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CO-MORBID PSYCHIATRIC DISORDERS IN NIGERIAN PATIENTS SUFFERING TEMPOROMANDIBULAR JOINT PAIN AND DYSFUNCTION

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ABSTRACT

Objectives: To determine the prevalence of psychiatric morbidity among Nigerian patients with temporomandibular joint pain and dysfunction (facial arthromyalgia), to delineate the specific types of co-morbid psychiatric disorders and identify the socio-demographic characteristics of the patients with psychiatric disorders.

Design: A two-stage design was adopted to study the prevalence and types of co-morbid psychiatric disorders of identified 24 patients with temporomandibular joint pain and dysfunction over a period of 5 years.

Setting: Pain and Psychiatric clinics of the University of Benin Teaching Hospital, Benin City, Nigeria.

Methods: The patients were controlled for age gender, and marital status. The State-Trait Anxiety Inventory, 28-item General Health Questionnaires and the Hospital Anxiety and Depression Scales were used for first stage screening while the second stage interview utilised the Psychiatric Assessment Schedule.

Results: The prevalence of psychiatric morbidity was 37.5% and 12.5% in the study and control groups respectively. Generalised anxiety disorder and dysthmia were the main forms of psychiatric disorders identified. Temporomandibular joint pain and dysfunction patients with co-morbid psychiatric disorders were significantly older ($P<0.0001$), had the illness for shorter periods before presentation ($p<0.001$) and were non-professionals.

Conclusion: The findings highlight the need for multi-disciplinary approach to the assessment and management of patients with temporomandibular joint pain and dysfunction.

KEYWORDS: Co-morbid, psychiatric, disorders, temporomandibular joint, pain, dysfunction.

INTRODUCTION

Temporomandibular joint pain and dysfunction (TMJPD) (Facial arthromyalgia), constitutes the bulk of non-organic facial pain disorders which often run a chronic course.[1, 2] Although it is common world wide, it appears that Nigerian patients with the condition do not frequently report for treatment.[3] Because of the complexity of the anatomy of the facial region and the multifactorial aetiology of orofacial pain disorders, the management of the condition has often been fraught with controversy.

The definition of pain by the International Association for the Study of Pain (IASP) as "an unpleasant sensory and emotional experience associated with actual and potential tissue damage or described in terms of such damage[4] implies an acknowledgement of psychic distress in pain experience. The persistence, intensity and or duration of such psychic distress invariably would precipitate psychiatric disorder, particularly in vulnerable individuals. Perhaps for this reason, dental practitioners are increasingly taking interest in studying the psychological aspects of such pain patients [5-7] Psychiatric co-morbidity is a common finding in chronic pain conditions and depression, anxiety and a history of physical or sexual abuse has been documented in several studies.[8-10] That many patients with temporomandibular joint pain and dysfunction are characterised by a high level of stress and anxiety, a marked tendency toward drug tolerance and dependence, dependence on family, friends and doctors, loss of self esteem, apathy and withdrawal behaviour, increasing anger and hostility have been previously emphasized.[11] The implication of these reports is that the assessment, diagnosis and management of such pain patients requires a multi-disciplinary approach involving the psychiatric team. Besides, available research reports are largely drawn from Caucasian populations and the non- existence

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of such studies among Nigerian patients has been highlighted.[7]

The need to fill in this gap and document research data for our environment necessitated the present study. We set out to test the hypothesis that there is no difference in the prevalence rates of psychiatric morbidity between patients suffering temporomandibular joint pain and dysfunction and a control group with the following objectives:

1. To determine the prevalence of psychiatric morbidity among the patients suffering temporomandibular joint pain and dysfunction that report for treatment in our clinic.
2. Delineate the specific types of co-morbid psychiatric disorders identified and
3. Identify the socio demographic characteristics of those cases with co-morbid psychiatric disorders.

MATERIALS AND METHODS

Subjects

The subjects for this study were recruited from among the patients referred to the pain clinic of the Department of Oral and Maxillofacial Surgery at the University of Benin Teaching Hospital, Benin City, Nigeria between June 1996 and May 2001. Only those patients with a diagnosis of temporomandibular joint pain and dysfunction based on the research diagnostic criteria for Temporomandibular joint pain dysfunction[12] were selected. Other selection criteria were: literacy, absence of previous psychiatric illness, age 18 years and above and a verbal consent to participate in the study.

Psychometric Test Instruments:

State-Trait-Anxiety Inventory (STAI) was developed by Spielberger in 1970 as a measure of generalized anxiety. It consists of the STAI-X1 and STAI-X2 forms with 20 items each and measured on a 4-point scale. They respectively measure the individual's State- and Trait- anxiety levels. Its validity and norms for use in Nigerian patients are well established. [13,14]

Hospital Anxiety and Depression Scale (HADS) was developed by Zigmond and Snaith in 1983 specifically for use in non- psychiatric patients as a screening instrument to assess the impact of physical illness on psychological well being. It consists of 14 items, seven each for the concepts of anxiety and depression. The rating is on a 4 -point scale and its use in Nigerians has been validated. [15] It is widely accepted only as a useful screening instrument.

The 28- item General Health Questionnaire (GHQ –28) is a factor-derived version of the original 60-item scale developed by David Goldberg in 1972 as a self-administered screening instrument for detecting psychiatric disorders among the respondents. The advantages of this version include a global score, which indicates a probable presence or absence of psychiatric disorder, presence of a disorder indicated by a score of 4 or more and the four factor derived subscales for assessing anxiety, depression, physical health status, insomnia and psychosocial stress. All the versions of the GHQ use the 4-point Likert–type scoring system. It is used in this study because of the established Nigerian norms[16]

The psychiatric Assessment Schedule (P.A.S) is a structured clinical interview schedule adapted from the Present State Examination by Gask [17] and permits diagnosis based on the criteria of the revised third edition of the Diagnostic and Statistical Manual (DSM-111-R) of the American Psychiatric Association.

PROCEDURE

The consultant oral and maxillofacial surgeon evaluated each patient that was referred to the pain clinic. Those that met the inclusion criteria were recruited for the study. Detailed explanation of the process of evaluation was given before the test instruments, which had been arranged in the following order: biodata collection sheet, STAI-X1 and -X2, GHQ-28 and HADS were administered.

The patients were rarely seen in groups of 2 or 3 because those that met the study inclusion criteria were few and often far between clinic sessions. Subsequently, appointment was made for the patients to see the psychiatrist (A.N.O) within a week of the screening exercise. While remaining blind to the patients' test scores, each of the patients was subjected to a structured clinical interview using the P.A.S. The control subjects matched for age, gender and marital status were randomly selected from amongst consenting members of staff, visiting as well as accompanying patients' relations to the University of Benin Teaching Hospital. They were also screened using the same test instruments as the study group before being subjected to a structured clinical interview using the P.A.S.

The data were analysed using descriptive statistic, the Student't' test to compare mean scores and the Chi-squared (χ^2) test for contingency tables with significant differences set at a probability level of $p < 0.05$.

RESULTS

A total of 24 (72.7%) of the 33 cases of temporomandibular joint pain and dysfunction seen during the study period met the full inclusion criteria and were thus recruited and studied. They comprised an equal number of male and female subjects (12 each respectively) with an age range of 19-70 years (mean

43.9±15.9years). Sixteen (66.7%) patients were married, 7(29.2%) were single and 1(4.2%) divorced. The control group also comprised equal number of males and female subjects (12 each respectively) with an age range of 18-70 years (mean 44.1). Sixteen (66.7%) patients were also married, 7(29.2%) single and 1(4.2%) divorced. The study group comprised 6(25.5%) professionals, 3(12.5%) skilled workers, 2(8.3%) unskilled workers, 3(12.5%) unemployed and others, 10(41.7%) while the control group comprised 11(45.5%) professionals, 5(20.8%) skilled workers and others, 8(33.3%).

Table 1: **The prevalence of psychiatric morbidity in the study and control groups**

VARIABLES	*STUDY GROUP*	*CONTROL GROUP*	*STUDENT T-TEST*	*CHI-SQUARED*	**P-VALUES.**
PSYCHOMETRIC TEST SCORES					
GHQ-28:					
Score ≥4	13 (54.2%)	5 (20.8%)			
Score <4	11 (45.8%)	19(79.2%)	-	5.689	=0.025
STAI-XI:					
(Mean ± SD)	40.3 ± 9.5	39.4 ± 11.4	0.2912	-	>0.05
STAI-X2:					
(Mean ± SD	37.0 ± 9.9	39.7 ± 9.2	0.9608	-	>0.05
HADS:					
Anxiety ≥11	8(33.3%)	6(25%)	-	0.1008	>0.05
<11	16 (66.7%)	18(75%)			
Depression					
≥11	0	1			
<11	24	23			
P.A.S:					
+ve Co-morbidity	9(37.5%)	3(12.5%)	-	-	-
No Co-morbidity	15	21		12.543	<0.0005
P.A.S. diagnostic groups:					
Generalised Anxiety	6(25%)	2(8.3%)			
Depression	-	1(4.2%)			
Dysthymia	3(12.5%)	-			

Shows that the prevalence rates of psychiatric morbidity in the study and control groups were 37.5% and 12.5% respectively. The difference was statistically significant (χ^2= 12.543, p <0.0005). Six (25%) patients of the study group had co-morbid generalized anxiety disorder while the remaining 12.5% had dysthymia. There was no case of major depressive disorder identified. On the contrary, 2(8.3%) of the three identified cases of psychiatric disorders in the control group met diagnostic criteria for generalised anxiety disorder while the remaining one or 4.2% had major depressive disorder with no case of dysthymia.

Table 2: **A comparison of socio-demographic characteristics, pattern of temporomandibular joint pain and dysfunction distribution and the mean duration of the illness in patients with and without co-morbid psychiatric disorders.**

Variables	Temporomandibular Joint Pain And Dysfunction And Psychiatric Co-Morbidity	Temporomandibular Joint Pain And Dysfunction Without Psychiatric Co-Morbidity	Student T-Test	Chi-Squared	P-Values
No of cases	9(37.5%)	15(62.5%)			
Age (years)	49.9	40.0			
Mean ± SD	± 18.3	± 13.3	3.998		<0.0001
Sex:					
Male	6	6			>0.05
Female	3	9		2.844	
Marital Status:					
Single	3	4			
Married	5	11			
Divorced	1	-		1.027	>0.05
Occupation:	-				
Professional	2(22.2%)	6(40%)			
Skilled	1(11.1%)	1(6.6%)			
Unskilled	2(22.2%)	1(6.6%)			
Unemployed		1(1.6%)			
Others (e.g student, housewife)	4(44.4%)	6(40%)			
Facial arthromyalgia-Laterality					
Unilateral	5	10			
Bilateral	4	5		0.0118	>0.05
Illness duration	10.2 ± 6.9	21.3 ± 31.04	4.645		<0.001

Shows the socio-demographic characteristics of the patients with co-morbid psychiatric disorder, pattern of temporomandibular joint pain and dysfunction distribution and the mean duration of illness in months.

DISCUSSION

This study identified a significantly higher prevalence rate of psychiatric disorders among the temporomandibular joint pain and dysfunction patients compared with a control group. A previous report [3] had identified psychological problems like sleep disturbance, stressful life and tension in Nigerian patients suffering from TMJPD. Available literature on psychiatric disorders in TMJPD patients have concentrated on the prevalence of anxiety and depression rather than screening for general psychiatric morbidity. This is presumably because anxiety and depression develop as sequelae to pain.[18] Our finding of 25% and 12.5% of generalized anxiety disorder and dysthymia respectively as the main co-morbid psychiatric diagnoses in these patients is at variance with the literature reports of high levels of depression amongst them. Perhaps, the fact that the TMJPD patients with co-morbid psychiatric disorder in our study were significantly older than those without co-morbidity, and presented for treatment much earlier, may account for our findings. Being older would likely mean more life experiences and probably better coping skills. Presenting for treatment earlier could also mean that they did not wait to lapse into the state of "learned helplessness" which anxiety is hypothesised to translate into when coping strategies fail.[19] Fine[20] reported a prevalence rate of 76% for depression among his series. This high rate is probably due to the loose diagnostic criteria adopted in his study, which gave much prominence to fatigue and irritability, agitation, and mood swings as diagnostic indicators for depression. Others postulate a link between the patient's passive coping leaning, beliefs that pain is itself worsened by negative mood, speech problems and anxiety on the one hand and disturbance in taste, digestion, passive coping and depression on the other.[18]

This study also identified the advantage of clinical interviews over questionnaires such as the GHQ-28 and HADS. While the GHQ-28 screened

54.2% and 20.8% of the study and control groups respectively as probable cases of psychiatric disorders, the clinical interview identified 37.5% and 12.5% of the study and control groups respectively as the true cases. Therefore, regardless of the refinements of these questionnaires the likelihood of mis-classifications remains. Even at a maximum cut-off point of 11 or more for anxiety disorder, HADS identified 33.3% of cases as against 25% diagnosed by the interview method. It is noteworthy that HADS failed to recognise chronic minor depression (dysthymia) as the cases so identified by the clinical interview scored below five on the HADS instrument. We therefore suggest that they should be used as screening instruments as the authors really labelled them and not diagnostic tools.

Using stringent selection criteria, our study subjects may not be a representative sample of TMJPD patients in a developing society like Nigeria where literacy rate is still quite low. Therefore, it is not unlikely that the true prevalence rate of psychiatric co-morbidity would be higher than our finding of 37.5% in a presumably better adjusted cohort would suggest. This is one of the shortcomings we identified in this study. In conclusion, there is a higher prevalence of co-morbid psychiatric disorders in the patients studied than controls. Our findings strengthen the view that a multi-disciplinary approach in the assessment and management of patients with TMJPD should be adopted, as early detection would reduce chances of chronicity.

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