

Prevalence of Psychiatric Morbidity and its Associated Factors among Patients Facially Disfigured by Cancrum Oris in Nigeria a Controlled Study

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ABSTRACT

OBJECTIVE: Little information is available about prevalence of psychiatric morbidity among adult patients who suffered from cancrum oris in Nigeria. The objective of this paper was to assess the prevalence of psychiatric morbidity among patients of cancrum oris in Nigeria.

METHOD: A cross sectional controlled study was conducted in 2005 comprising 200 adult patients of cancrum oris. Data was collected through self administered questionnaire from the patients. Psychiatric morbidity was assessed using General Health Questionnaire (GHQ) 28.

RESULTS: Prevalence of psychiatric morbidity was 37% which was about three times that of the control. Psychiatric morbidity was more prevalent among female patients. Other factors associated with high prevalence of psychiatric morbidity include being never married, no formal education and unemployed status.

CONCLUSION: Psychiatric morbidity is prevalent among cancrum oris patients with differences between both sexes. Being never married, no formal education and unemployed status were other associated factors.

KEY WORDS: Cancrum oris; Morbidity; Noma; Prevalence; Sociodemography; Patients.

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INTRODUCTION

Psychiatric morbidity among facially disfigured individual is frequent. Rumsey et al¹ reported that 30 - 50% of patients who were facially disfigured suffer from varying types of psychiatric disorders. Madianos et al² reported that 45.5% of patient who were facially disfigured by burns suffer from psychological impairment. Also facial involvement in vitiligo and psoriasis were associated with high prevalence of psychiatric morbidity³.

Cancrum oris (or noma) is a cause of facial disfigurement in poor country including Nigeria. This is an oral ulcero necrotizing gingivitis⁴ usually of childhood. It is associated with protein malnutrition, measles and immune diseases⁵. Though it is rare in developed countries, it is frequently seen in poor countries especially in the sub Saharan Africa. Prevalence rate of 1.7% has been described among Nigerian children who were admitted for surgery⁶. World Health Organization estimated yearly incidence of between 2 and 5 cases per

10,000 among children in the noma sub - Sahara countries⁷. Also global incidence was 777,000⁷. The acute phase is characterized by gangrenous lesion and the mortality rate is high without intervention⁸. However those who survived are left with disfigured face.

Although cancrum oris frequently cause facial disfigurement⁸, the prevalence of psychiatric morbidity among them was little studied. Hence the aim of the present study was to compare the prevalence of psychiatric morbidity among adult patients who suffered from facial disfigurement with healthy control.

METHODS

Study Setting

This study was conducted in Noma Children Hospital, (NCHS) in Sokoto, Nigeria. The 60-bed hospital was built by the Sokoto state government and commissioned in 1999. It is an international centre for research and treatment of noma and training of health personnel. Although surgical operation continued in the hospital by doctors and nurses employed by the state, a large bulk of the patients are attended to when volunteered surgeons in collaboration with interplast (a non-profit organization providing free reconstruction surgery for children) visit the centre.

Four times a year the foundations in collaboration with Interplast organise medical teams to visit Sokoto. They comprised of plastic and maxillo-facial surgeons, anaesthetists, scrub nurses and anaesthetic nurses. They perform major surgical operations including microvascular free flaps on Noma patients. They usually come in the months of March, May, September and November and stay for about two weeks⁹. The preparation of the patients as well as the aftercare is at the charge of the hospital. These teams come as a humanitarian basis and treatment is entirely free of charge. As at July 2003, a total of four hundred and forty three patients had been operated. The patients were mainly from Sokoto, Kebbi and Zamfara state of Nigeria and were mainly Hausa speaking by tribes.

The Subject

Patients were recruited and interviewed in March through September 2005. Majority of the patients were recruited during visits by the foreign surgeons. A minority were recruited in the outpatient even while the foreign surgeons were not around.

Subjects had to have facial disfigurement secondary to cancrum oris before they were included. They also have to be 18 years or above and must consent to the study. In addition, they must understand English or Hausa language and their spoken language must be understandable by the interviewer. Patients were excluded if their facial disfigurement was from other conditions apart from cancrum oris. Also patients with learning difficulties, and organic brain syndrome were excluded.

A power calculation based on the number of patients who had been operated upon in the hospital as at July 2003 indicated that for a significance level of $P < 0.05$, a sample size of two hundred and ten¹⁰ was required, which was higher than the 200 recruited for this study. However, all the patients who registered during the study period were included in the study.

Instruments

Sociodemographic questionnaire which was designed by the researchers was used to assess variables such as age, sex, occupation, marital status, and education attainment. Psychiatric illness was detected with the help of General Health Questionnaire (GHQ)-28. The GHQ was derived from extensive study from older instruments namely, Cornell Medical Index, Taylors' Manifest Anxiety Scale, Eysencks Personality Inventory and the Minnesota Multiphasic Personality Inventory (Goldberg, 1978). The original version was 60 item instrument. However, the shorter versions including GHQ-30 and GHQ - 12 have been produced. GHQ - 28 was produced by factor analysis of GHQ 60¹¹.

Scoring technique includes Discriminant Function Analysis, GHQ scoring, Modified Likert and Simple Likert. Although Likert scoring encompasses both area and intensity while GHQ scoring method only covers area, there was relatively little advantage in considering intensity. The GHQ scoring method being bimodal response also eliminated any error due to 'end users' and 'middle users' since they will score the same irrespective of whether they tend to prefer columns 1 and 4 or columns 2 and 3 to indicate the presence or absence of the item in question.

This instrument is self administered. The GHQ 28 has a total score of 28 using GHQ scoring technique. It has been validated and extensively used in research studies in Nigeria¹¹. This instrument is a very important tool as it detects psychological symptoms which do not reach diagnostic threshold¹¹. As majority of the respondents had no formal education, the instrument was administered by the investigators. GHQ scoring technique was used and the cut off point was set at 5¹¹. Hausa investigator translated was used among majority of the patients because of poor education attainment.

Study Procedure

The authority of the hospital was informed about the study. Their permission in using their patients and facilities was also obtained. Information concerning the aim and objectives and the relevance of the study were also supplied. With regard to the patients, informed consent was obtained from each of the respondents. The aim and objective of the study were also explained to them and they were assured of confidentiality and anonymity of the study. The respondents were then asked to mark or assisted to mark the appropriate place on the questionnaire which requested for their consent. A 'Yes' response to consent - giving question led to full administration of the questionnaire. However a 'No' response automatically terminate the interview with the respondent.

At the commencement of the study, the management of the hospital mobilized its staff to explain the need to do the study to the patients and the overall benefit of the outcome of the study regarding its benefit in future in providing holistic health care service to the patients including mental health care. The investigator was assisted by 2 members of staff of the hospital who volunteered to administer the questionnaire at no cost. They were to only read out the questions to the patients without additional explanations by the interviewer. This was done to ensure a degree of uniformity. Consecutive adult patients who were registered for reconstructive surgery were recruited. Diagnoses of facial disfigurement were obtained from patient's records and patients were enrolled irrespective of the extent of the disfigurement.

Findings from sociodemographic questionnaire and GHQ 28 (majorly, the Hausa version) were the source of clinical data on which the result and discussion were based.

Control

One hundred healthy individual with no apparent disfigurement were recruited to serve as control group. These were junior staff in ward servant cadre in a teaching hospital in Sokoto. In this hospital, there were 200 junior staffs distributed across the three daily shifts including Morning, evening and night shifts. One hundred of them were recruited through convenience sampling. The recruitment took place mainly in the morning shift among volunteers until a total of 100 had been interviewed. The criteria for inclusion and exclusion were the same for the study group except for the absence of facial disfigurement.

Statistical Analysis

Data was analyzed using graphpad instat (Motulsky)¹³. Chi square test was used to test for significance. Where the value in a cell was less than 5, Fishers exact test was used. For analytic statistical inference, association

identified was tested at 5% confidence level to determine significance where necessary.

RESULT

A total of 200 cancrum oris patients and 100 control subjects were included in this study. Two patients declined interview. Two other consecutive patients were therefore included. Table 1 showed the sociodemographic characteristics of the respondents. The mean age was 29.87 years (sd= 6.2 years). Sixty one (30.5%) of the patients were female and eighty six per cent were Muslims. Also, one hundred and thirty (65%) patients had no formal education while among the control group seventy two percent had no formal education. On testing with chi square for significance, the subjects group matched the control in terms of gender ($\chi^2 = 1.37$; $P = 0.241$), religion ($\chi^2 = 1.21$; $P = 0.271$) and educational attainment ($\chi^2 = 1.184$; $P = 0.277$). However they do not match with regards to age, employment status and marital status ($\chi^2 = 1.37$; $P = 0.241$, $\chi^2 = 1.21$; $P = 0.271$ and $\chi^2 =$

1.184; $P = 0.277$ respectively). Of the patients reviewed, seventy five of them responded positively for psychiatric caseness which corresponds to thirty seven percent which exceeds finding among the healthy group ($\chi^2 = 21.617$; $P < 0.0001$; $OR = 4.855$; $CI = 2.438 - 9.668$) (see table 2).

Sixty three per cent of the patients of the age group 20-24 years, had psychopathology (Table 2). Also more female patients were found to have psychiatric morbidity than their male counterpart the difference being statistically significant ($\chi^2 = 9.32$; $P = 0.002$) Table 2. In addition the prevalence of psychopathology among the never married patients was more than that in other marital status groups. Patients with no formal education had psychopathology (64%) more than those with formal education (49%) while the prevalence of psychiatric morbidity among unemployed patients was 36%. (Table 3).

Table 1: Sociodemographic Characteristics of Respondents and Control

	Subjects n=200(%)	Healthy Control n=100 (%)	χ^2	DOF	P	RR	CI P1	CI P2
Characteristics	Frequency (%)	Frequency (%)						
GENDER								
Male	139 (69.5)	62 (62)						
Female	61 (30.5)	38 (38)	1.374	1	0.2412	1.121	0.9374	
AGE								
20-24	63 (31.5)	12 (12)						
25-29	26 (13)	3 (3)						
30-34	44 (22)	13 (13)						
35-39	67 (33.5)	72 (72)	41.206	3	<0.0001	-	-	-
RELIGION								
Islam	173 (86.5)	95 (95)						
Christianity	18 (9)	5 (5)	1.209	1	0.2714	0.8248	6534	1.341
MARITAL STATUS								
Never married	63 (31.5)	0 (0)						
Married	117 (58.5)	77 (77)						
Separate	0 (-)	0 (-)						
Divorced	11 (5.5)	3 (3)						
Widow	9 (4.5)	20 (20)	52.49	3	0.0001	-	-	-
EDUCATION								
No Formal Education	130 (65)	72 (72)						
Formally Educated	70 (35)	28 (28)	1.184	1	0.2766	0.9010	0.7663	1.059
EMPLOYMENT STATUS								
Unemployed	67 (33.5)	0 (0)						
Employed	133 (66.5)	100 (100)	41.223	1	0.0001	1.752	1.567	1.958

Table 2: Prevalence of psychiatric morbidity among the subjects and the control

Subjects	Cancrum oris subject, (%)	Control subject (%)	χ^2 with Yates correction	P value
With psychiatric morbidity	75 (37.5)	11 (11.0)	21.6	<0.0001
Without psychiatric morbidity	125 (62.5)	89 (89.0)		
Total	200 (100.0)	100 (100.0)		

Table 3. The sociodemographic pattern and prevalence of psychiatric morbidity among cancrum oris patients

	WITHOUT PSYCHIATRIC MORBIDITY	WITH PSYCHIATRIC MORBIDITY	% WITH PSYCHIATRIC MORBIDITY	χ^2	df	P	CI	OR
20-24	63	40	63					
25-29	26	0	-					
30-34	44	20	45					
35-39	67	15	22	20.536	3	0.0001	-	-
Female	28	33	54					
Male	97	42	30	9.323	1	0.0023	0.3965-0.7867	0.3674
Never married	63	34	54					
Married	117	34	29	4.054	1	0.441	1.055-3.270	1.857
No formal education	130	51	39					
Formally educated	70	23	2	0.7691	1	0.3805	0.3959-1.335	0.7279
Unemployed	31	36	54					
employed	98	35	26.3	13.452	1	0.0002	0.1660-0.5696	0.3075

DISCUSSION

This was a study which could give information on the emotional needs of patients who had suffered from cancrum oris. This hospital based controlled, cross sectional study was aimed at comparing the prevalence of psychiatric morbidity among patients who were facially disfigured from cancrum oris with healthy individual who were not disfigured. The major limitation of this study was that it was hospital - based. Also the administration of GHQ-28 to the respondents by the researcher could compromise response of individual patients. In addition, the interviewing of consecutive patients would not replace randomization of both the

sample and the control. Thus the extent to which these findings may be applicable to the general population was uncertain.

To avoid sampling bias, two hundred consecutive adult patients who registered in the hospital for surgery and who fulfilled the inclusion criteria were included. Both the patients and the control group were recruited in a hospital environment. The patient group matched the control in sociodemographic characteristics such as gender, religion and educational attainment but did not match with regards to age, marital status and employment status. This study demonstrated that there were more

male patients. In addition they were likely to be of younger age group, Muslim, married and unemployed with no formal education.

The main finding of this study was that thirty seven per cent of the patients have psychiatric morbidity which was higher than that of the control which was eleven percent. In addition sociodemographic variables associated with high prevalence of psychiatric morbidity include female gender, younger age group, being unemployed and poor education attainment. Although there were previous studies on prevalence of psychiatric morbidity among facially disfigured patients, to our knowledge there were no studies on prevalence of psychiatric morbidity among adult patients who were facially disfigured due to cancrum oris. Hence it will be difficult to effectively compare our results.

However in studies among individuals with face disfigurement other than cancrum oris, Mardianos et al² reported that face disfigurement was the only burn characteristic that was significantly associated with the presence of psychiatric morbidity. In a follow - up study conducted among the patients, they observed prevalence rate of 45.5% among them which was higher than the finding in this study. However, the one year follow-up revealed a lower prevalence rate, 40% which was comparable to the 37.5% in this study. The similarity with the one year follow up was even more striking when it was noted that the cancrum oris patients had been suffering from the disfigurement since childhood. Their study however could not effectively be compared with our study because their patients group was dissimilar. The finding of Picardi et al¹⁴ among patients with facial disfigurement was lower. They studied prevalence rate of psychiatric morbidity among dermatological patients. In their reports, they found prevalence rate of psychiatric morbidity of 7.6% and lack of improvement being associated with higher incidence (13.6%). Saleh et al¹⁵ studied prevalence of psychiatric morbidity among patients with psoriasis and vitiligo. They reported prevalence rate of 20 and 22% respectively when the face was involved.

The present study suggested that prevalence rate of psychiatric morbidity among patients who were facially disfigured from cancrum oris was high when compared with control. This finding would suggest the need for routine psychiatric evaluation in such patients. Future study should focus attention on the different psychiatric disorders.

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