

Evaluation of Psychological Factors in Temporomandibular Joint Pain Dysfunction Syndrome: A report of 3 cases and review of the literature

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ABSTRACT

Objective: This study reports the findings from the psychological assessment of temporomandibular pain dysfunction syndrome (TMJPDS) patients and the treatment outcome following a multidisciplinary team management of this condition.

Methods: Three patients suffering from TMJPDS were administered the following psychological assessment questionnaires: Eysenck Personality Questionnaire (EPQ), Symptom Distress Checklist – 90 (SCL - 90), Spielberger's State-Trait Anxiety Inventory (STAI), Index of self Esteem (ISE) and Chronic Pain Grade (CPG). The completed questionnaires by the patients were analyzed by a Clinical Psychologist.

Case Reports: Case 1 was a 32 years old male. Psychological assessment showed that he manifested high peak position to being anxious and high feeling of tension associated with dental treatment. He also showed an increased pain perception and disability caused by TMJPDS. Case 2 was a 61 years old female. Psychological test showed that despite her high level of trait anxiety, the feeling of tension associated with dental treatment was low. She perceived her abnormal pain and disability caused by the disease to be low. Case 3 was a 39 years old female. Psychological assessment revealed that her predisposition to being anxious was high; however, her anxiety related to dental care was low. She also reported a reduced pain perception and disability caused by the disease condition.

Conclusion: This study shows that TMJPDS is often associated with psychological problems, such as anxiety, with or without tension related to dental care, abnormal pain perception and psychological disability. A multidisciplinary team approach including dentists and mental health experts in the management of patients suffering from TMJPDS is recommended.

Keywords: Multidisciplinary approach, pain dysfunction syndrome, psychological, Temporomandibular assessment,

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INTRODUCTION

Temporomandibular joint pain dysfunction syndrome(TMJPDS) is a term that covers pain and dysfunction of the muscles of mastication that move the jaw in the temporomandibular joints between the mandibular condylar head and the glenoid fossa of the squamous temporal skull bone.¹ Pain is the main presenting symptom of TMJPDS, followed by restricted mandibular movement and noises (crepitus or clicking) from the temporomandibular

joints during jaw movement. TMJPDS is not life-threatening, but it can be detrimental to patient's quality of life because the symptoms can become chronic and difficult to manage.²

Several factors including psychological factor have been implicated as the cause of TMJPDS,^{3, 4} although their pathophysiology is poorly understood.⁵ The Research Diagnostic Criteria (RDC) classified temporomandibular disorders in 2 axes; axis I is the physical aspects, and axis II involves assessment of

psychological status, mandibular function and temporomandibular joint disorder-related psychosocial disability.⁶ The recommended treatments could be conservative (nonsurgical) and surgical approaches, depending on aetiological factors.⁷ The non-surgical treatments include: provision of occlusal splints,^{8,9} acupuncture,¹ psychosocial interventions using cognitive behavioral therapy (CBT),¹¹ and medications like analgesics, muscle relaxants and antidepressants,^{12,13} while irreversible treatment should be avoided.¹⁴

Psychological factors have been identified as the most important aetiological component in producing and perpetuating temporomandibular joint pain dysfunction syndrome (TMJPDS).¹⁵ Meldolesiet al.¹⁶ reported that certain personality characteristics such as neuroticism, anxiety and depression are associated with TMJPDS. However, a higher level of psychopathology was reported in psychiatric patients compared to patients with TMJPDS. Most TMJPDS patients had little awareness of their inner states and emotions.

Omoriegie et al. (2014)¹⁷ recently reported 3 (12.5%) patients with clinical depression in their study of 24 cases of TMJPDS. The patients were assessed with the World health organization [WHO] well-being index and depression scale questionnaires (1998)¹⁸. Emotional factors such as anxiety, fear, frustration, and anger have also been implicated in the aetiology of TMJPDS. They elicit muscular tension and oral parafunctional habits. A vicious anxiety-pain-tension cycle helps to perpetuate TMJPDS.^{15,19}

Previous Nigerian studies have reported on the prevalence, patterns of presentation and co-morbid psychiatric disorders associated with TMJPDS.^{13,17,20} Saheeb et al.¹³ reported a higher co-morbid psychiatric disorder in TMJPDS patients compared with the control group. Therefore, there is need to identify the psychological factors associated with TMJPDS as part of the protocol in the management of this condition. This study reports the findings from the psychological assessment of TMJPDS patients and the treatment outcome following a multidisciplinary team management of this condition.

MATERIALS AND METHODS

Three patients suffering from TMJPDS were administered the following psychological assessment questionnaires: Eysenck Personality Questionnaire (EPQ), Symptom Distress Checklist – 90 (SCL - 90), Spielberger's State-Trait Anxiety Inventory (STAI), Index of self Esteem (ISE) and

Chronic Pain Grade (CPG). The completed questionnaires by the patients were analyzed by a Clinical Psychologist. The patients were treated in a joint clinical session in Oral Medicine Clinic, University of Benin Teaching Hospital, Benin City, Nigeria.

At least 2 sessions of cognitive oriented psychotherapy (CBT) and medical treatment were administered to each patient in the joint clinical session of Oral Pathologist, Oral Medicine Physician and Clinical Psychologist over a period of 4 weeks. The patients were reviewed in each follow up clinical visit over a period of 6 months. Ethical approval was obtained from the Hospital Ethical Committee for this study.

CASE REPORTS

Case 1 was a 32 years old male. He is single and a business man who was diagnosed of right sided TMJPDS aggravated by mouth opening. Psychological assessment showed that he manifested high tendency to being anxious. He also reported feeling of high tension associated with dental treatment. He also showed an increased pain perception and high psychological disability caused by TMJPDS (Table 1). The patient's painful condition was relieved after 4 weeks treatment (counseling /cognitive oriented psychotherapy (CBT) and medical therapy with tablet Ibuprofen 100mg 12 hourly for a week and diazepam 10mg nocte for 2 weeks and stepped down to 5mg nocte for 2 weeks). He was followed up for 6 months.

Case 2 was a 61 years old female. She is a married civil servant who was diagnosed of right sided TMJPDS, without specific trigger factor. Psychological test showed a high level of trait anxiety. But the feeling of tension associated with dental treatment was low. She reported increased pain and disability as a result of the disease condition (Table 1). The patient's condition was resolved within 3 weeks after treatment (counseling / CBT and medical therapy with tablet paracetamol 1000mg 8hourly for a week and diazepam 10mg nocte for 2 weeks and stepped down to 5mg nocte for 4 weeks). She was followed up for 6 months.

Case 3 is a 39 years old female. She is a married, self-employed person who was diagnosed of bilateral TMJPDS aggravated by chewing. Psychological assessment revealed that her predisposition to being anxious was high. However, her state anxiety related to dental care was low. She also reported reduced

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pain perception and disability caused by the disease condition (Table 1). The patient's condition was resolved within 4 weeks of treatment (counseling/CBT and medical therapy with capsule

tramal 100mg 12 hourly for 2-weeks, diazepam 10mg nocte for 2 weeks and stepped down to 5mg nocte for 4 weeks and neurogelsic cream). She was followed up for 3 months.

Table 1: The instruments used for mental health assessment of the patients diagnosed of temporomandibular pain dysfunction syndrome (TMJPDS).

Case	Eysenck Personality Questionnaire (EPQ)	Spielberger's Trait Anxiety Inventory (STAI)	Self-Rating Depression Scale (SDS)	Index of self Esteem (ISE)	Chronic pain grade (CPG)
1	Feeling of high tension associated with dental treatment	High tendency to being anxious	No clinical depression	Normal	Increased pain perception and high disability
2	The feeling of tension associated with dental treatment was low	High level of trait anxiety	No clinical depression	Normal	High pain perception and low disability
3	Absence of tension associated with dental treatment	Predisposition to being anxious was high but low state anxiety	No clinical depression	Normal	Reduced pain perception and low disability

DISCUSSION

Identification of the underlying psychological factors in the TMJPDS patients is essential in their management. Treatment factors for TMJPDS is aimed at modulating pain sensitivity due to mood disorders, anxiety and fatigue.²¹Also, medical treatment with analgesic and diazepam or amitriptyline is reported as the most common treatment option for TMJPDS in our environment.²⁷ The TMJPDS patients reported in this study benefited from a multidisciplinary team management involving dentists and a clinical psychologist.

CBT has been shown to be effective in the treatment of TMJPDS.²² Accordingly, CBT was administered to the patients in this study in collaboration with a psychologist. The combination of CBT and medical treatment relieved the patients' painful condition within 3 to 4 weeks of therapy. The patients' condition was stable during the 3 to 6 months follow up period in this study. TMJPDS is usually a self-limiting condition with good prognosis.^{2,23} However,

poorly treated patients may suffer poor quality of life due to persistent pain, psychological discomfort, physical disability and functional limitations.²⁴

Psychological assessment of the patients in this study showed that TMJPDS is often associated with psychological problems, such as anxiety, with or without tension related to dental care, abnormal pain perception and psychological disability. Similarly, generalized anxiety disorder has been reported as a co-morbid disorder in TMJPDS patients.²³This finding agree with previous report that implicated anxiety as a psychological factor that modulates pain sensitivity in patients with TMJPDS.²⁹Therefore, the treatment of patients in this study was aimed at relieving anxiety and reducing pain sensitivity, with a combination of CBT and medication, using analgesic (pain-killer) and diazepam (a muscle relaxant and anxiolytic). Furthermore, previous study reported that TMJPDS patients with associated clinical depression responded well to medical treatment using analgesic and amitriptyline.¹⁷These findings support a multidisciplinary approach involving

dentists and mental health experts in the management of TMJPDS.

CONCLUSION

In conclusion, this study shows that TMJPDS is often associated with psychological problems, such as anxiety, with or without tension related to dental care, abnormal pain perception and psychological disability. The patients responded well to a combination therapy with CBT and medication (analgesics and diazepam) in this study. A multidisciplinary team approach including dentists and mental health experts in the management of patients suffering from TMJPDS is recommended.

Source of Support

Nil.

Conflict of Interest

None declared.

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