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Research Article

Is institutionalization a risk factor for poor oral health; a comparison of the oral status of schizophrenia and bipolar affective disorders

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ABSTRACT

Background: Oral health is an integral part of general health and psychiatric disorders lead them to change their life style and lose concern for general and oral health. In view of this, the study was planned to compare the oral health status in different types of in-patient psychiatric patients. Objective of current study was to study the oral health status in schizophrenia and bipolar affective disorders institutionalized in psychiatric hospital.
Methods: 50 Psychiatric patient (43 patients suffering from schizophrenia, 7 patients of bipolar affective disorder,) and 50 unrelated healthy volunteers were taken in the study. Dental examinations were done in both groups to measure the following indices of oral health: decayed, missing, and filled teeth index (DMFT) for caries; simplified oral hygiene index (OHI-S) for oral hygiene status; and tooth wear index for the wear of teeth. For comparison analyses t test was used.
Results: Mean age of the study group was 37.74 years. Mean decayed missing filled teeth index (DMFT) score for study group and control population was 8.52 ± 4.36 vs. 4.72 ± 2.74 vs. 1.81 ± 1.00 (P ≤0.0001). The mean simplified oral hygiene index (OHI-S) for study group was 3.87±1.21, while that of control was (p≤0.0001).The mean Tooth wear index (TWI) score for study group was found to be 1.62 ± 0.75 and for control group was 1.08±0.48 (P ≤0.0001).
Conclusion: Oral health status is affected in psychiatric patients and improving the oral health in psychiatric patients can go long way in improving the quality and management of these patients.

Keywords: Institutionalization, Risk factor, Decayed missing filled teeth index, Mean simplified oral hygiene index, Tooth wear index (TWI)

INTRODUCTION

Patients suffering from psychiatric diseases form a special group of population as they are often neglected. Oral health is an integral part of general health and forms important determinant for psychiatric patients. Oral health in psychiatric patients is affected.[1,2] People with psychiatric disorders often have advanced oral diseases, since psychiatric disorders lead them to change their life style and lose concern for general and oral health. Further, studies have shown that the institutionalized psychiatric patients have more advanced diseases than

general population.[1-4] The antipsychotic therapies may have adverse effects on oral health as medications are taken over a long period of time, which increases the risk for oral diseases and their duration.[5-7]

Dental awareness in psychiatric patients, who have special needs, may improve psychological well-being, drug compliance, diagnostic strategy and treatment plan. Some studies have been done, which assessed oral hygiene and tooth wear in psychiatric patients as a whole.[8-10]

There are three indices used for assessing the oral health status of patient; decayed, missing, and filled teeth index (DMFT)[11,12] for caries; simplified oral hygiene index (OHI-S)[13] for oral hygiene status; and tooth wear index for the wear of teeth.[14]

However to the best of the knowledge of the investigator, no study has been done which compares oral health and tooth wear index between schizophrenic and bipolar disorder patients.

METHODS

The present study was conducted in post graduate department of psychiatry, institute of mental health and neurosciences. A total of 100 patients were included in study (50 psychiatric in-patients and 50 healthy volunteer. 43 patients suffering from schizophrenia, 7 patients of bipolar disorder were included in the study. The psychiatric diagnosis was done by comprehensive clinical interview by 2 experienced psychiatrists. Inclusion criteria included patients above 18 years of age and patients willing to participate in study by means of informed consent. All patients were examined by consultant Prosthodontics and data in the study was obtained by dental examination WHO criteria. Dental examinations were done in both groups to measure the following indices of oral health: decayed, missing, and filled teeth index (DMFT)[11,12] for caries; simplified oral hygiene index (OHI-S)[13] for oral hygiene status; and tooth wear index for the wear of teeth.[14] The data was analysed using two sample independent t test and the mean difference between the two groups was considered to be statistically significant at P ≤0.005. Demographic quantitative characteristics were presented as mean ± SD and qualitative chartersitics as percentage.

RESULTS

Table 1 shows mean age of the study group was 37.74 years while as that of control was 29.94 years. In this study group 66% were males and 34% were females. Out of 50 patients 43 (86%) were schizophrenic and 7 (14%) were having bipolar affective disorder. Majority (54%) of patients in study group were institutionalized from more than 5 years.

Table 1: Demographic characteristic of the studied patients.

Characteristic		N	%
Age (year)	≤30	13	26
	31to40	17	34
	41to50	16	32
	51to60	4	8
	Mean ± SD	37.74 ± 9.55	
Gender	Male	33	66
	Female	17	34
Dwelling	Rural	36	72
	Urban	14	28
Marital status	Unmarried	10	20
	Married	38	76
	Widowed	2	4
Occupation	Household	19	38
	Unskilled	20	40
	Semiskilled	11	22
	Skilled	0	0
	Professional	0	0
Family type	Nuclear	24	48
	Joint	18	36
	Extended	8	16
Literacy status	Illiterate	0	0
	Primary	0	0
	Secondary	13	26
	Matric	32	64
	Graduate	5	10
	Post graduate / professional	0	0
	Primary	0	0
Family income	<5000	8	16
	5000-10000	14	28
	≥10000	28	56
	Mean ± SD	7800 ± 5400	
Socio economic status (Kuppaswamy scale)	Lower	38	76
	Upper lower	6	12
	Middle	4	8
	Upper middle	2	4
	Upper	0	0
Substance abuse	Cannabis	11	22
	Nicotine	22	44
	Opoids	14	28
	Benzodiazepines	3	6
Duration of illness	<1 year	8	16
	1-5 years	15	30
	>5years	27	54

Table 2 shows mean decayed, missing, filled teeth index (DMFT) score for study group and control population was 8.52 ± 4.36 and 4.72 ± 2.74 respectively (P ≤0.0001). The mean simplified oral hygiene index (OHI-S) for study group was 3.87 ± 1.21, while that of control was 1.81 ± 1.00 (P ≤0.0001). The mean tooth wear index

(TWI) score for study group was found to be 1.62 ± 0.75 and for control group was 1.08 ± 0.48 (P ≤0.0001).

Table 2: Comparison of oral health parameters between case and control.

	Case	Control	P value
AGE	37.74 ± 9.55	29.94 ± 9.59	≤0.0001
D	4.84 ± 2.56	2.32 ± 2.04	≤0.0001
M	3.48 ± 4.48	1.22 ± 1.23	≤0.0001
F	0.20 ± 0.78	1.16 ± 1.13	0.01
DMFT	8.52 ± 4.36	4.72 ± 2.74	≤0.0001
OHI-S	3.87 ± 1.21	1.81 ± 1.00	≤0.0001
STWI	1.62 ± 0.75	1.08 ± 0.48	≤0.0001

Table 3 shows mean decayed missing filled teeth index (DMFT) score for schizophrenic and bipolar patients was 6.86 ± 3.43 and 8.79 ± 4.47 respectively (P = 0.282). The mean simplified oral hygiene index (OHI-S) for schizophrenic and bipolar disorder was 3.18 ±1.28 and 3.99 ± 1.17 respectively (P = 0.104). The mean tooth wear index (STWI) score for schizophrenic 2.00 ± 0.81 and in bipolar affective disorder patients was 1.56 ± 0.73 (P = 0.152).

Table 3: Comparison of oral health parameters between schizophrenia and bipolar affective disorder.

	Schizophrenic	Bipolar	P value
AGE	38.57 ± 9.41	37.60 ± 9.67	0.807
D	3.43 ± 2.37	5.07 ± 2.54	0.118
M	3.29 ± 4.07	3.51 ± 4.59	0.903
F	0.14 ± 0.37	0.21 ± 0.83	0.837
DMFT	6.86 ± 3.43	8.79 ± 4.47	0.282
OHI-S	3.18 ± 1.28	3.99 ± 1.17	0.104
STWI	2.00 ± 0.81	1.56 ± 0.73	0.152

DISCUSSION

Oral health is an essential component of our general health and determines self-esteem as well as normal social interaction. Impairment in oral health can lead to stress, depression and diminished quality of life.[5] The various factors attributing to poor oral hygiene in psychiatric patients can be due to lack of interest ,low self-esteem, lack of knowledge to access dental services, fear of dental treatment, irregular attendance due to anxiety and inability to meet the cost ,side effect of medications and smoking (nicotine and cannabis).[15] Dental caries (tooth decay) and periodontal disease (gum disease) are the two diseases which have a major impact on oral cavity. The study is of its first kind, where comparison was done between schizophrenia and Bipolar affective disorder patients. Patients suffering from mental illness are more vulnerable to dental neglect and poor oral health.[16,17] In view of above the study was done to compare oral dental health in two groups of psychiatric patients.

The average age of subjects in our study was 37.74 years which was quite younger than other studies (46-71).[1,2] The mean ± SD DMFT score of in study group was 8.52±4.36 .This finding of ours is in agreement with Angelillo et al.[1] and Rekha et al. (2002)[18] who reported DMFT index of 15.5 and 6.1 respectively. This finding is in contrast to Kumar et al. who reported lower percentage of DMFT (0.92).[19] This lower DMFT was attributed to water fluoridation in the areas surrounding the hospital. DMFT assess the prevalence of caries in psychiatric patients and dental caries is an infective process, which may potentially destroy all exposed tooth surfaces and is caused by acid produced by micro-organisms which colonize dental plaque, the soft layer which accumulates on the tooth surface.[20] The DMFT comparison between schizophrenia (6.86±3.43) and Bipolar affective disorder (8.79 ± 4.47) was found to be non-significant (P = 0.282). In this study for schizophrenic patients, the mean±sd of decayed 3.43 ± 2.37, missing 3.29 ± 4.07, filled 0.14 ± 0.37 teeth .These findings are comparable to the findings of Karin et al. (2009),[21,22] but less when compared to the findings of Velasco et al. (1999).[23] These findings reveal poor dental health status in schizophrenic patients. For bipolar affective disorders, the mean ± SD of decayed 5.07 ± 2.54, missing 3.51 ± 4.59, filled 0.21 ± 0.83 teeth, which is comparable to the findings of Osezer et al. (2003),[24] but less when compared to the findings of Velasco et al. (1999).[23] These findings reveal poor dental health status in both group of patients.

In bipolar affective disorder patients during depressive episode there is decline in self-care which leads in poor oral health care. Further use of pharmacotherapy complicates the scenario leading to xerostomia, which leads to poor hygiene and dental caries[25-27] During maniac stage there may be over vigorous use of tooth brushes leading to cervical tooth abrasion and abraded oral mucosal[25-27] The mean OHI-S score for study group was found to be 3.87 ± 1.21, 1.81 ± 1.00 for control and found to be statistically significant (P ≤0.0001). Shah et al. (2011)[28] found the OHI-S score to be 3.6 ± 1 for study group and 1.2 ± 0.9 for control. Simplified oral hygiene index (OHI-S) for oral hygiene status measures the oral hygiene assessment. The OHIS comparison between schizophrenics (3.18 ± 1.28) as well as bipolar disorders (3.99 ± 1.17) was found to be non-significant (P = 0.152). The OHI-S values of schizophrenics (3.18 ± 1.28) was comparable to other studies.[29]

In our study the mean ± SD STWI for the study group and control was 1.62 ± 0.75 and 1.08 ± 0.48 respectively. The tooth wear in these patients results from antipsychotic medications, which causes decreased salivary flow and movement disorders like bruxism and clenching.[9] In our study it was found that occlusal surfaces, incisal edges and cervical part of buccal surfaces were affected more than other surfaces of the dentition. Ahmed S et al. 2006 found occlusal surface followed by the incisal edges of the central incisors were most commonly affected.[10] The STWI score comparison

between schizophrenics (2.00 ± 0.81) and bipolar affective disorder patients (1.56 ± 0.73) was found to be statistically non-significant (P = 0.104). The STWI scores (2.00 ± 0.81) were high in our study for schizophrenic patients. Similar findings have also been reported earlier.[29] Schizophrenic patients have increased incidence of carries and periodontal diseases due to the antipsychotic medications, which usually have anti cholinergic side effects leading to xerostomia.[30] In addition schizophrenic patients have risk of developing tardive dyskinesia, which are repetitive purposeless involuntary movement and affects the oral cavity.[31]

From above findings, it is clear that oral health is affected in both schizophrenia and BPAD patients. However comparison of oral health status between these two groups came to be non-significant. Chronic psychiatric disorders like schizophrenia and BPAD often develop advanced oral diseases, because of multiple factors like life style changes, lack of insight for general health, decreased family supports and diminished attitude of health professional towards oral health status shown are responsible for decreased oral health status. Patients in chronic ward usually have poor accesses to basic oral health facilities like brushing, regular dental check-ups.

So it is need of hour that dental awareness in psychiatric patients especially in institutional setting should be improved and to conduct regular dental check-up for diagnoses and early treatment of various dental diseases. Awareness regarding dental diseases in psychiatric patients, may improve quality of life and management of psychiatric patients.

CONCLUSION

Oral health status is affected in psychiatric patients and improving the oral health in psychiatric patients can go long way in improving the quality and management of these patients. The conclusion can be summarised as

1. The indices of oral health do not differ significantly in schizophrenia and BPAD.

2. There is significant difference between indices of oral health of healthy population and psychiatric patients.

3. Patients admitted in psychiatric hospital are risk of developing dental diseases.

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