ORIGINAL ARTICLE

Assessment of the Frequency of Psychiatric Comorbidity Among Dental OPD Patients and the Function of Consultation-Liaison Psychiatry in Dental Treatment in a Kanpur Rural Tertiary Care Facility, India

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Background	Comorbidities of psychiatric disorders and somatic illnesses have been the focus of increasing concern in recent decades.
Aim	The aim was to determine the application of consultation-liaison (C-L) psychiatry for systematic patient management in a rural tertiary care facility.
Settings and design	This cross-sectional descriptive research was carried out in a dental college multispecialty tertiary care facility located in a rural area.
Subjects and Methods	The cross-sectional descriptive research study included 181 patients aged 18–60 years who attended the dental OPD. They were randomly selected, and each consecutive patient was referred to the Psychiatry Department for evaluation. Psychiatric comorbidity was evaluated by a psychiatrist with the aid of the General Health Questionnaire (GHQ)-28 and the Mental State Examination.
Statistical analysis used	The data were statistically analyzed using crosstab and χ^2 test.
Results	Most patients were female (*n*=107). The mean age of patients was 42 years, and the GHQ-28 score was high for anxiety/insomnia, with a mean of 3.01. The commonest dental illness was periodontitis (14.9%) followed by dental caries (13.2%). Majority (79%) of the patients had psychiatric comorbidity according to the GHQ-28 total score. A total of 115 patients were diagnosed to have mental disorders on Mental State Examination. Somatoform disorder (*n*=34) and very strong associations were found among the types of dental illnesses and the types of mental disorders (χ^2=37.89 and 98.64, respectively; *p*<0.05).
Conclusions	Psychiatric C-L in dentistry is still at its grassroot level in India. A psychiatric C-L service within the dental facility catering to patients with psychiatric disorders in dental practice could be developed and effectively managed.
Keywords	Consultation-liaison psychiatry, Comorbidity, Dental practice mental disorders.

INTRODUCTION

In recent decades, the comorbidity of mental disorders and somatic diseases has been the topic of growing attention (Jakovljevic and Borovecki, 2018; Simunovic Filipcic and Filipcic, 2018). In 2017, in primary health care divisions in Asian economies such as India, psychiatric comorbidity was reported to be very high (42.8–48.9%) (Dandona, 2020). In patients with psychological disorders, however, considerably less effort has been given to oral

health, although oral health is a significant part of a healthy lifestyle and is closely correlated with mental health (Šarac *et al.*, 2020).

Dental surgeons spend a significant amount of time treating patients who may have either psychological conditions such as depression and anxiety or underlying emotional disturbances with physical signs (Miyachi *et al.*, 2007). In patients encountered in dental practice, common symptoms of latent emotional distress include oral dysesthesia, atypical facial pain, and other atypical syndromes (Feinmann and Harris, 1984; Hiller *et al.*, 1997). Somatoform disorders, apart from posing management problems, also cause significant functional impairment and overall disability for the patients (Arigbede *et al.*, 2012; Geaorge, 2020). Both the patient and the health care provider would benefit from better and adequate identification of such emotional distress (Ray *et al.*, 2015).

The psychosocial factors correlated with the condition of the patients and the expenses of the necessary health care facilities are either not recognized by the dental surgeon or described and evaluated late, which may otherwise have been avoided (Boone *et al.*, 1981; Saltz and Magruder-Habib, 1985). The coexistence of psychiatric and medical problems in a patient usually leads to more complex diagnostic assessments, increased health care costs, and less satisfactory outcome than in those without comorbidity, which has created vigorous interest in consultation-liaison (C-L) psychiatry (Steiner *et al.*, 1993). C-L psychiatry has been defined as an area of clinical psychiatry that encompasses clinical, teaching, and research activities of psychiatrists and allied mental health professionals in the nonpsychiatric divisions of a general hospital (Lipowski, 1983). Liaison interaction, whereby the psychiatrist being an integral part of a medical–surgical team, helps in the recognition of psychological comorbidity at an early stage and in the comprehensive management of the patients (Avasthi *et al.*, 1998).

Even though oral mucosa is extremely susceptible to psychiatric disorders, the mouth is directly connected to major human functions. As far as our literature search is concerned, only one research study was performed in the northeastern part of India. The present study was carried out to determine the sociodemographic characteristics and to identify psychiatric comorbidities at an early level. The aim was to determine the application of C-L psychiatry for systematic patient management in a rural tertiary care facility.

SUBJECTS AND METHODS

This cross-sectional descriptive research was carried out in a dental college multispecialty tertiary care facility located in a rural area of Kanpur, Uttar Pradesh, India. In the period from November 2018 to December 2020, 181 patients aged 18–60 years who attended the dental OPD were randomly selected and each consecutive patient was referred to the Psychiatry Department for evaluation. Informed consent was obtained from all patients or their families, and ethical approval was obtained from the institutional ethical committee. Every reported case was clinically examined, and the dental surgeon made the dental diagnosis based on clinical examination. Psychiatric comorbidity was evaluated by a psychiatrist with the aid of the General Health Questionnaire (GHQ)-28 and the Mental State Examination.

Research instruments General Health Questionnaire 28 (Goldberg and Williams, 1988; Sterling, 2020).

The GHQ-28 is a self-report analytical procedure intended for people with an increased probability of existing psychiatric disorders to be identified and assessed. Four subscales, including somatic symptoms, anxiety and insomnia, social instability, and extreme depression, were part of the questionnaire. Analyses within themselves are required by the presence of four subscales. The patients are asked to correlate their recent psychological state with their normal situation in the GHQ-28. The binary scoring system was applied (with the two least symptomatic responses scoring 0 and the two most symptomatic responses scoring 1). The higher score suggests the patient's worse psychological well-being. Any score greater than the threshold value of 4 is categorized as a 'psychiatric case.' 'The international classification of diseases-10' the International Classification of Functioning, Disability, and Health (International Classification of Impairment, Disability and Handicap, ICIDH, 2001).

STATISTICAL ANALYSIS

The data were subjected to the statistical package for the social sciences SPSS Inc. Released 2008. SPSS Statistics for Windows, Version 17.0. Chicago: SPSS Inc. and statistically analyzed using crosstab and χ^2 test. *p* value less than 0.05 was considered to be statistically significant.

RESULTS

A total of 181 patients were examined in the present study for sociodemographic characteristics, dental illnesses, GHQ-28 scores in different domains, comorbid mental disorders according to ICD-10, as well as association among the types of dental diagnoses and types of mental disorders. Most patients were female (*n*=107, 59.1%), and the rural population was 85%. Most of the patients were married (76.2%), unemployed (45.3%), and had 10th standard of school education (37%) (Table 1). The mean age of patients was 42 years, and the GHQ-28 score was

high for anxiety/insomnia, with a mean of 3.01. The mean GHQ-28 total score was 10.7 (SD 3.126), which was above the threshold value of 4 (Table 2). The commonest dental illness was periodontitis (14.9%) followed by dental caries (13.2%). Majority (79%) of the patients had psychiatric comorbidity according to the GHQ-28 total score. A total of 115 patients were diagnosed to have mental disorder on

Mental State Examination (Table 3). Somatoform disorder (*n*=34) was the commonest type of mental disorder, followed by mixed anxiety and depression (*n*=33). Very strong associations were found among the types of dental illnesses and the types of mental disorders (χ^2=37.89 and 98.64 respectively; p<0.05) (Table 4).

Table 1: Sociodemographic characteristics of patients

Sociodemographic characteristics	Subcategory	Frequency (*n*)	%
Sex	Male	74	40.88
	Female	107	59.11
Habitat	Rural	154	85.08
	Urban	27	14.91
Education	Illiterate	47	25.96
	Primary level	34	18.78
	10th standard	67	37.01
	12th standard	21	11.60
	Graduate	12	6.62
Marital status	Never married	32	17.67
	Married	138	76.24
	Widow/separated	11	6.07
Occupation	Unemployed	82	45.30
	Student	32	17.67
	Unskilled worker	26	14.36
	Semiskilled	11	6.07
	Skilled worker	5	2.76
	Semiprofessional	9	4.97
	Professional	4	2.20
	Business	12	6.62

Table 2: Mean of sociodemographic profile and clinical profile (General Health Questionnaire 28 score)

Sociodemographic profile	Mean	SD
Age (in years)	42.87	14.965
Family income per month (RS.)	10 867.68	8547.39
Clinical profile: GHQ-28 score		
GHQ-28: somatic symptoms	2.98	2.587
GHQ-28: anxiety and insomnia	3.01	2.698
GHQ-28: social dysfunction	2.89	1.036
GHQ-28: severe depression	1.84	0.984
GHQ-28: total score	10.72	3.126

GHQ: General Health Questionnaire.

Table 3: Clinical profile of the patients

	Subcategory	Frequency (*n*)	%
Dental illness	Periodontitis	27	14.9
	Gingivitis	15	8.28
	Dental caries	24	13.27
	Edentulous/partially edentulous	7	3.86
	Abscess/space infection	9	4.97
	Impacted teeth/pericoronitis	19	10.49
	Fracture of teeth	3	1.65
	Wasting disorder	14	7.79
	Oral ulcer/growth	17	9.39
	Retained root	19	10.49
	Pulpitis/pulp polyp	19	10.49
	Mobile teeth/nonvital	5	2.76
	Others	3	1.65
Comorbid-mental disorders on MSE according to ICD-10	Mix anxiety and depression	33	18.23
	Depressive disorder	8	4.41
	Obsessive compulsive disorder	3	1.65
	Generalized anxiety disorder	17	9.39
	Somatoform disorders	34	18.78
	Substance abuse/dependence	9	4.97
	Others	11	6.07
	No mental illness detected	66	36.46
Morbidity according to GHQ-28 total scores	Comorbidity (cases)	143	79
	No comorbidity (noncases)	38	20.99

GHQ: General Health Questionnaire; MSE: Mental State Examination.

Table 4: Association among types of dental illnesses and types of mental disorders

Dental diagnosis									
	Mixed depression/ anxiety	Depression	OCD	GAD	Somatoform disorder	Substance abuse	Others	No mental illness	Total
Periodontitis	5	3	1	3	6	3	1	5	27
Gingivitis	1	2	0	0	5	0	3	4	15
Dental caries	7	0	0	1	0	1	2	13	24
Edentulous	0	0	0	0	3	0	0	4	7
Dental infection	0	1	1	0	2	0	0	5	9
Pericoronitis	2	0	0	5	3	0	0	9	19
Fracture teeth	2	0	0	0	0	0	0	1	3
Wasting disorder	3	1	0	2	3	0	0	5	14
Oral ulcer	2	1	0	2	2	1	1	8	17
Retained root	2	0	1	1	6	2	3	4	19
Pulpitis/pulp polyp	7	0	0	1	4	2	1	4	19
Nonvital	1	0	0	2	0	0	0	2	5
Others	1	0	0	0	0	0	0	2	3
Total	33	8	3	17	34	9	11	66	181

GAD: generalized anxiety disorder; OCD: obsessive compulsive disorder; χ^2=37.89 and 98.64 respectively; *p* value less than 0.05.

DISCUSSION

There is a deficit of psychiatric-liaison facilities in India for dental professionals referring to patients with psychiatric comorbidity. This study is unique in that the patients selected are from dental clinics who are referred for psychiatric evaluation and management, regardless of whether or not they have psychiatric comorbidity. Most patients were middle-aged and unemployed women, which is compatible with the results of other research studies (George *et al.*, 2007; Ray *et al.*, 2015). Our tertiary care hospital population density is a rural community with low socioeconomic constraints. In the study done by Ray *et al.*, (2015), most patients were from rural area (95%), with an average family income of Rs. 13 164.00 (SD 12 196.889), and 27% were illiterate and 47% were educated up to secondary standard, and these results were found to be similar to the present study.

Prior literature studies that aimed to determine the factors that contribute to psychiatric referral among dental OPD patients have reported noncompliance and disturbed behavior as a significant finding (Friedson and Feldman, 1958). In our study sample, we observed that most participants had psychiatric comorbidity as per the total score of GHQ-28, of which somatoform disorders were the most prevalent psychiatric manifestations, accompanied by mixed anxiety and depressive disorders, which were compatible with the study findings of Ray *et al.*, (2015). The findings of the present study are broadly consistent with those of previous studies that evaluated the cause for noncompliance and functional somatic symptoms among dental patients, both of which found the major diagnostic categories to be somatoform disorders as well as mixed anxiety and depression (Slavney and Teitelbaum, 1985).

Psychological factors such as stressful life events, anxiety, and depression might have led to compromised functioning of the immune system in these individuals, which leads to noncompliance and somatic complaints, as suggested by the results of previous psychoneuroimmunological studies (Andersen, 2002; Segerstrom and Miller, 2004).

Our study shows that a high percentage of dental patients also experienced psychopathologies, especially anxiety and depression, similar to the study done by Ray *et al.*, (2015). The present research is consistent with another previous study that pointed out the need to induce the underlying problem of comorbid somatic occurrences among patients visiting dental specialists owing to various emotional distress. We have been able to demonstrate that such patients, provided there is a psychiatry consultation service, can be found and involved in therapy (Šarac *et al.*, 2020). The C-L psychiatry services currently in India mostly follow the consultation model in which psychiatrists assess the patients and advise the referring clinicians for the appropriate management. For further developments and service advancements in dental practice and also in other branches of medicine, this should provide a valuable C-L psychiatry model. One of the important components of a tertiary care hospital is liaison psychiatry, and further academic and collaborative exercises between clinicians and psychiatrists can contribute to improved understanding and acceptability of psychiatry with an emphasis on patients' quality of life (Ray *et al.*, 2015; Šarac *et al.*, 2020).

LIMITATIONS

The current research had a limited sample size because rural patients were unwilling to evaluate psychiatry owing to the stigma associated, absence of control group, and cross-sectional assessment. The results of this clinic based study could not be generalized to community settings. Further longitudinal and computational studies are to be conducted out with a larger sample size and other variables in the control group.

CONCLUSION

Liaison psychiatry is a rapidly developing and well-known subspecialty of psychiatry. Even as psychiatric C-L in dentistry is still at its grassroot level in India, a psychiatric C-L service within the dental facility catering to patients with psychiatric disorders in dental practice could be developed and effectively managed. By longitudinal incorporation, the constructive redesign of the undergraduate curriculum with early exposure to psychiatry helps to enrich the awareness and orientation of psychiatry. Constructing postgraduate education and training, with an emphasis on C-L models, would strengthen the hospital clinical environment and open the way for C-L psychiatry to become a future subspecialty. Trained with a better mindset toward psychiatry, aspiring physicians will play a crucial role in implementing C-L psychiatry as part of comprehensive health care in the future.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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