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Original Article

Clinical Profile of Seborrhoeic Dermatitis Patients Seen in a Tertiary Hospital in Lagos, Nigeria – A Case-Control Study

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Abstract

Background: Seborrhoeic dermatitis (SD) is a common dermatosis worldwide and ranks among the ten most prevalent skin conditions in Nigeria and Africa. However, studies on SD in African populations are sparse. This study aimed to document the demographic and clinical characteristics of adult SD patients in Lagos, Nigeria.

Methodology: A prospective, hospital-based case-control study was conducted at a tertiary dermatology clinic between January and July 2019. It included 80 newly diagnosed SD patients and 80 age- and sex-matched healthy controls. Demographic and clinical data were collected using structured questionnaires, detailed skin examinations,10% KOH microscopy of lesional scrapings, and blood tests for random blood sugar and HIV serology. Severity was classified using a modified SD severity scoring system. Data analysis was performed using Epi Info version 7.2 and SPSS version 22.

Results: The mean patient age was 32 years, and 52.5% were female. Most patients had recurrent, scaly, and pruritic lesions on the face, scalp, and trunk, with 81% reporting recurrences. Aggravating factors included hot and humid weather, stress, and inappropriate skincare. Family history of SD and medicated soap use were common (66.3%). Embarrassment due to lesions was reported in 93.8% of cases. Self-medication with triple-action creams, antihistamines, and herbal remedies was found in 91.3%. Moderate severity was most frequent, and hypo- and hyperpigmentation were more common than erythema. HIV infection and abnormal glycemic levels occurred in 2.5%.

Conclusion: Seborrhoeic dermatitis is a recurrent inflammatory dermatitis occurring predominantly among young adults in Lagos. It is often moderately severe, aggravated by exogenous factors, and causes patient embarrassment. Further research on SD is needed to develop more effective treatment modalities.

Keywords: Seborrhoeic Dermatitis; Clinical Profile; Nigerian Patients.

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Introduction

Seborrhoeic dermatitis (SD) is a common, chronic, and relapsing inflammatory skin disorder affecting areas with high concentrations of sebaceous glands, such as the face, scalp, ears, chest, upper back, flexures, and anogenital regions.[1,2] Dandruff (Pityriasis capitis*)*, characterised by dry, flaking scales on the scalp, is a milder but more common, non-inflammatory variant of SD.[2]

Globally, SD affects 2 - 14% of adults, with a lifetime incidence of up to 13% and an overall prevalence of 4.38%.[3–5] Although SD prevalence does not appear to differ significantly based on race or ethnicity, it is more common among young adults and males.[2,5,6] In Nigeria, SD accounts for 2.5-6% of dermatology clinic visits and is one of the ten most common skin conditions.[7] Its occurrence is notably higher in HIV-positive individuals and patients with neurological conditions such as Parkinson's disease and stroke.[1,2,8,9]

The pathogenesis of SD is not fully understood. It is thought to involve an interplay of increased sebum, Malassezia yeast colonisation, immune dysregulation, and multiple endogenous and exogenous factors.[1,2,10] Endogenous factors may include hormonal influences, immune dysfunction, and chronic medical conditions.[2,10]Exogenous factors include skin and gut microbiome alterations, climate variations, stress, and nutritional deficiencies.[10–12] Genetic associations have been postulated but not established.[13]

Infantile SD, the earliest clinical presentation, affects up to 50% of infants and is driven by residual maternal androgens but usually resolves spontaneously.[1,2,10] In adults, SD often begins in adolescence, peaks in the third and fourth decades, and follows a chronic, relapsing course.[2,5,6]

Clinically, SD typically presents with symmetrical, greasy, yellow-brown scales or plaques on erythematous or dyspigmented skin in seborrhoeic areas.[1,2,14] In severe cases, lesions may become generalised, causing exfoliative dermatitis.[14,15] Diagnosis is clinical, based on history and physical examination, with investigations reserved for excluding differential diagnoses such as psoriasis, atopic dermatitis, rosacea, or systemic lupus erythematosus.[1,14,16] SD may coexist with some of these conditions, leading to atypical presentations and diagnostic challenges.[1,14,16]

Treatment is typically with topical and oral antifungals, mild topical steroids, and keratolytics, but these usually provide temporary resolution, and recurrence is frequent.[12,16] The chronic, recurrent, and visible nature of SD can significantly impact self-esteem, social interactions, and quality of life, especially among young adults, and constitutes an economic burden.[17–20]

Despite its high prevalence in tropical countries, SD studies in Nigeria and Africa are limited and often focus on HIV-positive populations.[18,21] This study aims to provide insight into the clinical and demographic characteristics of SD among patients in Lagos, Nigeria, outside the context of HIV.
The main objective of the study is to evaluate the clinical and demographic characteristics, severity, and associated factors of SD in adult patients in Lagos, Nigeria.

The specific objectives of the study were to describe the clinical and demographic characteristics of adults with SD attending a tertiary dermatology clinic in Lagos, Nigeria; compare skincare practices and relevant clinical factors between SD patients and healthy controls; assess the severity and body surface distribution of seborrhoeic dermatitis; detect *Malassezia* in lesional skin scrapings and identify factors associated with the severity of seborrhoeic dermatitis.

Methods

Study Area: The study was conducted at the Dermatology clinic of the Lagos State University Teaching Hospital (LASUTH) in Lagos, Nigeria.

Study Design and Population:
This cross-sectional case-control study evaluated the demography, skincare practices, and clinical characteristics of treatment-naïve adult patients diagnosed with seborrhoeic dermatitis at the LASUTH Dermatology clinic compared with age- and sex-matched healthy controls between January and July 2019.

Sample Size Determination and Sampling:
Using the prevalence sample-size calculation formula, $n=\frac{z^2pq}{d^2}$ where: n= estimated sample size; z= 1.96 (at 95% confidence limit). p= estimated disease prevalence; d= desired precision limit of 5% (0.05), and q= 1-p. With an estimated 4.38% prevalence of SD[7], the minimum sample size was 64, which was adjusted to 80 to make allowance for attrition and increase the power of the study. A total of 80 patients with SD were purposively sampled, and consecutive patients were recruited for the study. An additional 80 age and sex-matched healthy controls were consecutively recruited.

Case Definition:
Seborrhoeic dermatitis was diagnosed clinically by two consultant dermatologists to minimise bias and errors based on the following criteria[1,14]:

Recurrent, symmetrical, ill-defined, hypo- and/or hyperpigmented and/or erythematous scaly rashes on the scalp, face, chest, and pubic area, with or without pruritus or greasiness.

Inclusion and Exclusion Criteria:
Consenting treatment-naïve patients aged 18 to 65 years diagnosed with seborrhoeic dermatitis were included.SD patients already on specialist treatment, with concurrent dermatological conditions, or on regular medications for chronic medical conditions were excluded.

Ethical Considerations:
Ethical approval was obtained from the LASUTH Health Research Ethics Committee. (Ref No: LREC/06/10/922) Written informed consent was obtained from all participants.

Study Procedure:
An interviewer-administered, structured, pre-tested questionnaire was used to collect demographic and clinical history data. The participants were examined by consultant dermatologists for the site and type of SD lesions, and anthropometric measurements were taken by the clinic nurses. Body surface area involvement was calculated using the Wallace rule of nines. SD severity was scored based on six parameters (erythema, scaling, hyperpigmentation, hypopigmentation, seborrhoea, and pruritus) rated 0-3 (absent-0, mild-1, moderate-2, severe-3), similar to a South African study.[18](Appendix I). The cumulative score, multiplied by the percentage of body surface area involvement, classified SD as mild (0-2.9), moderate (3-6), or severe (>6). Lesional skin scrapings were analysed using 10% potassium hydroxide, and light microscopy was performed to detect *Malassezia* spp. and exclude dermatophytes. Patient blood samples were collected for random blood sugar and HIV serology testing.

Data Analysis:
Data was analysed using Epi Info version 7.2 and SPSS version 22. Descriptive statistics summarised variables and multi-nominal logistic regression analysis assessed whether independent factors (age, gender, medicated soap use) were associated with SD severity. Statistical significance (p-value) was set at < 0.05.

Results

Demographic Characteristics of Study Participants:

The study included 80 treatment-naïve SD patients aged 18 to 65 years and 80 age- and sex-matched healthy controls. The mean ages of SD patients and healthy controls were 31.8±9.5 and 32.4±9.9 years, respectively. The mean age at SD onset was 28.3 years. There were 42 females and 38 males (F: M – 1.1:1), and 77.5%had tertiary-level education. All participants were Fitzpatrick skin types V and VI.

Clinical Symptom profile:

The mean duration of SD skin lesions was 3.09+/- 2.21 years. Recurrence was noted in 65 (81%) of the cases, with each episode lasting less than 4 weeks in 38 (47.5%) and more than 4 weeks in 27(33.8%). Persistent rashes were noted in 15 (19%). Facial skin lesions were the most common (67; 83.8%), followed by a history of "dandruff" in 58 (72.5%) cases, self-rated as moderate severity in 30 (37.5%).

Skin discolouration was the most prominent complaint (78; 97.5%), and hot weather was the most common aggravating factor (63; 78.8%). Moisturisers and medicated creams provided some relief for 30% of cases. Seventy-five cases (93.8%) felt embarrassed about their condition, and 40 (50%) described the disturbance caused by SD as severe. (See Table 1 and Figures 1 and 2).

Table 1: Clinical history of SD patients

Clinical History	**n=80(%)**
Duration of Rashes	
< 1 year	25 (31.3)
1-3years	16 (20.0)
>3-5 years	17 (21.2)
>5 years	23 (28.8)
Dandruff Incidence	**58(72.5)**
Mild	18(22.5)
Moderate	30(37.5)
Severe	10(12.5)
Symptoms*	
Itchy (Pruritus)	59 (73.8)
Scaly/Flaky	67 (83.8)
Burning/Painful	21 (26.3)
Discolouration	78 (97.5)
• Darker (Hyperpigmentation)	22 (27.5)
• Lighter (Hypopigmentation	23 (28.8)
• Reddish (Erythematous)	3 (3.75)
• Combination	30 (37.5)
Level of Disturbance	
• Minimal (1-4)	5 (6.25)
• Moderate (5-7)	35 (43.8)
• Severe (8-10)	40 (50.0)
Embarrassment from SD rashes	75 (93.8)

*In most patients, more than one symptom was present

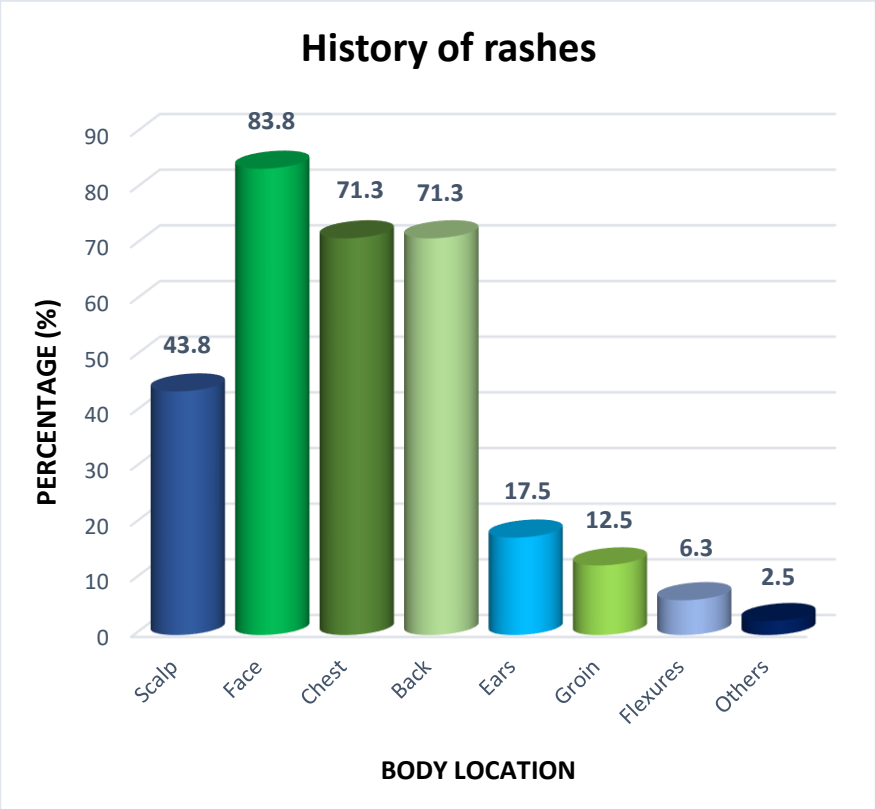

Figure 1: Location of SD rashes from the history

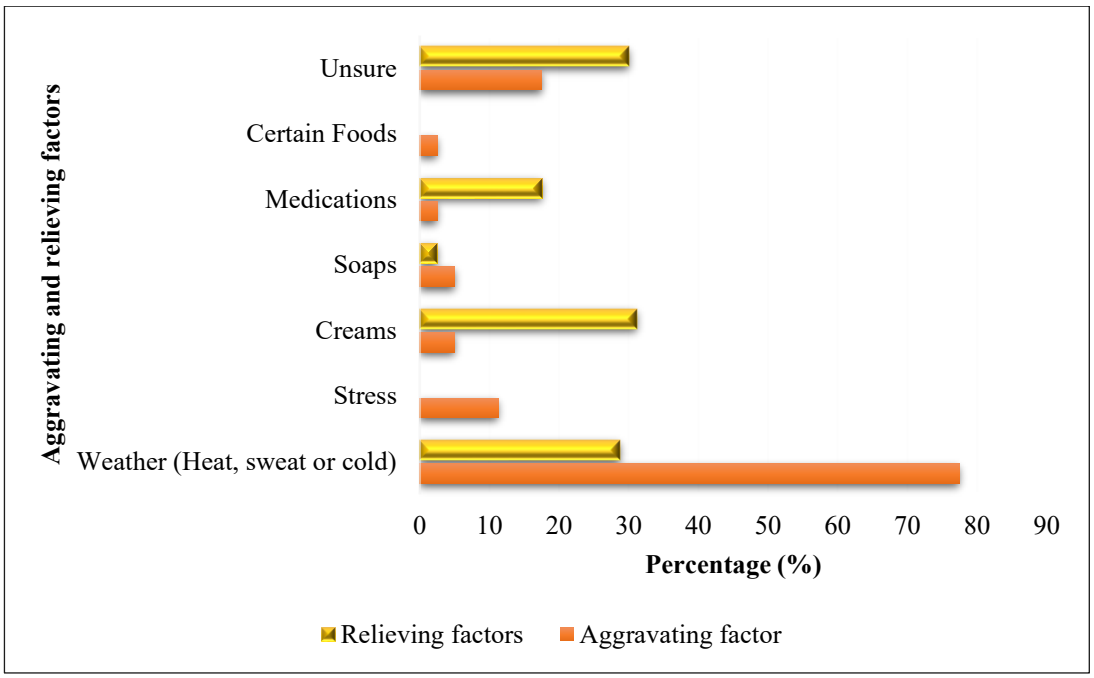

Figure 2: Relieving and aggravating factors for SD cases

Skincare, family history, and social history comparison between cases and controls

About two-thirds of patients bathed with antiseptic soap (53; 66.3%). A family history of SD was also reported in 53 (66.3%). Nearly all (91.3%) SD cases had used medicated creams, with 36 (45.0%) self-prescribing and 33 (41.3%) being recommended by a pharmacist. Commonly used medicated creams were "triple action creams" like Skineal® (0.05% clobetasol propionate, 1% ketoconazole, and neomycin sulphate) and Funbact-A® (0.05% betamethasone dipropionate, 1% clotrimazole, and neomycin sulphate). Fourteen cases (17.5%) have also used oral medications, mainly antihistamines (loratadine and chlorpheniramine) and antibiotics. Herbal remedy use was noted in 11 (13.8%). Alcohol and cigarette use were more common in SD cases compared to controls. See Table 2.

Table 2: Skin care, family, and social history of study participants

Clinical history	n=80 (%) (Patients)	n=80 (%) (Controls)	X^2	P
Use of medicated soap				
Yes	53 (66.3)	13 (16.3)		
No	27 (33.8)	67 (83.7)	39.92	0.001*
Use of antiseptic liquid				
Yes	27 (34.0)	2 (2.5)		
No	53 (66.0)	78 (97.5)	27.62	0.001*
Self-medication practices				
Creams	73 (91.3)	-		
Soaps	27 (33.8)	-		
Tablets	14 (17.5)	-		
Herbal remedies	11 (13.8)	-		
Family History				
Yes	53 (66.3)	8(10.0)		
No	27 (33.8)	72 (90.0)		0.001*
Social History				
Alcohol	36 (45.0)	17 (21.3)		
Cigarette smoking	3 (3.8)	0 (0.0)		0.026*

Clinical examination findings in study participants

Anthropometric parameters**:** The mean BMI for SD cases were 25.01±4.5kg/m2, and the mean blood pressure was 115.54 ±14.3 / 72.48 ± 9.44mmHg. Although mean BMI and blood pressure were higher in cases than controls (24.66 ± 4.9kg/m2; 113.16±13.24 / 71.92±8.88mmHg), the difference was not statistically significant.

Skin examination: Seventy-six patients (95%) had facial involvement, especially in the T-zone (forehead, eyebrows, and nasolabial folds), and 72 (90%) had scaly patches and plaques. Skin surface area involvement was 10-20% in 57 (71.3%) patients, with moderate severity in 59 (73.8%). Severe SD was more frequent in males (12.5%) than in females (5%), and male gender was the only significant independent risk factor for severity identified. (Tables 3 & 4)

Table 3: Skin Examination findings of SD cases

Clinical examination findings	**Frequency n=80 (%)**		
Location of rashes			
Scalp	**51(63.8)**		
Face	**76(95.0)**		
• *Nasolabial folds*	73 (91.3)		
• *Eyebrows & glabella*	73 (91.3)		
• *Hairline*	41 (51.3)		
• *Peri-oral*	28 (35.0)		
• *Mandibular*	16 (20.0)		
Chest	**59 (73.8)**		
Back	**57(71.3)**		
• *Interscapular*	46 (57.5)		
• *Shoulders/ upper back*	55 (68.8)		
Ears	**23 (28.8)**		
• *Pre-auricular & Auricular*	14 (17.5)		
• *Retro-auricular*	23 (28.8)		
Groin	**14 (17.5)**		
Flexures	**7(8.8)**		
Others	**2 (2.5)**		
Types of rashes seen			
Scaly patches and plaques	72 (90.0)		
Follicular	8 (10.0)		
Skin involvement (Body surface area %)			
< 10%	17 (21.3)		
10-20%	57 (71.3)		
>20%	6 (7.5)		
Seborrhoeic Dermatitis Severity	**Female**	**Male**	**Total**
Mild (0-2.9)	6(7.5)	1(1.3)	7(8.8)
Moderate (3-6)	32(40)	27(33.8)	59(73.8)
Severe (>6)	4(5.0)	10 (12.5)	14(17.5)

Table 4: Independent predictors of Seborrhoeic dermatitis severity

Parameter	P-value	X^2
Age group	0.172	11.56
Male gender	0.033*	6.84
Medicated soap use	0.505	1.37
Random blood sugar	0.444	9.53

Figure 3: Illustrates the presentation of seborrhoeic dermatitis in the affected parts of the body.

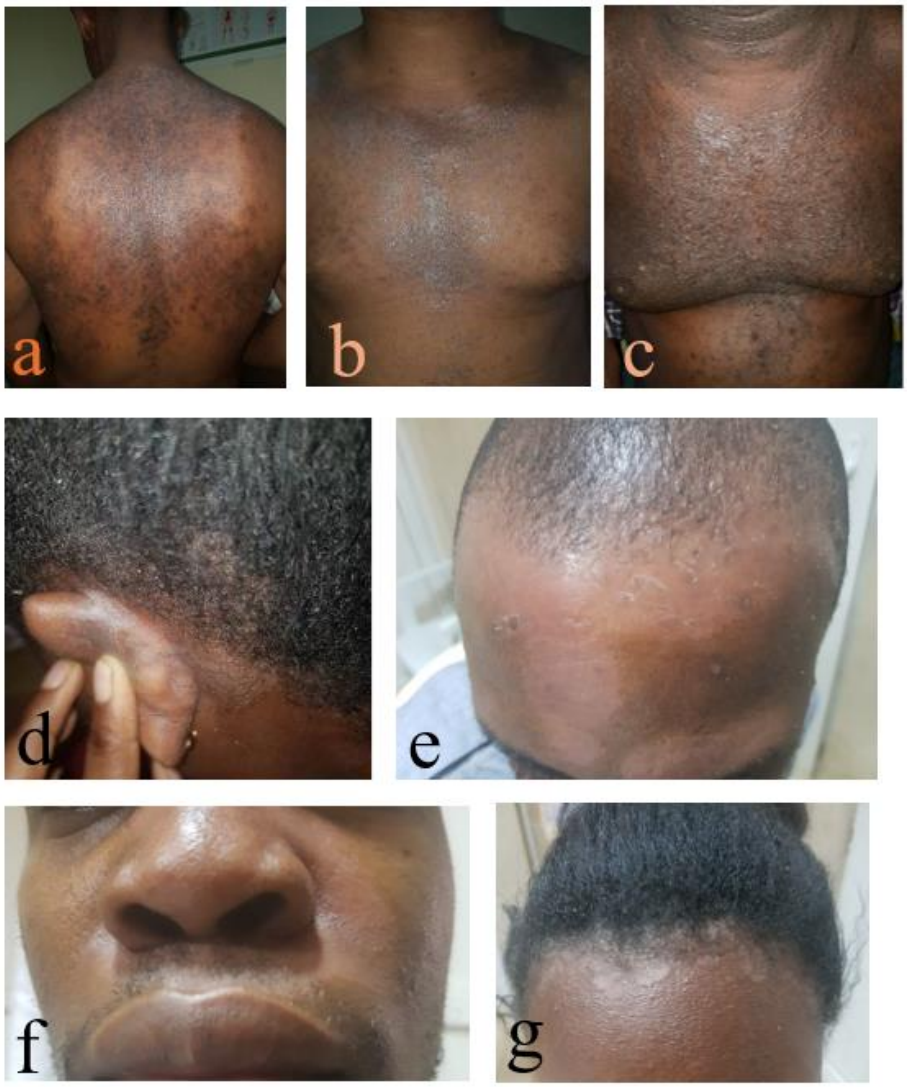

FIGURE 3: STUDY PARTICIPANTS WITH SEBORRHOEIC DERMATITIS

a-c: hyperpigmented pityriasiform scaly plaques on the chest and back
d-g: hypopigmented erythematous scaly plaques on the face (nasolabial and glabellar areas), postauricular area(d), and the scalp (d&g)

Seborrhoea was present in all cases (100%), scaling in 77 (96.3%), hypopigmentation in 70 (87.5%), hyperpigmentation in 60 (75%), and erythema in 30 (37.5%) (Fig. 4).

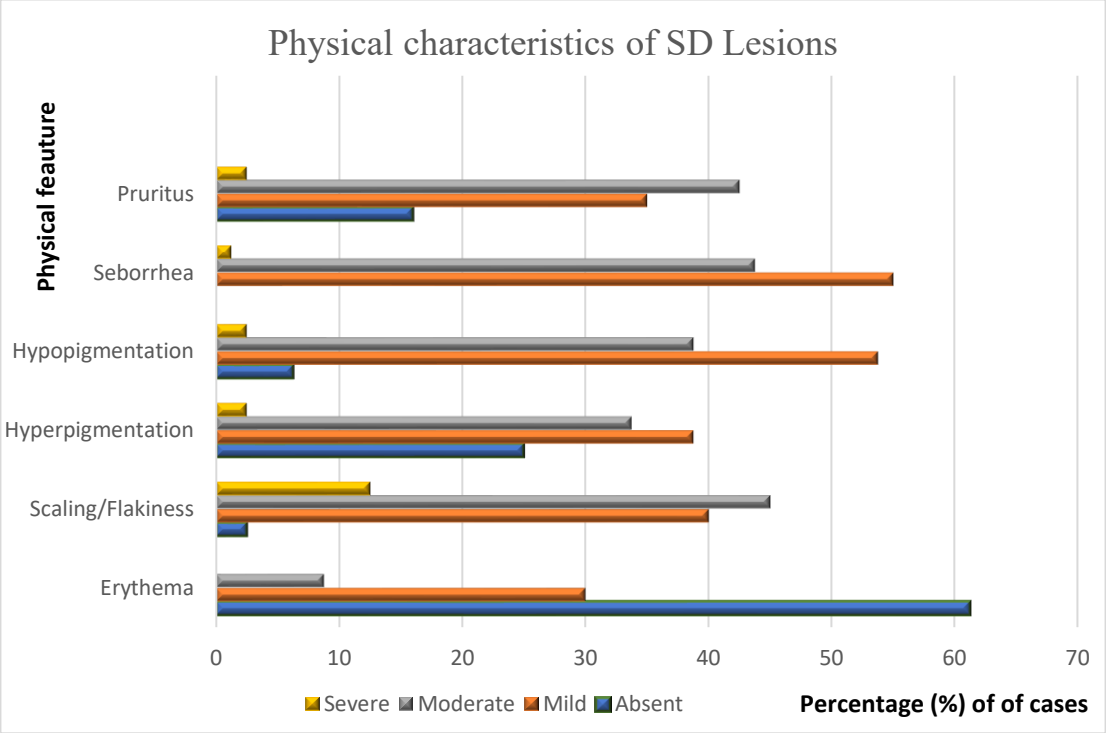

Figure 4: Physical characteristics of SD lesions

HIV status: Two SD patients (2.5%) were HIV positive with CD4 counts between 200 and 500/mm3. One had severe SD. None of the controls were HIV positive.

Glycaemic levels: Mean random blood sugar levels were within the normal range for both cases and controls (94.36 ± 17.2 mg/dl vs 92.38±15.4mg/dl; p=0.45). Two SD patients had impaired glucose tolerance (RBS 140-200mg/dl), but none had diabetes-range glycaemia.

Skin scraping and 10% KOH prep for fungal studies: Skin scrapings were negative for Malassezia yeasts in 63.8% of SD cases (51/80). Controls were not assessed for Malassezia.

Discussion

Seborrhoeic dermatitis (SD) is a common dermatosis worldwide and among the ten most prevalent skin conditions in Nigeria, yet studies on SD in Africans remain limited.[5,7] This study examined the demography, skincare practices, and clinical characteristics of SD in Nigerian patients.

Demographic Characteristics

The mean age of participants was 32 years, with most cases occurring between 21 and 40 years, similar to previous SD studies.[3,5,17]This age group coincides with peak sebaceous gland activity, affirming the role of sebum in SD pathogenesis.[10,12,22] SD is often reported to be more common in males due to androgen-driven sebum production, but this study had a slight female preponderance.[12,22] Similar findings in some studies have been attributed to higher dermatological or aesthetic healthcare-seeking behaviour among women.[3,7,19].

Clinical History

Most participants presented with recurrent, scaly, pruritic, and dyschromic skin lesions in seborrhoeic chronic and relapsing areas, typical of SD and consistent with other studies.[17,19,20]Pruritus and dyspigmentation occur due to the exaggerated immune reaction mediated by inflammatory cytokines released in response to Malassezia yeasts and their by-products(free fatty acids) from sebum metabolism on the skin, resulting ininflammation and recurrent lesions.[10,23]

In this study, more cases had SD for less than one year than in similar studies, possibly due to the selection of newly diagnosed patients.[17,18,20] Common triggers included hot weather, stress, and certain skincare products, and hot weather was the most frequently reported, consistent with other studies in tropical climates.[17,19] In tropical climates, the heat and humidity promote *Malassezia spp* overgrowth due to increased sweat and sebum production.[10,11,23] Stress, a more frequent trigger in temperate climes like Spain, was less commonly reported.[20]

Nearly all participants experienced embarrassment due to SD, and over half described it as severely disturbing. This could be attributed to SD lesions being visible, scaly, pruritic, and dyspigmented and aligns with other studies that document the negative psychological impact of SD.[17–20]

Most SD patients used antiseptic soaps, a common practice in Nigeria. While this may represent an attempt at self-treatment, it could also elicit more severe SD.[24] Antiseptic soaps can disrupt the skin's pH and microbiome, eliminating protective microflora and facilitating Malassezia overgrowth.[24–26] Araya et al. also observed that skincare and household products were common aggravating factors in SD patients.[17]

Self-medication was prevalent, with "triple action creams" (containing antifungals, antibiotics, and steroids) being the most commonly used, followed by antihistamines. This mirrors the findings by Anaba et al.[27] Herbal and over-the-counter remedies, with unknown compositions, were also commonly used. While some local herbal preparations may provide temporary relief, their efficacy and safety remain unclear.[28]

Alcohol and cigarette use were more common among SD patients. Both are known to have pro-inflammatory and immunosuppressive effects, potentially worsening chronic, inflammatory dermatoses like SD by promoting Malassezia overgrowth.[23,29]

The face, scalp, and trunk were the most affected areas, consistent with Malassezia's predilection for sebum-rich areas.[10,17,19] Scaliness and pruritus were predominant symptoms, but unlike other studies in lighter-skinned populations[19,20], erythema was less common. Instead, hypo- and/or hyperpigmentation are more frequently observed, reflecting differences in how inflammatory dermatoses like SD present in darker skin types.[30] Erythema is less appreciable in dark skin, potentially leading to an underestimation of disease severity.[30]

Most cases were categorised as moderately severe, though the severity scoring used in this study was not validated. The widely accepted Seborrhoeic Dermatitis Area Severity Index (SDASI) could not be accessed at the time of this study, and it does not assess pruritus and dyschromia – two critical features in darker skin.[30] Other studies have also classified SD severity based on erythema, desquamation (scaling), symptoms like itching or burning, percentage of skin surface area involved, and the anatomical location of lesions.[18] SD severity was greater in males, aligning with studies linking SD to increased androgen-driven sebaceous activity.[5,10,22]

No significant relationship was found between SD and body mass index (BMI), hypertension, or glycemic levels, which is consistent with the findings by Bas et *al*.[31] In contrast, a recent study linked SD to metabolic syndrome.[32] The dearth of cardio-metabolic complications in this study may be due to the participants' younger age and shorter disease duration since they were newly diagnosed cases.

Only two SD patients were HIV-positive, a lower percentage than in other African studies that have linked SD to HIV.[8,9,21] While SD prevalence is elevated in HIV-positive patients, particularly those with low CD4 counts, most cases are not associated with HIV infection.[11,24]The World Health Organisation's HIV test-and-treat policy may have contributed to a decline in SD in people living with HIV due to early treatment and better disease control.[33]

Skin scrapings had a low yield for Malassezia yeasts, contrasting with a study by Hedayati *et al.,* which reported a 100% positive yield using methylene blue staining.[34] This may be due to the different methods used (10% KOH in this study) and prior self-medication with triple-action creams containing low-dose antifungals. Molecular studies are needed to investigate Malassezia's presence and species in Nigerian SD patients, as done in other populations.[35]

Study limitations include the absence of a validated SD severity index and restriction to newly diagnosed hospital-based patients, which may not completely reflect the broader SD population.

Conclusion

Seborrhoeic dermatitis (SD) in Lagos, Nigeria, often affects young adults and causes significant patient embarrassment. It typically manifests as moderate hyperpigmentation, pruritus, and scaly pityriasis form lesions in sebum-rich areas. Common triggers include heat, stress, and inappropriate skincare products, while some self-care practices (such as using medicated soaps, self-prescribed medications, and herbal remedies) may worsen the condition. Further studies in African populations are needed to better understand SD's pathogenesis and management. Patient education on the chronic nature of these dermatoses, appropriate skincare, and avoidance of unprescribed medicated products is essential for managing the condition and minimising recurrence and severity.

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