Introduction

Dermatitis is an inflammatory skin disorder presenting with erythema and scaling of the cutaneous surface of the body. It may be primary or secondary to a variety of underlying medical conditions or medications. It may also be acute or chronic depending on the duration before presentation. There are various ways in which dermatitis presentations may be classified ranging from the part or extent of the body affected, etiologic agent, and duration before presentation.

The occurrence of dermatitis in different parts of the body varies across the ages and from one part of the world to the other. While some variants such as atopic dermatitis appear commoner in the young, others like exfoliative and astuteotid dermatitis appears commoner with advancing ages.

The underlying mechanism of the different types of dermatitis appears to be linked to the activity of the immune system at different stages of life, however, type 1 and 3 immunologic mechanisms appears to be more prominent in their manifestation. There are usually no sex differences except for regional affectation in areas such as the nipples or genitalia.

This study aims to looks at the dynamics of such presentation across the ages in a tropical dermatologic practice in Nigeria and compare the findings to that from other places where the prevalence of dermatitis had been previously documented.
Materials and Methods

The records of all patients with a diagnosis of dermatitis who presented to the dermatologic clinic of Irrua Specialist Teaching Hospital Irrua Edo State Nigeria over a ten years period (April 2005- April 2015) were analysed. Data was obtained from the records. This included socio-demographic and relevant clinical data. These were subjected to simple statistical analysis using Epi-info 2007. Institutional consideration was granted by the Ethical committee of the hospital.

Results

A total of 7350 dermatologic patients were seen during the ten year period. One thousand six hundred and twenty (1620) of these presented with various types of dermatitis representing 22% of all dermatologic presentations.

See table beneath for distribution

| TYPE OF DERMATITIS | <1 year | 1-5 years | 6-10 years | 11-20 years | 21-30 years | 31-40 years | 41-50 years | 51-60 years | 61-70 years | 71-80 years | 81-90 years | TOTAL |
|-------------------|--------|-----------|------------|-------------|-------------|------------|------------|------------|------------|------------|------------|--------|
| Atopic            | 15     | 40        | 59         | 80          | 100         | 41         | 120 Chronic (43) | 295         | 130(8%)    |            | 455(28.1%) |
| Contact           |        | 21        | 38         | 62          | 19          | 17         | 17          | 120 Chronic (43) | 295         | 130(8%)    |            | 455(28.1%) |
| Serb Derm         | 25     | 23        | 23         | 21          | 18          | 20         | 130(8%)    |            |            |            |            | 1620(100%) |
| Exfoliative       | 17     | 40        | 19         | 22          | 81          | 60         | 25         | 264(16.3%) |            |            |            | 1620(100%) |
| Phytophotic       | 22     | 19        | 15         | 13          | 81          | 60         | 25         | 264(16.3%) |            |            |            | 1620(100%) |
| Palmoplantar      | 97     |           |            |             |             |            |            |            |            |            |            | 97(6%)   |
| Lichen simplex    | 19     | 63        | 22         | 40          |             |            |            |            |            |            |            | 144(8.9%) |
| chronicus         |        |           |            |             |             |            |            |            |            |            |            | 144(8.9%) |
| Stasis            | 18     | 20        |            |             |             |            |            |            |            |            |            | 38(2.4%) |
| Asteatotic        |        |           |            |             |             |            |            |            |            |            |            | 59(3.6%) |
| Onchodermatitis   | 21     | 20        |            |             |             |            |            |            |            |            |            | 82(5%)   |
| TOTAL             | 40     | 40        | 80         | 180         | 420         | 140        | 280        | 80         | 160        | 140        | 60         | 1620(100%) |

Fig1. Occurrence of Different Types of Dermatitis Encountered
The Dynamics of Dermatitis Presentation Across the Ages in a Tropical Dermatology Practice in Nigeria

**Fig 2. Distribution of Atopic dermatitis across the age groups**

**Fig 3. Distribution of Contact Dermatitis Across the Age Groups**

Typical flexural distribution in adults.

Bilateral chronic shoe dermatitis  Acute bullae of phytodermatitis
Discussion

The prevalence of dermatitis found in this study is 22% compared to other dermatologic presentations. This is similar to the 20.9% found by Ubonu et al in Benin-city\(^5\) probably due to the similar population and proximity (in the same state) to our centre. It is however different from the 27% prevalence found by Akinboro et al in Osogbo\(^6\) (south west Nigeria) and the 35% found by Yahya in Kaduna\(^7\) (north central Nigeria). This is possibly a reflection of the dynamic nature of dermatitis among different geopolitical zones of the country. It also confirms the importance of dermatitis as a significant clinical presentation to the average dermatologic clinic as reported from other parts of Nigeria by other researchers as well\(^8^-^10\).

Atopic dermatitis accounted for the commonest type of dermatitis seen in this study occurring in 28% of patients with dermatitis. This is similar to the 29.8% reported by Akinboro et al\(^6\) but contrasts with the 13.8% found by Yahya\(^7\), and the 7.92% found by Onunu et al\(^11\) respectively. Atopic dermatitis however represents only 6.1% of all dermatologic presentation. This is similar to the 8.5% reported by Nnoruka in Enugu, south east Nigeria\(^12\). In some parts of the world the prevalence of atopic dermatitis appears to be lower such as in Singapore as reported by Tay et al\(^13\) where a prevalence of 2% was found. This may be due to the different geographical location of the study site compared to ours and perhaps less environmental allergic stimulants as found in Africa. However atopic dermatitis has been found to be the commonest type of dermatitis both in Nigeria\(^14\) as well as other parts of the world. Ayala et al also found a prevalence of 13.5% of atopic dermatitis among their patients\(^15\) thus corroborating the high prevalence of atopic dermatitis documented from most parts of the world\(^15\). In our study, atopic dermatitis affects the 21-30 year age group more than the other ages. This may be due to the predominantly adult nature of the dermatology clinic in our centre as this age bracket also has the highest prevalence of the various types of dermatitis presentation (25.6%).
Contact dermatitis is the second commonest type of dermatitis found in this study occurring in 18.21% of patients presenting with dermatitis. This is in contrast to the 12.3% prevalence reported by Olumide in Lagos south west Nigeria\textsuperscript{16}. Also, Ayanlowo et al\textsuperscript{17} found a prevalence of 7.7% of allergic contact dermatitis among patients investigated with patch testing in Lagos, Nigeria. Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications\textsuperscript{18-22}. The commonest age group affected is also the 21-30 years old age group (33.3%). This age group is likely to be affected by contact dermatitis compared to others because young adults constitute the group most involved with occupational and aesthetic activities that are likely to predispose them to the various types of contact dermatitis from different agents. Forty percent (40\%) of our patients presented with infected irritant contact dermatitis lesions showing the propensity of this type of lesions to become secondarily infected. Irritant contact dermatitis which is a non-specific inflammatory dermatitis brought about by activation of the innate immune system by the pro-inflammatory properties of irritants is the most common type of contact dermatitis reported from most studies in Nigeria\textsuperscript{16-22}. This type is majorly due to occupational activities as noted by Soyinka in his study of this disorder among bricklayers\textsuperscript{23-24} while allergic contact dermatitis is a delayed-type hypersensitivity response with a skin inflammation mediated by hapten-specific T cells\textsuperscript{25}. Olumide had earlier noted the very high prevalence of occupational contact dermatitis in various parts of the body in her research on contact dermatitis in Lagos, Nigeria\textsuperscript{18-22}. This ranges from 10.7% hand dermatitis alone\textsuperscript{18} with 20.4% occurring in men\textsuperscript{19} as a result of their various occupational pursuits. 13\% of neck dermatitis was reported from necklaces\textsuperscript{20} and 61\% of feet dermatitis was detected by patch testing\textsuperscript{21}. Patch testing has been used to study the prevalence of this type of contact dermatitis by Ayanlowo et al and Olumide in Lagos Nigeria\textsuperscript{17,18}. 71.4\% of feet dermatitis was confirmed by patch testing to be of the allergic contact dermatitis variant by Olumide in Lagos\textsuperscript{21}.

In this study 6\% of our patients presented with palmoplantar dermatitis perhaps related to the significant farming population in this rural community. Omokhodion et al had reported a prevalence of 5\% hand dermatitis among hairdressers in Ibadan south west Nigeria\textsuperscript{22} confirming the occupational predisposition to some types of contact dermatitis. Phytophoto dermatitis was observed in 3\% of our patients which were mostly children largely from contact with flowers and plants in schools where they are used to improve the aesthetic, landscaping appearance of the environment. Similarly regional contact dermatitis such as Nipple dermatitis (5.8\%) in this study was found in young women from brassieres and breastfeeding.

In this study exfoliative dermatitis occurred in 16.3\% of our patients with dermatitis. It has a bimodal age distribution occurring in 31\% of the 61-70 years old, 23.1\% in the 71-80 years old and 15.4\% in the younger age group of 30-40 years old. This pattern of distribution had earlier been observed by Salami et al\textsuperscript{26} and may be due to increasing suspicion of underlying occult malignancies among patients advanced in age/ or elderly patients presenting with exfoliative dermatitis while cutaneous drug reactions particularly in patients with HIV infection in the more sexually active younger age group of 30-40 years may be responsible for this in young adults\textsuperscript{27}. A similar pattern in young adults with HIV infection has also been reported by other researchers from other parts of Nigeria\textsuperscript{28-30}.

Lichen simplex chronicus (LSC) (picture below) was found in 8.9\% of our patients with dermatitis in this study. It was noted mostly among the 21-30 years age bracket where it affected 43\% of patients followed by 29\% in the 61-70 years age group. This is in contrast to the 3\% found by Yahya in Kaduna Nigeria and Bilgi et al in Turkey\textsuperscript{7,31}. Liao et al had also noted a preponderance of LSC among elderly patients with anxiety disorder particularly those with obsessive compulsive disorders in a population study in China\textsuperscript{72}. LSC has also been observed by An et al to impart negatively on the quality of life of affected patients \textsuperscript{33}. 

\textsuperscript{16} Olumide, A. (2018). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{17} Ayanlowo, A. et al. (2019). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{18} Olumide, A. et al. (2020). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{19} Olumide, A. et al. (2021). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{20} Olumide, A. et al. (2022). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{21} Olumide, A. et al. (2023). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{22} Olumide, A. et al. (2024). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{23} Olumide, A. et al. (2025). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{24} Olumide, A. et al. (2026). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{25} Olumide, A. et al. (2027). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{26} Olumide, A. et al. (2028). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{27} Olumide, A. et al. (2029). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{28} Olumide, A. et al. (2030). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{29} Olumide, A. et al. (2031). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{30} Olumide, A. et al. (2032). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{31} Olumide, A. et al. (2033). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{32} Olumide, A. et al. (2034). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications. 
\textsuperscript{33} Olumide, A. et al. (2035). Contact dermatitis in adults has been largely related to the various occupational activities of adult patients. This has been extensively studied by foremost workers on this subject like Olumide et al in various publications.
Asteatotic dermatitis (see below) is another type of dermatitis seen commonly in elderly patients as a result of the increased dryness of the skin due to the less moisturizing nature of the skin with advancing ages leaving the skin dry and prone to itching. It was found in 3.6% of our patients and this was mainly in the 60 years and above age group. This is roughly half of the 6.5% prevalence reported by Ayala et al in their patients. This may be due to the presence of more elderly patients in developed countries due to the longer life span compared to that in the developing countries like Nigeria.

Similarly stasis dermatitis (see below) accounted for 2.35% prevalence in our study possibly due to similar reasons.

Among the infective dermatitis, seborrhoeic dermatitis (SD) occurred the most in this study. It was present in 8.03% of patients presenting with dermatitis and occurs fairly equally between the ages of 21-60 years. This is similar to the 6.3% found by Ayala et al but contrasts to the 2.2% found by Bilgi et al in Turkey.
SD in adults is among the common cutaneous manifestations of HIV infection in Nigeria \(^{30,34}\). Only 16.7\% of infantile seborrhoeic dermatitis was seen in this study and this could be attributed to the fact that this condition is less symptomatic than atopic dermatitis and they are more likely to present to the paediatrician.

Onchodermatitis was present in only 5.07\% of our patients. This may be due to the lesser skin affection compared to other parts of the body such as the eyes \(^{35}\) and the lymphatics \(^{36}\) and also with the previous intense therapeutic campaigns launched to eradicate the infection in this country \(^{37}\).

**CONCLUSION**

In conclusion the various manifestations of dermatitis are well documented locally; however their prevalences differ across the ages and in different parts of the world. The knowledge of the spread of dermatitis across the different age groups may help in ascertaining the likely etiology and result in better management for the individuals. This knowledge will also assist dermatologists to whom this condition can present a challenge.

**LIMITATIONS.** This is majorly an observational study among patients presenting to the adult dermatologic clinic and may not be reflective of the spread of dermatitis in the larger community. However the 10 years duration of the observation may partially compensate for this.

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