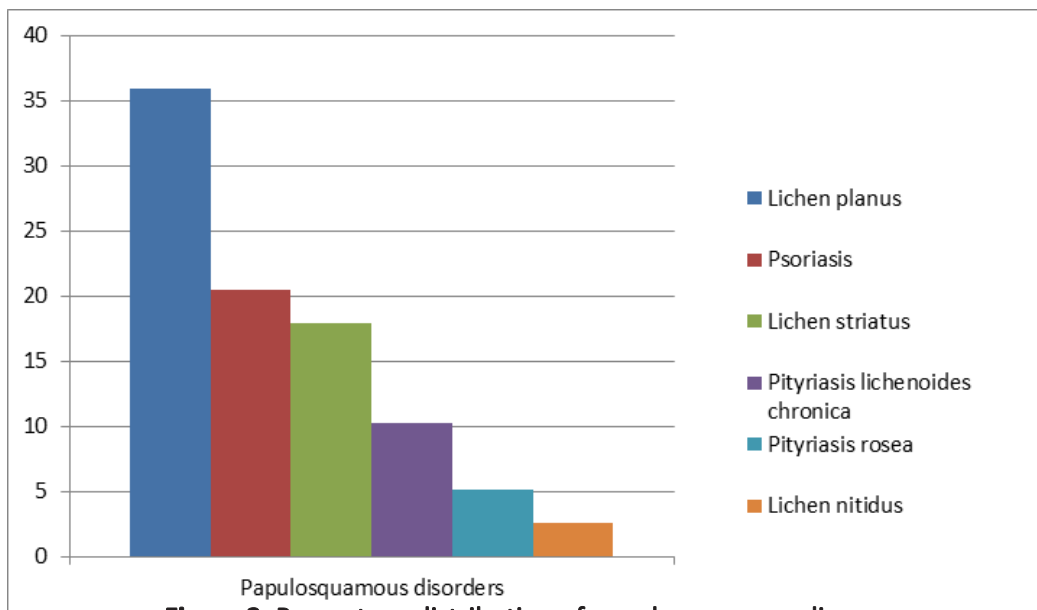
Disease group	Frequency (N)	Percentage (%)
Dermatitis	132	24.5
CTD/Autoimmune disorders	12	2.2
Drug reaction	9	1.7
Follicular disorders	41	7.6
Generalized Pruritus	5	0.9
Granulomatous disorders	4	0.7
Hair disorders	11	2.0
Immunobullous disorders	8	1.5
Infections/Infestations	132	24.5
Keloids/Scars	10	1.9
Keratinizing disorders	15	2.8
Lymphatic/Vascular disorders	4	0.7
Malignant/Premalignant	6	1.1
Naevus	4	0.7
Papulosquamous disorders	39	7.2
Pigment disorders	41	7.6
Tumours	22	4.1
Urticaria and related disorders	33	6.1
Others	10	1.9
Total	538	100.0



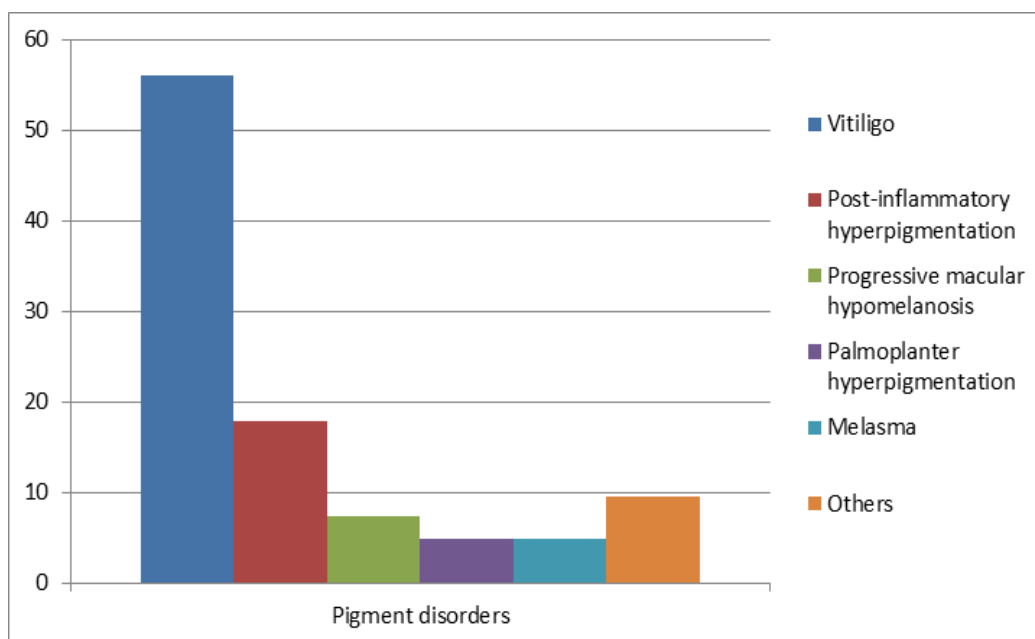
**Figure 1. Percentage distribution of dermatitis**



**Figure 2. Percentage distribution of infection/infestations**



**Figure 3. Percentage distribution of papulosquamous disease**



**Figure 4.** Percentage distribution of pigment disorders

S/N	This Study 2014 – 2018 (n = 506) Keffi		Nnoruka et al 1999 – 2001 (n = 2871) Enugu		Ogunbiyi et al 1994 -98 (n = 1091) Ibadan		Yahaya et al 2000 - 2005 (n = 5982) Kaduna	
1	Atopic dermatitis	10.6	Tinea infection	8.3	Atopic dermatitis	5.8	Atopic dermatitis	13.8
2	Tinea infection	6.3	Contact dermatitis	5.3	Vitiligo	5.7	Acne	6.7
3	Acne vulgaris	4.6	Atopic dermatitis	4.8	Urticaria	4.6	Tinea infection	6.0
4	Vitiligo	4.3	Lichen planus	4.8	Tinea infection	4.5	Contact dermatitis	5.8
5	Pityrosporum folliculitis	4.1	Acne	4.3	Pityriasis versicolor	4.5	Urticaria	3.6
6	Seborrheic dermatitis	3.9	Pityriasis rosea	4.1	Scabies	4.2	Papular urticaria	3.6
7	Warts	3.7	Acne Keloidalis nuchae	3.7	Lichen planus	3.4	Lichen simplex chronicus	3.0
8	Urticaria	3.0	Pseudofolliculitis barbae	3.4	Acne Keloidalis nuchae	2.9	Warts	2.9
9	Contact dermatitis	3.0	Seborrheic dermatitis	3.3	Seborrheic dermatitis	2.9	Candidiasis	2.8
10	Lichen planus	2.6	Vitiligo	3.2	Acne	2.8	Pityriasis versicolor	2.4

**Table 2.** Comparison of the ten leading causes of skin disease with previous reports from other parts of the country

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