



## Pattern of skin disorders in a rural community in Lagos State, Nigeria

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### Abstract

**Background:** Skin disorders are commonly found in the community. In most circumstances, they are easily treatable and preventable. Social and environmental factors play a key role in the epidemiology of skin disease. It is important to assess the dermatological needs of a community as this will help address specific needs. The objective of this study was to identify the skin disorders in a rural community.

**Methods:** This was a cross-sectional study carried out in Epeme, a rural community in Lagos state, South west Nigeria. All consenting adults and children with parental consent that presented for the screening programme were recruited. A self-reported questionnaire was administered by face-to face interview. Socio-demographic data were collected. All those with a skin disease or complaint were further questioned and a clinical examination carried out and findings recorded.

**Results:** There were 263 individuals screened; 156 adults and 107 children. Mean age of adults was  $38.04 \pm 13.04$  years and children  $9.50 \pm 4.67$  years. Thirty adults (19.2%) and 27 (25.2%) children had a skin disorder identified clinically. Among the adults the following categories of skin disorders were found: infection 12 (7.6%), disorders of sebaceous glands 5 (3.2%), pigmentary disorders 2 (1.2%) and pruritus 1 (0.6%). Among children, 21 (19.6%) had skin infections, 2 (1.8%) each with eczema and sebaceous gland disorder. Majority of the infections in children were of fungal aetiology.

**Conclusion:** Infections still remain the major skin disorders in rural communities in Nigeria where dermatologic healthcare is not readily available and accessible.

**Keywords:** pattern, skin disorders, skin infection, rural, community, Nigeria

### INTRODUCTION

Skin disorders can be acute or chronic and can have a significant impact on patients' quality of life, causing physical, social, emotional and financial problems for individuals and their families.<sup>1,2</sup> The importance of skin health is often underrated because of the chronic, non-life threatening nature of most skin diseases. However, the resulting morbidity and discomfort associated with these skin



conditions are among the chief reasons people seek medical care and according to McCoy,<sup>3</sup> these factors represent approximately 24% of why people visit the practitioner.

The pattern of skin disorders in the community vary in several countries and regions based on various factors such as level of education, development of the health care system, infrastructure, sanitation, nutrition, cultural and religious practices.<sup>4</sup> For instance, the pattern of skin diseases seen in Ghana compared to the UK showed that while infections were rampant in Ghana; malignant and premalignant diseases of the skin were the most common conditions in the UK.<sup>5</sup>

The pattern of skin diseases in the community helps to determine the level of infrastructure and expertise that are required, and is useful for planning and increasing access to healthcare in general and improved dermatology care.<sup>4</sup> Capacity building and training of community health care workers will ultimately result in earlier identification of skin diseases and prompt referrals where necessary.

In Nigeria, most studies on the pattern of skin diseases are hospital based<sup>6-10</sup> and there is paucity of data from rural communities. The few studies carried out in rural communities in Nigeria were carried out mainly among school children.<sup>11, 12</sup> Reports from studies in rural communities in Cameroun and India have shown that infections are among the major skin diseases documented.<sup>13, 14</sup>

The pattern and prevalence of skin diseases in the community will assist in planning possible intervention strategies. The aim of this study was to determine the pattern of skin diseases in a rural community in South west Nigeria.

## **METHODOLOGY**

This was a community based cross sectional study carried out in Epeme, a small rural community under ward A of Olorunda Local Council Development Area in the Badagry Local Government Council, which is on the outskirts of Lagos State. The people are of the Awori tribe with a population of about 500. They are engaged in diverse occupations which include trading, fishing, mat weaving and farming. The closest health facility to Epeme is a primary health care centre located in Ajido (12 kilometres away) which is in another ward in Badagry local government. Located in this community is a jetty and the Whispering Palms which is a notable resort centre. There are 5 primary healthcare facilities in Badagry, serving a population of approximately 238,000.<sup>15</sup>

### **Community Entry**

Permission was obtained from the head of the community, as well as the local government council. A pre - sensitisation program was carried out prior to the study. The study site was the Epeme village primary school.

### **Data collection**

All consenting adults and children with parental consent that presented for the screening programme were enrolled and self-reported questionnaires were administered in a face to face interview by



trained interviewers. Socio-demographic data were recorded. All participants who reported any skin disease were further questioned and then examined by the dermatologist and diagnoses was made based on clinical features.

### Data management and analysis

Skin disorders were broadly categorised into the following groups: infections/infestations, eczema, pruritus/urticaria, tumors, alopecia and hair disorders, bullous disorders, pigmentary disorders and disorders of sebaceous glands, papulosquamous disorders, connective tissue disorders and miscellaneous group.

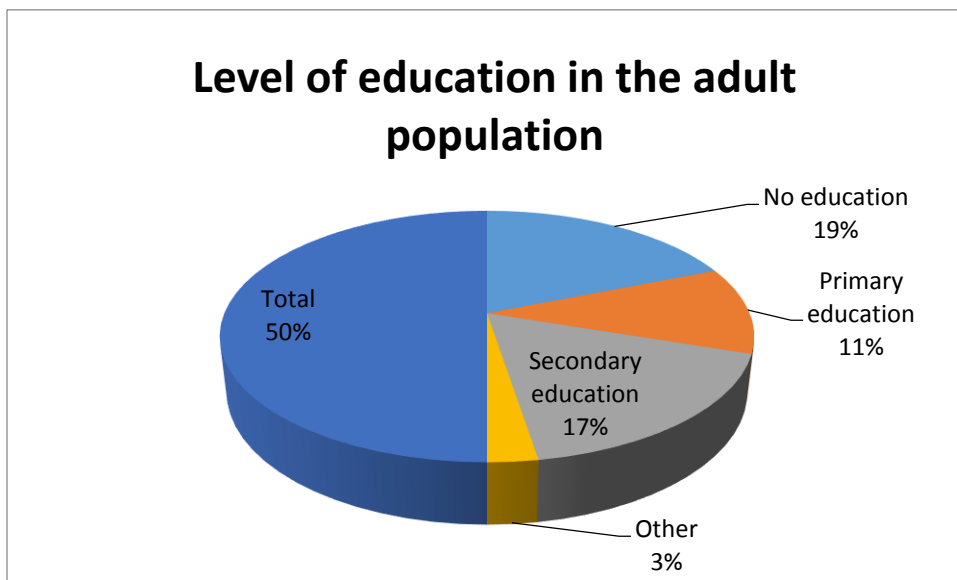
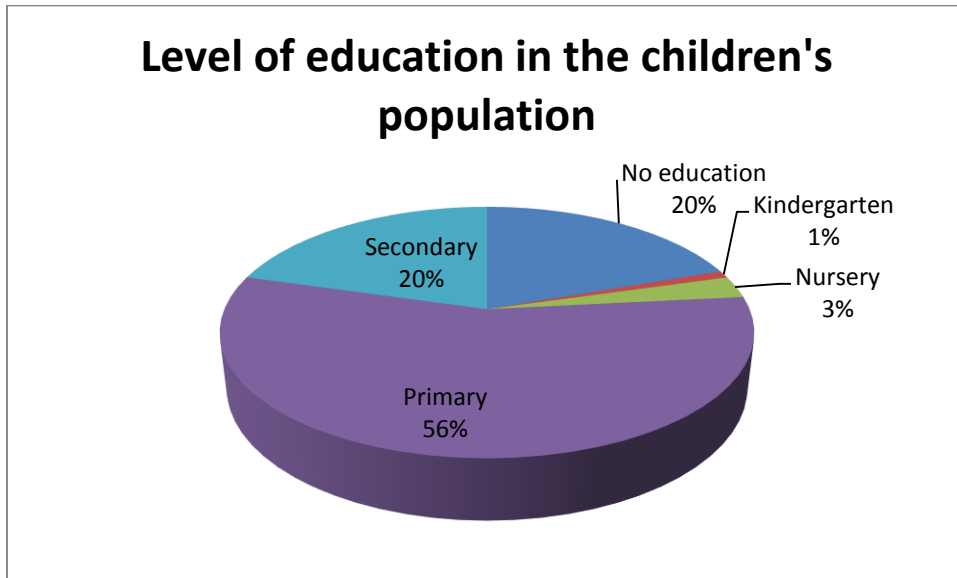
The statistical package for social sciences (SPSS) Version 11 was used to enter data. The categorical variables were compared using Chi square and Fisher's exact tests where necessary. Continuous variable estimates were expressed as mean  $\pm$  standard deviation (SD), while categorical variables were expressed in proportions and percentages. The statistical significance level was set at  $P < 0.05$ .

### RESULTS

A total of two hundred and sixty-three subjects were screened, comprising 156 adults ( $\geq 18$  years) and 107 children ( $<18$  years). In the adult group, there were 50 (32.1%) males and 106 (67.9%) females, and the mean age was  $38.04 \pm 13.04$  years. Majority of the study population were in the 3<sup>rd</sup> decade of life. Seventy-five percent of the adult population were married and 10.9% were widowers. Sixty-two percent of the population had some form of education (primary level education and above), while 38 % had no formal education. (Figure 1) Just under half of the population (48.7%) was engaged in trading and business, 9.0% were artisans, 5.8% were drivers, 3.8% tailors. 3.2% food sellers, 3.8% students, 8.3% had other occupations (housewives, security guard, farmer, brick layer, clergy, teaching) and 17.3% did not document their occupations.

A total of 30 (19.2%) persons in the adult group had a skin complaint and the duration of the various complaints ranged from 2 weeks - 10 years. Some had one or more complaints: sixteen persons (10.3%) complained of a rash, 15 (9.6%) of pruritus, 4 (2.6%) of an ulcer and 2 (1.3%) of mouth lesions. The parts of the body where they reported a complaint were the face 5 (5.8%), upper limb 4 (2.6%), scalp 4 (2.6%), lower limbs 3 (1.9%), trunk and genitalia both 2 (1.3%) each and other body parts affected were 3 (1.8%). Of those who had a skin complaint (30; 19.2%), 26 (16.2%) of them were found to have a skin disorder following examination.

The following categories of skin disorders were documented: infection 12 (7.6%), disorders of skin appendages 5 (3.2%), pigmentary disorders 2 (1.2%), pruritus 1 (0.6%), miscellaneous group 6 (3.6%) (Table 1).



**Figure 1. Level of education among the Epeme study population**



**Table 1. Location of skin disorders**

Location of skin disorder	Children		Adult	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
LL	3	2.8	3	1.9
UL	0	0.0	4	2.6
Face	5	4.7	9	5.8
Scalp	20	18.7	4	2.6
Trunk	1	0.9	2	1.3
Genitalia	0	0.0	2	1.3
Others	1	0.9	3	1.8

LL = lower limbs, UL = upper limbs

Overall, there was a low frequency of skin disease in the community, with infections representing less than 10%; mainly comprising of fungal infections (Pityriasis versicolor and Tinea corporis). Among the category of the disorders of skin appendages were acne vulgaris and acne keloidalis nuchae; while pigmentary disorders noted were naevi and post-inflammatory hyperpigmentation. The other skin disorders group comprised of post bleaching syndrome, chronic leg ulcer and miliaria.

In the children's group, there were 55 (51.4 %) males and 52 females (48.6 %). The mean age was  $9.50 \pm 4.67$  years and the age range was 2 to 18 years. Majority (80.4%; 86) of the children were attending school with most of them at primary school level. This comprised of kindergarten (1; 0.9 %), nursery (3; 2.8%), primary (60; 56.1 %) and secondary (22; 20.6 %) levels and 21 (19.6%) had no formal education. (Figure 1) Some of the children not attending school were involved in farming, fishing, trading and artisan work.

A quarter (25.2%; 27) of the children had a skin complaint and the duration of their complaints ranged from 1 week to 2 years. Among this group with skin complaints, they were all confirmed to have a skin disorder. The major complaint was a rash (25; 23.4%), pruritus (11; 10.3%) and ulcer (2; 1.9%). The location of their skin lesions were mainly on the upper limbs and the scalp. (Table 1)

There were 21 (19.6%) children with infections, 2 (1.8%) each with eczema and disorder of skin appendage, one with a pigmentary disorder and 1 from the other group (chronic leg ulcer). Majority of the infections were of fungal aetiology and acne vulgaris was the disorder of skin appendage documented. The infections were found mainly among the boys who were all in primary school. The fungal infections were distributed as follows; Tinea capitis 17 (15.9%), Tinea faciei 1 (0.9 %) and Tinea corporis 1 (0.9 %) as shown in Figures 2, 3, 4 and 5. One child had chronic paronychia, whose aetiology could have been either bacterial or a mixed infection.



**Table 2. Distribution of skin disorders among adults and children**

Disease categorisation	Adults		Children	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Infection	12	7.6	21	19.6
Eczema	2	1.2	2	1.8
Tumors	0	0.0	0	0.0
Disorders of skin appendage	5	3.2	2	1.9
Pruritus	1	0.6	0	0.0
Pigmentary disorders	2	1.2	1	0.9
CTD	0	0.0	0	0.0
Others	6	3.6	1	0.9
<b>TOTAL</b>	<b>28</b>	<b>17.4%</b>	<b>27</b>	<b>25.2%</b>



**Figure 2. Tinea capitis complicated by kerion**



**Figure 3. Tinea capitis**





**Figure 4. Tinea corporis**



**Figure 5. Tinea corporis**



## DISCUSSION

The pattern of skin diseases in a community is useful in designing public health intervention programmes that address these common, yet easily identifiable and treatable causes of morbidity. Skin diseases remain one of the commonest reasons for seeking healthcare. The main findings in this study showed that skin diseases were mainly in the young and early adult groups; findings corroborated by other studies from Nigeria.<sup>10, 16</sup> Skin infections, though low in frequency (7.6 %), were the most common skin disorder in our study. This is similar to other studies from rural communities in Iran (9 %) and Tanzania (4 - 6.62 %), but differs from rural studies in Ghana, Rwanda and Gabon where the values were much higher.<sup>5</sup> These differences could be explained by variations in sample size and study population.<sup>5, 10, 16 - 18</sup>

Most studies regarding pattern of skin disorders in Nigeria are hospital based; and show a contrasting picture where, infections have been replaced by eczematous dermatitis as the most common skin disorder. These hospital based studies are mainly from urban settings, where the population dynamics differ from the rural setting and influence the pattern of skin diseases seen.<sup>6-10</sup>

Overall, this study found a lower frequency of skin lesions in both the adult and children population compared with studies from other regions of Nigeria and Africa, where values ranged from 30-87 %.<sup>5, 9, 11-14, 19-21</sup> These lower figures could possibly be attributed to the fact that though Epeme is a rural community; it is on the outskirts of Lagos, a megacity whose infrastructure and development may contribute inadvertently to the exposure and health seeking behaviour of the surrounding communities in the state. Furthermore, in this rural community, two-thirds of the adult population have primary level education and above; and majority of the children are attending school at primary or secondary levels. This higher level of education among the population of Epeme could also play a role in better living conditions, hygiene, nutrition and access to healthcare of the population. The level of education found in Epeme differs from rural communities in other parts of the country where the level of education in the population is lower.<sup>22</sup>

The findings from this study are not aetiologically different from studies in other rural communities in Nigeria and Africa.<sup>11, 23</sup> These findings are also comparable to a study carried out in India, a similarly developing nation.<sup>17</sup> Although this study was carried out in a tertiary institution, the predominant pattern of skin disease was of the infectious classification, however the aetiology was different: where ours was predominantly of a fungal aetiology, theirs was mainly of bacterial origin.<sup>14</sup> In rural Ethiopia, a study among school children by Figueroa et al, revealed infestations as the most prevalent skin disorder.<sup>21</sup> This contrasts with findings from Epeme community and can be inferred that the social and environmental factors, in addition to the easy accessibility to an urban setting are likely to have influenced the epidemiology of skin disorders in Epeme.



Improvement in the standard of living, education of the general public, as well as improvement in the environmental sanitation and good nutritious food may help in reducing the frequency of skin diseases in rural communities. Although our study community (Epeme) is small and may not be a true reflection of rural communities in Nigeria; nevertheless the major skin disorder was infections which is similar to studies from other rural parts of the country.

The implication of these findings are that infections still remain the major skin disorder in rural communities in Nigeria where basic infrastructure and amenities such as water and electricity are lacking, and access to specialist care is limited. The healthcare is provided by health personnel who are not trained to correctly identify and treat skin disorders. These skin disorders which are mainly infectious in origin, are easily treatable.

The knowledge of the incidence and pattern of skin diseases in our environment would help health-care policy makers and providers to appropriately plan and execute policies that will result in improved access to specialist care and training of health care providers in all rural communities.

In addition, there should be regular preventive health education programs at the community level.

Rural communities have been traditionally associated with low literacy levels. Though there was a higher level of literacy in Epeme as compared with other rural communities, the frequency of infectious dermatoses, in particular fungal infections is the same as seen in most rural communities.

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