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RESEARCH ARTICLE

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Psychiatric Comorbidity in A Dermatology Outpatient Clinic in A Lagos Tertiary Hospital

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ABSTRACT

Background and Purpose: The significant association between dermatological disorders and psychopathology has been established globally. However, little work has been documented about this relationship in sub-Saharan Africa. The objective of this study was to determine the prevalence of psychiatric morbidity and its correlation with age, gender and marital status among adult patients attending the dermatology outpatient clinic in Lagos, Nigeria.

Methodology: Seven hundred and nine consecutive new adult patients attending the dermatology outpatients' clinic at the Lagos State University Teaching Hospital, Ikeja, Lagos, Nigeria were recruited and invited to complete the Hospital Anxiety and Depression Scale.

Results: There were 305 (43.0%) males and 404 (57.0%) females. Of the total number of participants, 33.9% and 15.6% had various degrees of probable anxiety and depression respectively with an overall prevalence of 9.0%. There were no significant associations between the psychometric and sociodemographic variables.

Conclusion and Recommendation: This study also demonstrated that dermatological diseases can comorbid with psychiatric disorders. Therefore, early detection and psychological intervention of identified and diagnosed of psychiatric symptoms or disorders in dermatological patients is of significant therapeutic importance.

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Introduction

Several publications have indicated that the skin and central nervous system have a common embryological origin, common biochemical system and also share similar neuro-peptides [1-2]. Due to these shared neuro-chemical pathways by the brain and skin, it has been reported that serious skin disturbances can bring about psychiatric symptoms; likewise, the skin was also observed to react to emotional stress [1-3]. The reported prevalence rates of psychiatric morbidity in individuals with dermatological diseases range from 30% to 60% [1,3-5]. The frequently observed comorbid mental health disorders in dermatology patients include anxiety, depression, low self-esteem, reduced confidence, shame, poor social relationships, suicidal thoughts and attempts [1,3,7-10]. These mental health symptoms were also reported to affect the psycho-social aspects and quality of life of individuals with severe degrees skin diseases [1,3,7-10].

Published documented evidence also indicated some individuals with dermatological diseases that experience psychiatric disorders due to self-induced ulcers on the skin or due to medications from psychiatric treatment. While some individuals who experienced skin problems may display psychiatric symptoms due to delusional, hallucinatory experiences of perceived disfigurement of their skin [1-4]. In the same vein, there are some dermatological patients whose skin disorders were potentiated by their emotional or psychological disturbances. [1-4,7-9].

However, published evidence on the evaluation of psychiatric morbidity among patients suffering from dermatological diseases was found to be limited despite the globally accepted scientific data on the strong association between the brain and skin [1-3]. More so, data on the psychiatric aspects of dermatology patients were observed to be fewer in sub-Saharan countries including Nigeria. Most studies on this important topic were majorly from the western countries; we therefore considered it valuable to determine prevalence of psychiatric morbidity and their pattern of presentations in Nigeria. Thus, a study on psychiatric morbidity on Nigerian with dermatological ailments cannot be overemphasised. The objective of this study was to determine the prevalence of co morbid psychiatric morbidity and its correlation with age, gender and marital status among adult patients attending the dermatology outpatient clinic in Lagos, Nigeria.

Materials and Method

Study design and location

This study was a cross-sectional and descriptive survey that took place from January 2016 to December 2018 at the Dermatology clinic of the Department of Medicine, Lagos State University Teaching Hospital, Ikeja, located at the cosmopolitan city of Lagos, the commercial capital of Nigeria.

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Participants

Seven hundred and nine consecutive newly registered adult outpatients aged 16 years and above who consented to the study were invited to participate in the study. Approval for the study was obtained from the Ethics and Research Committee of the hospital.

Measures

The participants were invited to complete the Hospital Anxiety and Depression Scale [10] after signing the informed consent form attached to it. The HADS is a self-report inventory made up of 14 four-point scaled items designed to detect anxiety and depression in general medical outpatients. It has two sub-scales, seven for anxiety (HADS-A) and depression (HADS-D). Each item is scored from 0-3 making the maximum score per scale to be 21. Scores between 0 and 7 are generally regarded as "non-cases," while those above 8 and 10 are regarded as "doubtful cases". Scores between 11 and 21 are regarded as "definite cases." For the purpose of this study, values of 7 and below were "non cases" while values of 8 and above were defined as "cases" based on the validated cut-off for Nigerians [11]. HADS has been reported to perform well in assessing the symptom severity of anxiety disorders and depression in both somatic, psychiatric and primary care patients and in the general population. The sensitivity and specificity for both HADS-A and HADS-D of approximately 0.80 were very similar to the sensitivity and specificity achieved by the General Health Questionnaire (GHQ). Correlations between HADS and other commonly used questionnaires were in the range .49 to .83. The HADS has been validated and used extensively in Nigeria and found to have a high sensitivity and specificity [12-13]. The dermatological diagnoses were made by a consultant dermatologist (FOAA) who also administered the instruments on the invited participants.

Data Analysis

Statistical analysis was performed with the aid of Statistical Package For Statistical Solutions (SPSS; version 17 windows). The collected data were analysed with descriptive statistics. The differences between men and women characteristics were analysed with Chi square. The results were reported with 95% confidence intervals and P value <0.05 was considered significant.

Results

Of the 709 participants, their mean age was 36.66 years, SD 15.40 with a range between 16 and 86 years. There were 305 (43.0%) males and 404 (57.0%) females. 305 (43.0%), 337 (47.5%), and 67 (9.4%) were in the age-groups 15-30, 31-60 and 61+ respectively. More than half of them 432 (61%) were married, 262 (37%), single and 15 (2%) were widowed, separated or divorced. With regards to occupation, students 196 (27.6%) has the highest frequency, followed by tradespersons and related workers 136 (19.2%) while the professionals were 120 (17.0%) as shown in Table 1. Table 2 shows that 34.0% of the participants scores above the cut off mark of 10 with regards to probable anxiety and 15.6% scored above 10 concerning their manifestations of probable depression while some of the participants 9.0% manifested with mixed anxiety and depression. The results also showed that female participants scored higher in the anxiety (17.7% vs 16.3%) and depression mean scores (9.2% vs 6.4%). The age-group 31-60 has the highest mean score (19.3% and 10.1%) for credible anxiety and depression respectively when compared to other age groups as shown in Table 2.

After adjusting for sex, age-group, occupation and diagnosis, a backward deletion stepwise multiple regression analysis showed that none of the variables was an independent predictors of anxiety scores (P>0.05); while occupation and diagnosis were independent predictors of depression scores (P = 0.017; P = 0.046) as reflected in Table 3. The odds of a male having high anxiety scores (>7) is 7% less and 15% greater than the odds of a female having high anxiety scores and depression scores (>7) respectively (P>0.05). The odds of a participant having high anxiety score (>7) reduces by 15% as age-group increases; but increases by 11% for depression scores (>7) as age-group increases (P>0.05). The odds of having high (>7) and low (<=7) anxiety and depression scores are almost even for occupation and diagnoses types (~1) P>0.05 as shown in Table 4. Nonetheless, Table 5 shows that eczema/dermatitis 147 (20.7%), pigmentary disorders 65 (9.2%), fungal infection 64 (9.0%), urticarias/erythemas 52 (7.9%), and acne/rosacea 51 (7.2%) were the top five most frequent dermatological disorders among the participants.

Table 1: Descriptive analysis for demographic variables showing frequencies and percentages (N = 709).

Variables	Frequency	%
Gender		
Male	305	43.0
Female	404	57.0
Age-group		
15-30	305	43.0
31-60	337	47.5
61+	67	9.4
Marital Status		
Married	432	61
Single	262	37
Others (Widowed/Separated/Divorced)	15	2
Occupation		
Students	196	27.6
Tradespersons and related Workers	136	19.2
Professionals	120	17.0
Manager and Administration	79	11.1
Unemployed	46	6.5
Clerical and Service Worker	41	5.8
Associate professionals	28	3.9
Housewife	17	2.4
Intermediate Sales and Service worker	16	2.3
Elementary Clerical, Sales and Service Worker	15	2.1
Labourers and related Workers	8	1.1
Armed Forces and Security Forces	7	1.0
Total	**709**	**100**

Table 2: Descriptive analysis of patients by anxiety and depression scores (N = 709).

Variables	(*)% of patients with Score >7 for Anxiety	(*)% of patients with Score >7 for Depression	(*)% of patients with Score >7 for Anx. &Depr.	(**)% of patients with Score >=10 for Anxiety	(**)% of patients with Score >=10 for Depression	(**)% of patients with Score >=10 for Anx. &Depr.
	Frequency (%)					
Gender						
Male	86 (28.2)	52 (17.0)	39 (12.8)	54 (17.7)	28 (9.2)	18 (5.9)
Female	117 (29.0)	62 (15.3)	45 (11.1)	66 (16.3)	26 (6.4)	16 (4.0)
Age-group						
15-30	89 (29.2)	43 (14.1)	32 (10.5)	50 (16.4)	17 (5.6)	7 (2.3)
31-60	101 (30.0)	61 (18.1)	46 (13.6)	65 (19.3)	34 (10.1)	24 (7.1)
61+	13 (19.4)	10 (14.9)	6 (9.0)	5 (7.5)	3 (4.5)	3 (4.5)
Occupation						
Advance Clerical and Service Worker	19 (46.3)	10 (24.4)	8 (19.5)	6 (14.6)	6 (14.6)	2 (4.9)
Armed Forces and Security Forces	2 (28.6)	2 (28.6)	2 (28.6)	2 (28.6)	2 (28.6)	2 (28.6)
Associate Professionals	10 (35.7)	3 (10.7)	2 (7.1)	5 (17.9)	2 (7.1)	1 (3.6)
Elem. Clerical, Sales & Service Worker	5 (33.3)	3 (20.0)	3 (20.0)	3 (20.0)	1 (6.7)	1 (6.7)
Housewife	2 (11.8)	4 (23.5)	2 (11.8)	0 (0.0)	0 (0.0)	0 (0.0)
Intermed. Clerical, Sales & Service worker	3 (18.8)	2 (12.5)	1 (6.3)	3 (18.8)	2 (12.5)	1 (6.3)
Labourers and Related Workers	5 (62.5)	4 (50.0)	4 (50.0)	5 (62.5)	3 (37.5)	3 (37.5)
Manager and Administrator	20 (25.3)	11 (13.9)	8 (10.1)	14 (17.7)	4 (5.1)	4 (5.1)
Professionals	31 (25.8)	16 (13.3)	10 (8.3)	20 (16.7)	9 (7.5)	5 (4.2)
Students	54 (27.6)	25 (12.8)	20 (10.2)	31 (15.8)	8 (4.1)	3 (1.5)
Tradespersons and Related Workers	41 (30.1)	30 (22.1)	20 (14.7)	24 (17.6)	14 (10.3)	9 (6.6)
Unemployed	11 (23.9)	4 (8.7)	4 (8.7)	7 (15.2)	3 (6.5)	3 (6.5)

Table 3: Stepwise backward multiple regression analysis of anxiety and depression scores.

Model	B	SE	Beta	T	*Sig. (P-value)	R	R^2	Adj. R^2
	Anxiety Scores							
Sex	-0.018	0.314	-0.002	-0.057	0.955	0.081	0.007	0.001
Age-group	-0.242	0.244	-0.038	-0.994	0.321			
Occupation	-0.070	0.054	-0.049	-1.310	0.191			
Diagnosis	0.038	0.026	0.055	1.458	0.145			
Age-group	-0.242	0.243	-0.038	-0.993	0.321	0.081	0.007	0.002
Occupation	-0.070	0.054	-0.049	-1.309	0.191			
Diagnosis	0.038	0.026	-0.055	1.458	0.145			
Occupation	-0.069	0.054	-0.048	-1.287	0.199	0.072	0.005	0.002
Diagnosis	-0.035	0.026	-0.051	1.348	0.178			
Diagnosis	0.037	0.026	0.054	1.437	0.151	0.054	0.003	0.002
	Depression Scores							
Sex	0.106	0.257	0.016	0.413	0.680	0.122	0.015	0.007
Age-group	0.035	0.199	0.007	0.178	0.859			
Occupation	-0.104	0.044	-0.089	-2.368	[s]*0.018*			
Diagnosis	0.041	0.021	0.073	1.934	0.053			
Sex	0.105	0.257	0.015	0.409	0.683	0.122	0.015	0.011
Occupation	-0.104	0.044	-0.089	-2.375	[s]*0.018*			
Diagnosis	0.042	0.021	0.074	1.972	[s]*0.049*			
Occupation	-0.105	0.044	-0.090	-2.403	[s]*0.017*	0.121	0.015	0.012
Diagnosis	0.042	0.021	0.075	1.988	[s]*0.046*			

Dependent variable: *patients' anxiety scores; depression scores*

[s]*Significant at 5% level*

**Stepwise backward multiple regression analysis showing the influence of demographic variables on patients' anxiety and depression scores independently (P<0.05)*

Table 4: Odds ratios (95% Confidence Intervals) of Anxiety and Depression scores after correcting for Demographic Variables and Key Diagnoses.

	*Odds Ratio	Std. Err.	Z	*Sig. (P-value)	[95% Conf. Interval]
Demographic Variables			**Anxiety**		
Sex	0.93	0.158	-0.40	0.689	[0.67, 1.30]
Age-group	0.85	0.114	-1.21	0.226	[0.66, 1.11]
Occupation	0.95	0.027	-1.83	0.067	[0.90, 1.01]
Diagnoses	1.01	0.014	1.04	0.297	[0.99, 1.04]
Demographic Variables			**Depression**		
Sex	1.10	0.228	0.47	0.637	[0.74, 1.66]
Age-group	1.11	0.178	0.63	0.529	[0.81, 1.52]
Occupation	0.97	0.032	-1.06	0.288	[0.91, 1.03]
Diagnoses	1.03	0.017	1.59	0.111	[0.99, 1.06]
Key Diagnoses			**Anxiety**		
Psoriasis	1.54	0.810	0.82	0.411	[0.55, 4.32]
Pigmentary disorders	1.51	0.413	1.48	0.138	[0.89, 2.58]
Chronic inflammatory disorders	0.74	0.347	-0.65	0.513	[0.29, 1.86]
Drug and cosmetic induced dermatoses	0.96	0.388	-0.09	0.926	[0.44, 2.12]
Tumour benign	0.88	0.307	-0.36	0.715	[0.45, 1.75]
Key Diagnoses			**Depression**		
Psoriasis	1.95	1.153	1.13	0.257	[0.61, 6.21]
Pigmentary disorders	2.08	0.640	2.37	$0.018	[1.13, 3.80]
Chronic inflammatory disorders	0.47	0.349	-1.02	0.309	[0.11, 2.02]
Drug and cosmetic induced dermatoses	1.58	0.699	1.03	0.305	[0.66, 3.76]
Tumour benign	1.20	0.490	0.45	0.653	[0.54, 2.67]

Dependent variable: patients' anxiety scores

* *Logistic Regression analysis (reporting odds ratio) showing the odds ratio of demographic variables and key diagnoses on anxiety and depression scores (<=7, >7)*

$*Significant at 5% level*

Table 5: Pattern and frequency of dermatological diseases of the participants.

Diagnosis	Frequency	%
Eczema/Dermatitis	147	20.6
Pigmentary disorders	65	9.2
Infections Fungal	64	9.0
The Urticarias / Erythemas	52	7.3
Acne/Rosacea	51	7.2
Tumour benign	47	6.6
Keloids and scars	41	5.8
Drug and cosmetic induced dermatoses	33	4.7
Chronic inflammatory disorders	27	3.8
Infections viral HPV	26	3.7
Hair/ scalp disorders	23	3.2
Congenital/hereditary disorders	18	2.5
Psoriasis	16	2.3
Lichen Planus	15	2.1
Connective tissue disease	14	2.0
Infections parasitic	11	1.6
Infections Viral HIV	10	1.4
Xerodermas	9	1.3
Infections Viral Herpes	9	1.3
Tumour malignant	7	1.0
Solar damage	5	0.7
Keratodermas	5	0.7
Leprosy	5	0.7
Cutaneous lymphoma	4	0.6
Hyperhidrosis	3	0.4
Bullous dermatoses	2	0.3
Total	**709**	**100**

Discussion

This study sought out to investigate the degrees of probable anxiety and depression among individuals attending a dermatology outpatients' clinic in a teaching hospital in Lagos, Nigeria. The results of this study showed that 34.0% and 15.6% of the investigated participants experienced probable anxiety and depression respectively and 9.0% manifested with both symptoms of anxiety and depression. These findings appear to be in agreement with other studies that reported high rates of psychiatric morbidity among patients with skin conditions. With regards to our finding of 34% probable general anxiety among our participants, previous studies on anxiety among dermatology patients found varying high rates that ranged from 12% [14], 13% [15], 17.2% [16], 29% [17], and a prevalence as high as 47% [18]. High levels of anxiety and psychological distress make the brain to release the excess cortisol hormone which can also bring about sweaty and oily skin, which in turn makes the skin to be vulnerable to acne and other dermatological conditions [19-20].

The general findings and conclusions from most workers concerning anxiety symptoms with comorbid dermatological disorders indicated that it could significantly affect the severity of dermatological symptoms [1-2,19-20]. Nonetheless, individuals suffering from severe skin disorders may develop anxiety symptom because of the misery of living with the observable skin problem, which may also have some negative effects on quality of life of the individual. The individual with

the observable skin conditions are often teased, bullied and embarrassment by their colleagues which may also lead to social stigma and discrimination, social withdrawal, self-isolation and avoidance of important events due to lifestyle restrictions like swimming and playing other team sports [1-2,5,7]

With regard to the result of 15.6% of probable depression among the participants, the finding was also in consonance with the reported findings of other researchers. The reported prevalence rates of depression among dermatologic patients ranged from 10.1% [16], 15.8% [19], 18% [14], 34.3% [5], 32% [15], and as high as 67% [18]. The association of depression with chronic dermatological diseases is not surprising to be common. This is because about 300 million people were reported to be suffering from depression globally [21]. Likewise, studies have shown that psychiatric morbidity had been reported in approximately between 30% and 60% of dermatology patients and the prevalence of depression among dermatology patients far exceed that of the general population [22]. In one hand, clinical depression makes certain individuals undergoing some forms of stress to develop skin problems probably due to reduced skin immunity while on the other hand, depression could be due to disfigurement from long course and effects on self-esteem and body appearance [21-22].

The possible explanations for these observed high rates of psychopathology among dermatology patients could be due to the fact that the skin is the largest and most visible organ of the human body and it also has the function in tactile receptivity of the sensory organs which are parts of neuronal stimuli. In the light of this, due to the neural connections between the brain and skin that both originated from same ectodermal, they could be easily affected by same hormones and neurotransmitters [23-24]. Other possible reasons for high degrees of psychopathology among dermatology and psychiatry could be due to the observation that individuals who were already experiencing psychiatric conditions such as compulsive-obsessive disorder, hypochondriasis, delusions of parasitosis and tactile hallucinations which could induce psychosomatic dermatological diseases such as dysmorphophobia, trichotillomania, factitial dermatitis and neurotic excoriations. Again, these psychiatric conditions may bring psychiatric patients for consultations at the dermatology clinics [22-25].

Some medicaments such as steroids and psychotropics such as lithium and carbamazepine used in treating psychiatric conditions may also precipitate dermatological. Obvious and visible skin disfigurement such as acne vulgaris, urticaria, eczema and psoriasis could also make the individual to be vulnerable to the development of some psychiatric ailments such as anxiety and depression, suicidal thoughts and attempts [22-26].

Along this line, there are also some mental health disorders that may also be precipitated due to disfiguring of the skin such as severe acne, psoriasis, chronic eczema, multiple neurofibromas and rhinophyma that may affect the psyche of the sufferer's self-esteem, confidence, which can lead to social isolation or withdrawal [1-2,25]. Another factor found to be responsible for high rates of symptoms of psychopathology could be due to the slow response and prolongation of duration of dermatological diseases to treatment [22-26].

Another socio-economic factor to reckon with in this society could be due to the high cost of treatment which is mostly borne out of personal or family expenditure which most probably were not budgeted for. Furthermore, in the city of Lagos where the dermatology clinic is located is situated is at the centre of the urban city and those living at the outskirts of the city have to travelled long distances to get to the hospital.

From the literature review, it could be deduced that there are numerous significant psychosocial issues in dermatological conditions. It is therefore necessary that dermatologists should also consider not only the psychological status of their clients but also their quality of life found to be critical in the management of dermatological diseases. Therefore, the biopsychosocial management methods and consultation-liaison approaches should involve the internist endocrinologist, dermatologist, clinical psychologist, and psychiatrist. In this manner, addressing the biopsychosocial aspects of skin disorders will not only help in reducing exacerbation of psychological and dermatological symptoms, but will also reduce the period of the skin ailment [19]. To achieve this end, residents in the dermatology unit should also acquire minimum psychiatry training during their post-graduate training [1-2,7,19, 23-25]. However, such holistic application in Nigerian dermatology clinic is yet to be explored.

For these aforementioned reasons, if the comorbid stressful psychological distress were not recognised, and treated, the dermatological treatment can be difficult.

Concerning the psychological management of the comorbid mental disorders such as anxiety, panic, symptoms of depression and social withdrawal, which have been reported to negatively impact upon the disease course, and adherence to dermatological treatment success; studies have demonstrated that dermatological patients too can benefit from cognitive behavioural therapy (CBT), and other stress management techniques because they improve the psychological functioning in patients with psychosomatic conditions including dermatological diseases. It is therefore essential that the establishment of a good psychotherapeutic relationships and early psychological therapy interventions may positively impact the treatment outcomes in dermatology patients [27-29].

This study too has its limitations because of its cross-sectional design, a causal direction of the relationship between variables could not be fully established. The participants were recruited from one tertiary hospital only which may not represent psychosocial factors from other parts of the country. Therefore, the findings of this study may not be truly representative of the Nigerian population. We suggest that future longitudinal and epidemiological multi-centered study be carried out on the psychosocial and demographical correlates of the Nigerian patients with dermatological diseases. However, the strength of this study includes its large sample size in an understudied environment and culture. Nonetheless, it has added to the current body of knowledge on the understanding of the comorbidity between psychopathology and dermatological diseases in the Nigerian and African literature.

Conclusion

The findings of this study demonstrated that patients receiving treatment for various dermatological disorders also experience some degrees of anxiety and depression. It is therefore suggested that dermatologist should try and acquire training on how to recognise symptoms of common mental health disorders among their patients. If possible, dermatologist should screen their patients with simple psychometric tools or instruments such as the hospital anxiety and depression scale (HADS) and general health questionnaire (GHQ) while waiting to be seen by the clinician at the outpatients' clinic. The early recognition and psychological interventions of common mental disorders that comorbid with dermatology disorders will definitely bring about early recovery, prevent psychological distress, reduce social stigma and discrimination in patients with skin diseases.

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