



Clinical Characteristics of Vitiligo among Adult Patients at the Obafemi Awolowo University Teaching Hospitals' Complex (OAUTHC), Ile-Ife, Osun State, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author EPO designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors OOA and OO managed the analyses and literature searches of the study. All authors read and approved the final manuscript.

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ABSTRACT

Background: Vitiligo is a depigmentary skin disorder which occurs worldwide due to the loss of melanocytes in the skin of affected persons and it can affect the skin of any part of the body with varied clinical characteristics.

Aim: The aim of the study was to determine, in adults, the clinical spectrum and clinical characteristics of vitiligo and to also identify any precipitants amongst those affected.

Methods: All consecutive adult vitiligo patients attending the Dermatology clinics of the OAUTHC

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Ile-Ife who gave consent were recruited. A total of fifty patients were recruited for the study. A detailed history and physical examination was conducted for all the patients using a proforma to elicit socio-demographic and clinical data.

Results: The age of the patients with vitiligo at presentation ranged from 18 years to 72 years with mean age of 35 ± 17 years. Most of the patients (56%) had generalized vitiligo. The face was the predominant part of the body in which the lesions occurred in most of the patients as forty-one patients (82%) had the lesions on their face and the areas of the face mostly affected were the forehead and cheek. The initial lesions were also located on the face in 52% of the patients.

There was a positive family history in 12% of the patients. A proportion of the patients noticed that their lesions were likely to have been precipitated by various stressful events such as physical trauma, emotional stress, severe sun burn and pregnancy which were not related to the clinical spectrum of vitiligo.

Conclusion: The clinical spectrum and clinical characteristics of vitiligo in this study are mostly similar to the findings documented from previous studies. Vitiligo could also be precipitated by factors such as physical and emotional stress which do not affect the clinical spectrum in affected patients.

Keywords: Vitiligo; adults; spectrum; characteristics; precipitants.

1. INTRODUCTION

Vitiligo is characterized by the appearance of patchy discoloration evident in the form of typical chalky-white or milky macules. The macules are round and/or oval in shape, often with scalloped margins [1]. The size of the macules may vary from a few millimeters to several centimeters with the lesions affecting the skin and/or mucous membranes [2]. The lesions are asymptomatic although itching/burning may precede or accompany the onset of the lesions in a few patients [2].

Although any part of the skin and/or mucous membranes can be affected, the disease has a predilection for normally hyperpigmented regions such as the face, groin, axillae, areolae and genitalia. Furthermore, lesions may develop in other areas like the ankles, elbows, knees, which are subjected to repeated trauma/friction [3]. Hospital-based studies conducted in Nigeria revealed that the most affected parts of the body are the face and limbs [4,5].

The disease onset may be preceded by severe sunburn [6], pregnancy [7], skin trauma [8] and/or emotional stress [9].

Vitiligo is generally slowly progressive, either by centrifugal expansion of current lesions and/or the appearance of new lesions. Hann et al. [10] found progression in 88.8% of patients.

Progression was observed to occur in patients with positive family histories, non-segmental

vitiligo, a longer duration, Koebner's phenomenon and mucous membrane involvement.

The aim of the study was to determine the clinical spectrum and clinical characteristics of vitiligo as well as identify any possible precipitants amongst affected adults at a Dermatology clinic in Nigeria.

2. RESEARCH HYPOTHESIS

1. H_0 = There is no difference in the clinical spectrum and clinical characteristics of vitiligo between adult Nigerians and adults in other parts of the world living with vitiligo.
2. H_0 = There is no relationship between the suspected precipitants and clinical spectrum of vitiligo.

3. MATERIALS AND METHODS

This study was a cross-sectional descriptive study conducted at the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC), Ile-Ife. It is a tertiary health care centre located in the South West geopolitical zone of Nigeria and has its patient population referred from various parts of the zone.

Ethical clearance was obtained from the Ethics and Research Committee of the OAUTHC Ile-Ife, Osun State (IRB/IEC/0004553) and informed consent was sought from the patients and controls before being enlisted for the study.

All consecutive adult vitiligo patients attending the Dermatology clinics of the OAUTHC Ile-Ife who gave consent were recruited. A detailed history and physical examination was conducted for all the patients using a proforma to elicit socio-demographic and clinical data.

Socio-demographic data included age, sex, occupation, marital status and educational qualification and relevant clinical history such as the sites of the body affected by loss of skin pigment, duration of lesions and a history of events preceding the development of the lesions were noted.

Physical examination was conducted for the patients and control group, individually, in a well lit room, during which the integumentary system was examined for any abnormality. Wood's lamp examination was also done used for the patients.

The diagnosis of vitiligo was made based on the findings of depigmented macules and/or patches with sharply demarcated margins, normal texture, intact sensation and no scaling.

The classification of Vitiligo for the study was based on the Vitiligo Global Issues Consensus Conference classification adopted in 2011.

4. RESULTS

A total of 50 patients (mean age 35 ± 17) were included in the study. The age of the patients ranged from 18 years to 72 years and their mean age was 35 (±17) years. There were more females with vitiligo who were enrolled in the study as 30 were females and 20 were males. The occupational status of the patients revealed that twenty (40%) were students, sixteen (32%) were traders, ten (20%) were civil servants, two (4%) were farmers and two (4%) were artisans. Most of the patients were married and had attained tertiary level of education. These findings are summarized in Table 1.

The clinical characteristics of vitiligo in this study group revealed that the lesions occurred in all parts of the body with the face being the most affected part. The frequency of the sites of the body where the lesions occurred in decreasing order is as follows; face: 41 patients (82%), upper extremity: 35 patients (70%), lower extremity: 25 patients (50%), trunk: 24 patients (48%), genitals: 2 patients (4%). For the combination of the sites of the lesions, a quarter of the patients (24%) had the face, upper extremity, lower extremity and trunk affected.

Table 1. Sociodemographic characteristics of the patients

Variables	Frequency (n=50)	Percentage %
Age		
<20	15	30
21-40	17	34
41-60	12	24
61-80	6	12
Sex		
Male	20	40
Female	30	60
Occupation		
Students	20	40
Civil servants	10	20
Businessmen	16	32
Farmers	2	4
Artisans	2	4
Marital status		
Single	21	42
Married	26	52
Widowed	3	6
Educational level		
None	8	16
Primary	7	14
Secondary	17	34
Tertiary	18	36

The forehead and the cheek were the areas of the face most commonly affected (56%) while the lips and oral mucosa were the areas least commonly affected –(20%). The initial lesions were on the face in twenty six (52%) patients, upper extremities in 18 (36%) of the patients, lower extremities in three (6%) patients, trunk one patient (2%) and genitals two patients (4%) and of all the body sites, lesions on the face bothered the patients the most and it was noticed in more than half (68%) of the patients.

For the duration of lesions, twenty three patients (46%) have had the lesions for less than two years while twenty seven patients (54%) have had the lesions for more than two years. Six patients (12%) had a family history of vitiligo and the remaining 44 patients (88%) had no known family history of the disorder.

The % BSA was independent of the site involved and thirty patients (60%) had ≤20% BSA affected while twenty patients (40%) had >20% of BSA affected. Forty patients (80%) could not identify any suspected precipitant for the condition. However, a total of ten patients (20%) identified physical trauma, severe sun burn, pregnancy

and emotional stress as likely precipitants. Leukotrichia and koebnerization were present in seven patients (14%) and nine patients (18%) respectively. These clinical characteristics are shown in Table 2.

Table 2. Clinical characteristics of the patients

Variables	Frequency (n=50)	Percentage %
*Sites of the lesions		
Face	41	82
Upper extremity	35	70
Lower extremity	25	50
Trunk	24	48
Genitals	2	4
Combination of sites of the lesions		
Face only	12	24
Face and upper extremity	6	12
Face, upper extremity and lower extremity	4	8
Face, upper extremity lower extremity and trunk	12	24
Face, upper extremity, lower extremity, trunk and genitals	1	2
Face, upper extremity and trunk	4	8
Face, lower extremity and trunk	1	2
Face, lower extremity and genitals	1	2
Upper extremity only	1	2
Upper extremity and lower extremity	2	4
Upper extremity, lower extremity and trunk	4	8
Upper extremity and trunk	1	2
Trunk only	1	2
*Multiple responses		
Areas of the face affected		
Forehead	28	56
Eyelid	18	36
Nose	16	32
Ear	14	28
Cheek	28	56
Lip	10	20
Oral mucosa	10	20
Neck	12	24
Site of the initial lesions		
Face	26	52
Upper extremity	18	36
Lower extremity	3	6
Trunk	1	2
Genitals	2	4
Site of lesion which bothers patients the most		
Face	34	68
Upper extremity	8	16
Lower extremity	4	8
Trunk	2	4
Genitals	2	4
Duration of lesions		
≤2 years	23	46
>2 years	27	54
Family History of vitiligo		
Yes	6	12

Variables	Frequency (n=50)	Percentage %
No	44	88
Percentage of BSA affected by vitiligo		
≤20	30	60
>20	20	40
Suspected Precipitants of vitiligo		
Physical trauma	3	6
Severe sun burn	2	4
Pregnancy	2	4
Emotional stress	3	6
None	40	80
Leukotrichia		
Present	7	14
Absent	43	86
Koebnerization		
Present	9	18
Absent	41	82

The clinical spectrum of vitiligo in this study is as follows; generalized - 28 patients (56%), acrofacial – 7 patients (14%), mixed – 2 patients (4%), segmental – 12 patients (24%) and focal – 1 patient (2%). These findings are depicted in Table 3.

Table 3. Clinical spectrum of vitiligo

Variables	Frequency (n=50)	Percentage
Generalized	28	56
Acrofacial	7	14
Mixed	2	4
Segmental	12	24
Focal	1	2

In the study, 8 out of the 10 patients who identified a precipitant had generalized vitiligo

while the other patients had acrofacial and segmental vitiligo. However, it was not a statistically significant finding ($p = 0.984$). The identified precipitants were physical trauma, severe sun burn, pregnancy and emotional stress. These findings are illustrated in Table 4.

Koebnerization was present in nine patients. Seven of the patients (77.8%) had generalized vitiligo, one patient (11.1%) had acrofacial vitiligo and one other patient (11.1%) had segmental vitiligo. There was no statistically significant difference ($p = 0.679$) between Koebnerization and clinical spectrum of vitiligo. Leukotrichia was present in seven patients. Six of the patients (85.2%) had segmental vitiligo and one patient (14.3%) had mixed vitiligo. The p value of 0.001 suggests that there is a positive correlation between leukotrichia and segmental vitiligo.

Table 4. Relationship between suspected precipitants and clinical spectrum of vitiligo

Suspected precipitants	Generalized	Acrofacial	Clinical spectrum of vitiligo			
			Mixed	Segmental	Focal	Total
Physical trauma	2(66.7%)	1(33.3%)	0(0%)	0(0%)	0(0%)	3(100%)
Severe sun-burn	2(100%)	0(0%)	0(0%)	0(0%)	0(0%)	2(100%)
Pregnancy	2(100%)	0(0%)	0(0%)	0(0%)	0(0%)	2(100%)
Emotional stress	2(66.7%)	0(0%)	0(0%)	1(33.3%)	0(0%)	3(100%)
None	20(50%)	6(15%)	2(5%)	11(27.5%)	1(2.5%)	40(100%)
Total	28(56%)	7(14%)	2(4%)	12(24%)	1(2%)	50(100%)

Fisher's Exact test= 6.314, $p=0.984$

Table 5. Relationship between koebnerization and clinical spectrum of vitiligo

Koebnerization	Generalized	Acrofacial	Clinical spectrum of vitiligo			
			Mixed	Segmental	Focal	Total
Present	7(77.8%)	1(11.1%)	0(0%)	1(11.1%)	0(0%)	9(100%)
Absent	21(51.2%)	6(14.6%)	2(4.9%)	11(26.8%)	1(2.4%)	41(100%)
Total	28(56%)	7(14%)	2(4%)	12(24%)	1(2%)	50(100%)

$\chi^2 = 2.413, P = 0.679$

Table 6. Relationship between leukotrichia and clinical spectrum of vitiligo

Leukotrichia	Generalized	Acrofacial	Clinical spectrum of vitiligo			
			Mixed	Segmental	Focal	Total
Present	0(0%)	0(0%)	1(14.3%)	6(85.2%)	0(0%)	7(100%)
Absent	28(65.1%)	7(16.3%)	1(2.3%)	6(14%)	1(2.3%)	43(100%)
Total	28(56%)	7(14%)	2(4%)	12(24%)	1(2%)	50(100%)

$$\chi^2 = 20.930, p = 0.001$$

The relationships between Koebnerization and leukotrichia and spectrum of vitiligo are presented on Table 5 and Table 6 respectively.

5. DISCUSSION

The age range of the patients with vitiligo was 18 – 72 years with a mean age of 35 ± 17 years at presentation which is similar to the findings by Mason et al [6]. There were more females than males in this study as previously documented by Ayanlowo et al [5]. This higher number of women seemed to suggest that women were more concerned about their appearance than their male counterparts. The study also showed that the age group with the least percentage was the elderly population (age group 61 – 80 years). Cybulski et al. [11] in his study on skin disorders among an elderly population in Poland also found that only 4.9% of the elderly patients with skin diseases had vitiligo which was quite low compared to the percentages obtained for other skin disorders. These findings highlight the fact that the elderly population are less concerned about their cosmetic appearance and may not seek medical care for skin discoloration.

The occupation of the patients showed that most of them were students, civil servants and traders. A possible explanation for this could be that the occupation of these sets of people exposes them to interacting with different persons and this could likely subject them to much embarrassment.

Most of the patients (52%) in the study were married and this may be due to concerns from their spouses about the disorder. The patients also felt that disorder was communicable and were concerned about infecting their spouses.

Most of the patients had tertiary level of education and this may be because persons who had no formal education or a lower level of education may have lower health seeking behaviour than persons with higher level of

education. This finding is in keeping with the outcome of previous studies that have been conducted in various parts of the world showing that persons with higher level of education have better health seeking behaviour and knowledge of skin care [12,13].

The face was the most common site of onset in the patients (52%) which is similar to the findings in a study conducted in Port-Harcourt by Altraide et al. [14] where the face was also the commonest site of onset (28%) but much less in terms of percentages. However, Agarwal et al. [15] found the lower limbs (33.7%) to be the commonest site of onset in a study conducted in Uttarakhand, India. Most of the patients (68%) also reported that lesions on the face bothered them the most because it was easily noticed and caused them so much embarrassment.

A positive family history was found in six patients (12%) which is similar to the findings by Altraide et al. [14] (7.3%) and Handa et al. [16] (11.5%). All the patients with a family history of vitiligo had generalized vitiligo in this study.

Most of the patients (54%) had the lesions present for at least two years prior to presentation at the Dermatology clinic. This was because they were being managed for the condition at nearby hospitals by primary care physicians or were seeking alternative therapies and presented after lesions did not resolve.

Generalized vitiligo was the most common clinical pattern which was observed in 28 patients (56%). Generalized vitiligo was also the most common clinical type found in some studies which were conducted by Altraide et al. [14] in Nigeria and Gopal et al. [17] in India. In contrast, other studies conducted by Ayanlowo et al. [5] and Onunu et al. [18] found acrofacial vitiligo and focal vitiligo to be most prevalent respectively. All these findings show that Non-Segmental Vitiligo is commoner than Segmental Vitiligo.

A few of the patients noticed that their lesions were likely to have been precipitated by physical trauma, emotional stress, severe sun burn and pregnancy. Most of the patients who noticed a precipitant had generalized vitiligo though this was not a statistically significant finding. Hence, more research is required to identify and establish factors that could precipitate vitiligo and if they correlate with the clinical spectrum of the disease. The exact aetiology of vitiligo is still unknown, however there is a possibility that these precipitants could lead to oxidative stress which is one of proposed mechanisms for melanocyte destruction [19].

Leukotrichia was present in 7 patients (14%) and koebnerization was found in 9 patients(18%). However in the study by Onunu et al. [18], he had a higher result for leukotrichia (23%) and a similar result for koebnerization (18.5%). The findings in a Korean study by Lee et al. [20] showed that all the 82 patients with segmental vitiligo had leukotrichia. Khaitan et al. [21] also noticed that leukotrichia occurred in most (86.1%) of the 188 patients with segmental vitiligo in his study in India. In this study, leukotrichia was observed in six (50%) of the twelve patients who had segmental vitiligo and also in one of the two patients with mixed vitiligo which was a significant finding.

6. CONCLUSION

The clinical spectrum and clinical characteristics of vitiligo in this study are mostly similar to the findings documented from previous studies. There is no relationship between the suspected precipitants and clinical spectrum of vitiligo.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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