

THE PREVALENCE OF PSYCHIATRIC DISORDERS IN PATIENTS ATTENDING DERMATOLOGY OUTPATIENT CLINICS AT BARAU DIKKO TEACHING HOSPITAL (BDTH), KADUNA STATE UNIVERSITY, NIGERIA

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ABSTRACT

Although psychiatric disorders are frequent among dermatological patients, a few studies have formally assessed the performance of any psychiatric screening questionnaire in dermatological practice. This study tested the ability of the 12-item General Health Questionnaire (GHQ-12) to identify psychiatric morbidity in dermatological patients. A sample of 125 outpatients attending dermatology clinics at Barau Dikko Teaching Hospital (BDTH) Kaduna Nigeria, completed a sociodemographic questionnaire, a GHQ-12 and were administered the Structured Clinical Interview for WHO International Classification of Diseases (ICD-10) by a trained mental health professional. Patients that scored "two" and above on GHQ-12 were selected for the stage two interview. Out of all dermatological patients who visited the health facility, 125 were recruited and consented to participate in the study giving a response rate of 100%, which makes up to 104% of the initial proposed sample size (n=120). Of the 125 participants, 48 (38.4%) were men and 76(60.8%) were women. The mean age was 27 years (SD, ±15 years; range, 18-55 years). The psychiatric morbidity was significant in our dermatological patients, thus indicating the use of GHQ 12 in assisting to formulate psychiatric interventions and possible reduction in morbidity and cost of treatment.

Keywords: Dermatology, Psychopathology, GHQ 12, Psychiatric interview

INTRODUCTION

The association between disorders of skin and brain is recognized since time immemorial, skin has a special place in psychiatry with its responsiveness to emotional stimuli and ability to express emotions such as anger, fear, shame and frustration, and by providing self-esteem, the skin plays an important role in the socialization process, which continues from childhood to adulthood. (Domonkos, and Saunders, 1971).

The relationship between skin and the brain exists due to more than a fact that, the brain, as the center of psychological functions, and the skin, have the same ectodermal origin and are affected by the same hormones and neurotransmitters (Koblenzer, 1983). Psychodermatology describes an interaction between dermatology and psychiatry and psychology. The incidence of psychiatric disorders among dermatological patients is estimated at about 30 to 60% (Korabel *et al.*, 2008). Even in present day skin disorders

frequently results in social rejection, isolation and severe disability in the affected persons (Domonkos and Saunders, 1971).

In dermatology practice a wide range of somatization related symptoms including cutaneous sensory syndromes, pain, numbness, local or generalized pruritic states, are seen without any evidence of demonstrable skin pathology (Koblenzer, 1983). Dermatological clinics are known to have a higher prevalence of psychiatric morbidity than the general medical in-patients (Korabel *et al.*, 2008). Psychiatric and psychological factors play an important role in at least 30% of dermatological disorders (Gupta *et al.*, 2005). In many cases the impact of skin disorder is a stronger predictor of psychiatric morbidity than the clinical severity of the disorder.

Consideration of psychiatric and psychosocial factor is important both for the management and prevention of a wide range of dermatological disorders. It is useful to use bio-psycho-social model, which takes into account the biological aspects and course of the dermatological condition, the psychiatric co-morbidity such as major depression as well as the impact of the skin disorder on the quality of life and the social aspects such as the impact of skin disease upon social and occupational functioning (Gupta and Gupta, 2003). The field of psychodermatology encompasses all conditions involving the mind and the skin. A close relationship has long been postulated to exist between these two structures owing to their common embryological origin from the ectoderm and the fact that they are affected by similar neuro-hormonal factors. (Domonkos, and Saunders, 1971, Koblenzer, 1983). A need for biopsychosocial approach to patients with skin disease which considers the psychological and issues in addition to the primary dermatological factors is being increasingly recognized to be important in contemporary practice. (Domonkos, and Saunders, 1971, Gupta *et al.*, 2005, Korabel *et al.*, 2008.). Thus, it is important for clinicians to be aware of overlapping areas between the specialties so that treatment of psychodermatological disorders can be effected by liaison involving a multidisciplinary team comprising dermatologist, psychiatrist, psychologist and family physician. The area of psychodermatology has received very little attention in Nigeria, it is therefore imperative to assess the prevalence of psychiatric illness among the attendees of dermatology clinic at Barau Dikko Teaching Hospital (BDTH). Therefore, the aim of this research is to find the prevalence of psychiatric disorders among the outpatients attending the dermatology clinic.

MATERIALS AND METHODOLOGY

The study was a cross sectional, and conducted at Barau Dikko Teaching Hospital (BDTH). The Barau Dikko Teaching Hospital is a 300 bed facility located in Kaduna North Local Government Area of the Kaduna metropolis and is bounded to the South by Abdurrahman Okene road, to the East by Golf Course road, to the West by the Independence Way and to the North by Lafia road. Ethical approval was obtained from Barau Dikko Teaching Hospital Research and Ethical Committee (HREC) before commencement of the project. All patients attending the dermatology clinics in the two hospitals were briefed about the study and its purpose and then were issued with three types of questionnaires (Sociodemographic, GHQ 12), as well as a consent form. A convenient sample method was employed in choosing our patients. Those who could not read and write were interviewed by volunteer attendants. Patients were assessed as they came for consultation or follow up. The study took about nine weeks from 01 July, 2019 to 30th August, 2019 to be completed, and confidentiality was maintained throughout the study. Our inclusion criteria was that all patients with skin problems attending the dermatology clinic in BDTH, while our exclusion criteria was any dermatological patients that were non ambulant or who had any mental illness prior to the study.

Research Questions

1. Is there a relationship between socio-demographic variables and psychological disorder in dermatology patients?

H⁰: There is no relationship between socio-demographic variables and psychological disorder in dermatology patients

H¹: There is a relationship between socio-demographic variables and psychological disorder in dermatology patients

2. Is there a relationship between lifestyle and psychological disorder in dermatology patients?

H⁰: There is no relationship between lifestyle attitudes and psychological disorder in dermatology patients

H¹: There is a relationship between lifestyle attitudes and psychological disorder in dermatology patients

3. Is there a relationship between the site of skin lesion and psychological disorder in dermatology patients?

H⁰: There is no relationship between site of skin lesion and psychological disorder in dermatology patients

H¹: There is a relationship between site of skin lesion and psychological disorder in dermatology patients

4. Is there an association between duration of lesion and the onset of psychological disorder in dermatology patients?

H⁰: There is no relationship between duration of lesion and psychological disorder in dermatology patients

H¹: There is a relationship between duration of lesion and psychological disorder in dermatology patients

The patients were screened using GHQ -12 (General Health Questionnaire - Goldberg 1972), for possible psychiatric morbidity. Patients that scored "two" and above on GHQ-12 were selected for the stage two interviews. Those who had no diagnosable psychiatric illness on psychiatric interview were placed in the non-ill category. Those scoring ≥ 2 on GHQ - 12 and confirmed to have psychiatric morbidity on clinical interview by a psychiatrist were placed as the case group. The psychiatric interview was based on guidelines from manual of (Present State Examination (PSE) (Wing *et al.*, 1974) as well as on guidelines using diagnostic criteria as laid down in (International Classification of Diseases (ICD-10) (WHO 1992). All data were analysed and carried out with the help of computer software of Statistical Package for Social Sciences (SPSS 25) and statistical significance has been calculated as per normal procedure.

Sample size determination

Sample size for the study was calculated using the formula below (Chocran, 1977).

$(z^2 pq)$

$$N = \frac{d^2}{p}$$

N = the desired sample when the population is greater than 10,000.
 Z = the desired normal deviate, usually set at 1.96, which corresponds to the 95% confidence level.

P = the current prevalent rate of psychiatric disorders among patients

attending dermatology clinic.

Q = 1 – p (proportion of failure).

D = degree of accuracy desired, usually set at 0.05.

Therefore, the minimal sample size required considering that psychiatric and psychological factors play an important role in at least 30 percent of dermatological disorders (Gould and Grag, 1983) will be:

$$\frac{(1.96)^2 \times 0.3 \times 1-0.3}{0.05^2}$$

$$= \frac{3.84 \times 0.3 \times 0.7}{0.0025}$$

$$= 322.56$$

$$= 323$$

$$= 323$$

Sample size calculation for population < 10,000:

$$nf = \frac{n}{1+n/N}$$

nf = the desired sample size when the population is less than 10,000.

n = calculated sample size which is 323.

N = the estimated population size in the dermatology clinic is 120.
323

Nf = 1+323/120
 (i) 323/2.7
 (ii) 119.63

Therefore, the sample size in this study would be 120.

RESULTS

Out of all dermatological patients who visited the health facility, 125 were recruited and consented to participate in the study giving a response rate of 100%, which makes up to 104% of the initial proposed sample size (n=120). Of the 125 participants, 48 (38.4%) were men and 76(60.8%) were women. The mean age was 27

years (SD, ±15 years; range, 18-55 years). Table 1 below summarizes the characteristics of dermatological patients included in this study. Out of 125 participants in the study, 48 (38.7%) were males and 76 (61.3%) females. 66 (53.7%) were between 18-34 years while 30 (24.4%) and 27 (22.0%) were between ages >44 years and 35-44 years respectively. 65 (52.8%) were either single, divorced or widowed while 58(47.2%) were married. While majority (47.5%) had higher level of education compared to secondary (32.8%) and primary (19.7%) levels, slightly above half of the study participants (51.6%) were unemployed. Out 125 dermatological patients included in the study, 87.2% had psychological disorder compared to only 12.8% who were negative for psychological disorder. Although majority (64.0%) was alcohol drinkers, only 27.3% were cigarette smokers.

Table 1: Descriptive Statistics of Demographic and Clinical Characteristics of Dermatology Patients (125)

Variables	Frequency (n)	Percentage (%)	Valid Percentage (%)
Gender			
Male	48	38.4	38.7
Female	76	60.8	61.3
Missing	1	0.8	
Age Group (Yrs)			
18-34	66	52.8	53.7
35-44	27	21.6	22.0
>44	30	24.0	24.4
Missing	2	1.6	
Marital Status			
Single/Divorced/Widowed	65	52.0	52.8
Married	58	46.4	47.2
Missing	2	1.6	
Educational Level			
Primary	24	19.2	19.7
Secondary	40	32.0	32.8
Tertiary	58	46.4	47.5
Missing	3	2.4	
Employment Status			
Employed	60	48.0	48.4
Unemployed	64	51.2	51.6
Missing	1	0.8	
Psychological Disorder			
No	16	12.8	12.8
Yes	109	87.2	87.2
Alcohol Intake			
Yes	80	64.0	64.0
No	45	36.0	36.0
Cigarette Smoking			
Yes	33	26.4	27.3
No	88	70.4	72.7
Missing	4	3.2	
Total	125	100	100

Key:

n=number, Yrs=Years

Table 2 shows the result of the GHQ administered to dermatology patients, between 78.2-91.1% of the dermatology patients self-reported either positive or negative responses. For questions with positive responses, between 79.0-89.5% of dermatology patients indicated ability to concentrate, make decision about things, play useful part in things, face problems, be reasonably happy and to enjoy day to day activities while between 78.2-91.1% indicated experiencing loss of sleep, constant strain, challenges overcoming difficulties, unhappiness or depression, loss of confidence and feelings of being worthless.

Table 2: Psychopathology Symptoms of Dermatology Patients (GHQ 12)

Symptoms	Frequency (n)	Percentage (%)
Being able to concentrate	98	79.0
Capable of making decisions about things	107	86.3
Playing useful part in things	110	88.7
Being able to face problems	111	89.5
Feeling reasonably happy	99	80.5
Being able to enjoy day to day activities	103	83.1
Loss of sleep	103	83.1
Felt constantly under strain	108	87.1
Felt couldn't overcome difficulties	109	87.9
Felt unhappy and depressed	97	78.2
Losing self confidence	100	80.6
Felt worthless	112	91.1

Key:
n=number

Table 3 shows summary of the morbidity of psychological disorder among dermatology patients of which 87.2% were positive with a mean GHQ score of 6.3 while the 12.8% of patients who were negative had a mean GHQ score of 4.3.

Table 3: Psychological Disorder Morbidity among dermatology Patients by GHQ Score

Variable Score	Frequency	Percentage	Mean	GHQ
Psychopathology				
Yes	109	87.2	6.3	
No	16	12.8	4.3	

Note: GHQ= global health questionnaire

Table 4: Psychiatric morbidity in dermatology patients from GHQ scores (n=109)

Psychiatric Diagnosis	No. of Patients with Psychopathology	Percentage
Depressive Episode/Disorder	52	47.71 %
Generalized Anxiety Disorder	38	34.86%
Obsessive-Compulsive Disorder	02	1.83%
Delusional disorder	15	13.77%
Schizophrenia	02	1.83%
	109	100%

The table 5 below summarized the prevalence of psychological disorder among patients with different dermatologic conditions. Majority of patients with different dermatologic condition were diagnosed with psychological disorder of which patients with pytriasis vesicular, vitiligo and fungal infections had a prevalence of 100% and mean GHQ score between 5.9-7.0, and patients with other skin infections had a psychopathology prevalence between 80.8-88.9% and a mean GHQ score between 5.6-6.2 respectively.

Table 5: Dermatologic Diagnosis of Psychological Disorder

Variable	Frequency (n)	Prevalence of Mean±SD		95% C.I.
		Psychopathy	GHQ	
Acne Vulgaris	14	85.7	5.6±1.2	4.9-6.3
Pytriasis Vesicular	8	100	7.0±1.9	5.4-8.6
Psoriasis	9	88.9	5.7±1.1	4.8-6.5
Vitiligo	2	100	6.0	-----
Dermatitis	26	80.8	6.2±1.1	5.7-6.6
Fungal Infection	13	100	5.9±0.8	5.4-6.3
Others	48	85.7	6.1±1.0	5.8-6.4

Note: n=number, SD= standard deviation, GHQ= global health questionnaire, C.I.= confidence interval

Table 6 below illustrates a chi squared analysis to determine the relationship between selected independent variables and psychopathology among dermatology patients. There was no statistically significant association between all socio-demographic variables and psychological outcomes among dermatology patients. However, lifestyle characteristics were found to be significantly associated with diagnosis of psychological outcome among dermatology patients of which dermatology patients who were alcohol drinkers were 0.3 times more likely to be diagnosed with psychopathology than nondrinkers [$\chi^2(1)=4.3$, $P<0.05$] and

patients who smoke were 3.7 times more likely to be diagnosed with psychological disorder than non-smokers [$\chi^2(1)=4.4, P<0.05$]. Similarly clinical manifestations was found to be statistically significantly associated with psychological outcomes of which patients with exposed lesion were 0.3 times more likely to be diagnosed with psychological disorder than patients with

unexposed dermatologic lesions [$\chi^2(1)=3.8, P<0.05$] and patients who were diagnosed with dermatologic lesion $<_6$ months were 0.3 times more likely to be diagnosed with psychological disorder than dermatologic patients who have been diagnosed for > 6 months [$\chi^2(1)=3.2, P<0.05$].

Table 6: Chi Squared Analysis of Psychopathology by Socio-Demographic Variables and Lifestyle.

Variable	No (%)	Yes (%)	O.R. (C.I.)	$\chi^2(df)$	P Value
Age Group(Yrs)					
18-34	9(13.6)	57(86.4)		0.9	0.1(2)
35-44	3(11.1)	24(88.9)			
>44	4(13.3)	26(86.7)			
Gender					
Male	8(16.7)	40(83.3)	1.7(0.6-4.9)	0.5(1)	0.5
Female	8(10.5)	68(89.5)			
Marital Status					
Single/Divorced/Widowed	2.2(0.7-6.6)			1.2(1)	0.3
Married	11(16.9)	54(83.1)			
	5(8.6)	53(91.4)			
Educational Level					
Primary	2(8.3)	22(91.7)		2.5(2)	0.3
Secondary	8(20.0)	32(80.0)			
Tertiary	6(10.3)	52(89.7)			
Employment Status					
Employed	9(15.0)	51(85.0)		1.4(0.5-4.1)	0.2(1) 0.7
Unemployed	7(10.9)	57(89.1)			
Alcohol Intake					
Yes	6(7.5)	74(92.5)		0.3(0.1-0.8)	4.3(1) 0.04
No	10(22.2)	35(77.8)			
Cigarette Smoking					
Yes	8(24.2)	25(75.8)		3.7(1.2-11.2)	4.4(1) 0.04
No	7(8.0)	81(92.0)			
Site of Skin Lesion					
Exposed	11(10.1)	98(89.9)	0.3(0.1-0.8)	3.8(1)	0.02
Unexposed	5(31.3)	11(68.8)			
Duration of Lesion					
≤ 6 Months	5(6.8)	68(93.2)		0.3(0.1-1.0)	3.2(1) 0.04
> 6 Months	9(19.6)	37(80.4)			

Note: percent=%, O.R.=Odds Ratio, C.I.= Confidence Interval, χ^2 =Chi Squared Value, df=Degree of Freedom

The multivariate logistic regression in table 7 illustrates the relationships between selected independent variables and psychological outcomes while controlling for socio-demographic variables. After controlling for socio-demographic variables, alcohol consumption was statistically significantly associated with psychological outcome [O.R. = 0.17, $p<0.05$] while relationships between cigarette smoking, site of skin lesion, duration of lesion and psychological outcomes were statistically insignificant [O.R. = 4.26, $p<0.05$], [O.R. = 0.37, $p>0.05$], [O.R. = 0.32, $p>0.05$].

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Table 7: Multivariate Logistic Regression

Variable	O.R. (df)	C.I.	P-Value
Age Group			
18-34 Yrs	1.22(1)	0.16-9.65	0.85
35-44Yrs	0.56(1)	0.04-6.84	0.65
>44Yrs	Ref	Ref	Ref
Gender			
Male	0.95(1)	0.22-4.10	0.94
Female	Ref	Ref	Ref
Marital Status			
Single/Divorced/Widowed	2.85(1)	0.57-16.54	0.20
Married	Ref	Ref	Ref
Educational Level			
Primary	1.50(1)	0.12-	0.75
Secondary	3.35(1)	0.68-18.65	0.14

DISCUSSION

In the present study, 87.20% patients screened in dermatology clinic had psychiatric illness. This figure constitutes more than half (87.2%) patients of dermatology clinic and appears much higher than the prevalence of psychiatric illness in general population, which has been reported as 11% (Goldberg *et al.*, (1972) and 15.3%, Minhas and Mubbasshar (199). However, this association of dermatological disorders and psychiatric morbidity is not unique to our setup. Studies from other parts of the world also have reported a high prevalence of psychiatric morbidity with skin disorders. According to Hughes *et al.*, (1983) 30% and Wessely *et al.*, (1989), in a study carried out in England, 40.2% patients in dermatology OPD had psychiatric illness. More recently in India Gupta *et al.*, (2005) reported one third of dermatological disorders have significant psychiatric morbidity. It can be seen from this psychiatric assessment that, Depression is (47.71%), Anxiety in (34.86%), OCD in (1.83%), Delusional disorder in (13.77%) and schizophrenia in (1.85%). Thus our findings in this study has confirm the findings of other studies (Gupta and Gupta 2003., Korabel *et al.*, 2008). In addition, Linnert and Jemec (1999), which also show that at any point in time the prevalence of depression in general population as well as in a dermatology clinic is highest, followed by anxiety and other psychiatric disorders. Several studies by (Goldberg, 1972., Koo *et al.*, 2000), Gupta *et al.*, (2003) have shown that patients' scoring more than two on GHQ-12, have increased chances of having a psychiatric illness Table 4 shows that all 109 cases identified to have psychiatric morbidity have mean GHQ scores above 2.

It is important to note that from this research, the mean GHQ score for psychopathology was 6.3 (SD 2.93), indicating the reliability of GHQ as a measuring scale for these disorders. In a similar study of screening for psychiatric disorders in patients with skin diseases by use of 12-item General Health Questionnaire (Minhas and

Mubbasshar, (1996) it was concluded that the performance of GHQ-12 was reasonably good for a self-administered questionnaire requiring only few minutes to be completed and scored.

In a study by Gupta and Gupta (2003) majority of patients with different dermatologic condition were diagnosed with psychological disorder of which patients with pytriasis vesicular, vitiligo and fungal infections had a prevalence of 100% and mean GHQ score between 5.9-7.0, and patients with other skin infections had a psychopathology prevalence between 80.8-88.9% and a mean GHQ score between 5.6-6.2 respectively. Amongst the dermatological patients with psychopathology as shown in Table-5 were; acne (85.7%), eczema (15.4%), pytriasis vesicular (100%), vitiligo (100%). Almost similar results have been reported by Gould and Grag (1983) and (Woodruff *et al.*, (1997). The classical psychodermatological disorders like delusions of parasitosis, factitious disorders, neurotic excoriations, and dermatological non-disease are less frequent, and this finding is consistent with most of the studies (Savage, 1972., Morgan, 1992, Lewis-Jones and Finlay, 1995., Stewart and Yazici *et al.*, 2004).

In our study, a comparison of mean G.H.Q-12 score of those with psychopathology, revealed that high scores were seen in dermatological conditions like acne, pytriasis, psoriasis, fungal infections and vitiligo Table 5. In this study, results have supported the observation that extensive skin disease especially on exposed parts of the body could result in a significant stress so as to cause psychiatric symptoms. Furthermore, our results are similar to the observation made by Hughes *et al.* (1983) and Gupta (2003). In addition, WHO (2005), found high GHQ scores in patients with chronic, extensive and easily visible skin conditions, like acne, eczema and psoriasis.

Conclusion

The psychiatric morbidity is prevalent in a significant proportion of dermatological patients, which is higher than the general population. Early detection of depression and anxiety with the use of a screening instrument like General Health Questionnaire (G.H.Q. – 12) can assist to formulate psychiatric interventions and possible reduction in morbidity and cost of treatment. This study therefore, has confirmed the importance for specialists working in dermatology clinics to be on the lookout for psychiatric disorders among their patients.

Limitations

The current study was done in a dermatology clinic thus, the prevalence, severity and patterns of dermatologic diseases might be different from other dermatology centers. Thereby, the result of this study might not be generalized to all patients with dermatologic diseases. GHQ-28 was used as a measure of impairment of mental health. This is a subjective measure; as different respondents might have different understanding of its scales, thus it might not show the precise prevalence of mental health impairment.

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