

Original Article

Oral health status, self-perceived dental needs, and barriers to utilization of dental services among people with psychiatric disorders reporting to a tertiary care center in Haryana

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ABSTRACT

Background: Patients with psychiatric disorders can be vulnerable to oral diseases due to the adverse effects of medications and disease *per se*. The aim of this study is to assess oral health status, self-perceived dental needs, and barriers to utilization of dental services along with evaluation of intervention urgency among psychiatric patients.

Materials and Methods: In this cross-sectional study, 165 individuals were examined at the psychiatric outpatient department of a tertiary care center. Clinical examination [dentition status and community periodontal index (CPI) modified] was done according to the World Health Organization Basic Oral Health Surveys, 2013. Other information was collected by direct interview and all the data were recorded on a prestructured, validated pro forma. Data were analyzed using SPSS Software. The statistical significance was determined by analysis of variance (ANOVA) and level of significance was set at $P < 0.05$.

Results: Although decayed, missing, and filled teeth (DMFT) and CPI-modified scores increased with increase in duration of illness, the difference was not statistically significant. Evaluation of self-reported attributes revealed that the majority of the individuals had reported dental pain (34.6%) as their dental problem, 39.6% visit dentist only when there is a dental problem, and 41.7% did not felt any need to visit dentist. The ANOVA of DMFT in relation to duration of illness ($P > 0.062$) and CPI-modified scores ($P > 0.078$) were not statistically significant. Although when intervention urgency was evaluated, 70.3% needed prompt treatment depending on their oral health assessment.

Conclusion: The findings of this study suggest that oral health concerns of this marginalized section of the population are unrecognized and should be given prominence by psychiatrists.

Key Words: Intervention, oral health, psychiatric, self-reported, urgency

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INTRODUCTION

About 14% of the global burden of disease has been attributed to neuropsychiatric disorders, and such estimates have drawn attention to the importance of mental disorders for public health.^[1] The term mental

illness is used to describe clinically recognizable pattern of psychological symptoms or behavior causing acute or chronic ill health, personal distress, or other.^[2] The cumulative scientific evidence during

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the past two decades has significantly contributed to our understanding of the bidirectional relation of the oral cavity with general health. Directly, strong evidence links poor oral health to systemic diseases such as chronic lung disorder, diabetes, chronic heart disease, as well as impede vital functioning such as breathing, eating, swallowing, and speaking indirectly. Sims reported that the physical health problems are more common in psychiatric patients.^[3,4] The poor physical health faced by people with severe mental illness has been the focus of growing attention, particularly in relation to diabetes, cardiovascular disease, chronic lung disease, and cancer.^[5] They seem to be poorly recognized by psychiatrists, and oral health is no exception (Hede, 1995)^[6] even though it is an important part of physical health.^[7] People with severe mental illness commonly exhibit many factors which may contribute to poor oral health: xerostomia caused by psychiatric medication, lack of motivation for self-care, and deleterious habits. Dental cost, fear, and difficulty in accessing health-care facilities are the most commonly cited barriers to dental care.^[8] With the increasing trend of psychiatric disorders and its effect on oral health as such and also by medication used, there is a great need for the study of oral health status of psychiatric patients; thus, the present study was planned.

MATERIALS AND METHODS

The cross-sectional study was conducted for a period of 4 months. (April–July 2015) at the outpatient department of psychiatry situated in the outpatient block of a tertiary care center after obtaining ethical clearance (Project No. 503 dated April 8, 2015) and is being reported conforming to STROBE Statement.^[9] Sample size^[10] was estimated to be 165. All the potential participants were identified by co-supervisor from the department of psychiatry, and psychiatric diagnosis was made using International Classification of Diseases-10.^[11] A pilot study on thirty participants was conducted to validate format and ensure uniform interpretation and applicability of codes and criteria by investigator. These thirty participants were not included in the final analysis. Patients who had a psychiatric diagnosis, were on medications for the same for a period of more than 6 weeks, were able to cooperate, and did not show any aggressive behavior were included in the study after obtaining informed consent from participant or proxy or surrogate consent from caregivers/family members.

For literates, they read consent form themselves, but those who could not read; contents of the consent form were explained in plain language by a trained assistant. A simple random sampling technique was followed for the selection of the participants in which every first patient of the day who fulfilled inclusion criteria was included followed by the inclusion of every alternate patient in the study sample. An inclusion criteria checklist was displayed in the working area of specialist to ensure unambiguous selection of participants. The selected cases were examined by a trained investigator under the direct supervision of principle investigator and data were recorded by a recorder in a self-designed validated pro forma. Demographic details, oral hygiene practices, history of psychiatric disorder along with perceived dental needs, and utilization of health-care resources were recorded by direct interview. The literacy level was assessed by the level of education as per Census 2011, Government of India,^[12] and participants were categorized into socioeconomic classes^[13] and occupational divisions.^[14] Type III dental examination^[15] procedure was carried out, and oral health assessment was done according to the World Health Organization Basic Oral Health Surveys, 2013.^[16] Dental caries experience was assessed using dentition status,^[16] afterward decayed, missing, and filled teeth (DMFT) scores were deduced from it, and periodontal status was assessed using community periodontal index (CPI)-modified.^[16] The intraexaminer reliability was assessed using kappa statistics^[16] for dentition status and CPI-modified. Participants in need of further treatment were referred to the institution. Biomedical waste generated during the course of the study was handled according to the biomedical waste (management and handling) rules (Ministry of Forest and Environment, Government of India, 1998).^[17]

Statistical analysis

The data so collected were analyzed using SPSS Software Version 20.0 International Business Machines Corporation (IBM), (Chicago, IL, USA).^[18] A confidence interval of 95% and a significance level of 5% ($P < 0.05$) were established for all statistical tests used. The participants were stratified according to the duration of psychiatric disorder (3–6 months, 7–12 months, >1–2 years, >2–5 years, and >5 years). Results on continuous measurements are presented as mean \pm standard deviation and results on categorical measurement are presented in proportions; accordingly,

analysis of variance (ANOVA) and Chi-square test were used for comparing the same in subgroups.

RESULTS

The intraexaminer reliability statistics revealed a substantial agreement $k = 0.80$ and $k = 0.79$ for dentition status and CPI-modified, respectively. The age range of the study participants was 18–70 years, with a mean age of 39.38 ± 13.10 years. Among 165 participants, 58.8% (97) were males and 41.2% (68) were females; 78.78% (130) were literate and 21.2% (35) were illiterate; and 49.1% (81) were unemployed and 50.9% were employed. The frequency distribution of psychiatric patients [Table 1] was mood disorder (30.9%) and neurotic, stress-related, and somatoform disorder (30.9%). Majority of the participants were using toothbrush and toothpaste (75.8%) as their cleaning aids for the oral hygiene maintenance [Table 2]. As the duration of illness increased, the mean DMFT [6.60 ± 5.59 – 8.60 ± 3.62 : Table 3] and CPI-modified scores [0.60 ± 0.90 – 1.60 ± 1.51 : Table 4] increased which was statistically nonsignificant. Tooth pain (34.6%) was the most commonly reported self-perceived attribute [Table 5] and 29.3% of the participants never visited the dentist [Table 5]. Majority of the participants were in need of prompt treatment [70.3%: Figure 1].

Comparisons among groups categorized on the basis of duration of illness did not yield any statistical significance for any of the outcome variable (DMFT and CPI-modified) at $P < 0.05$ [Tables 3 and 4]. Table 5 presents self-perceived attributes of the sample, and Figure 1 shows intervention urgency among the participants.

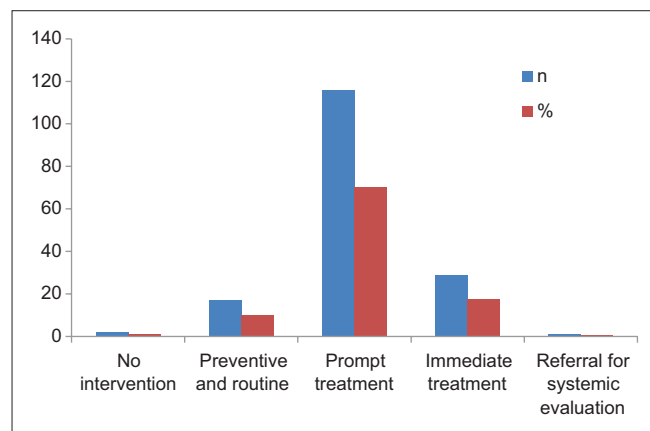


Figure 1: Distribution of participants according to the types of intervention needed.

DISCUSSION

Psychiatric disorders affect the general behavior of a person, impair level of functioning, and alter perception toward oral health. Eating and sleeping patterns take precedence over personal hygiene, making them susceptible to many oral diseases. In the present study, combination of toothpaste and toothbrush was most common oral hygiene aid reported that is 75.8% (125); however, it was observed that 92.5% of

Table 1: Distribution of participants according to their psychiatric diagnosis and duration of illness

| | n (%) |
|---|-----------|
| Psychiatric diagnosis | |
| Mood disorders | 51 (30.9) |
| Neurotic, stress-related and somatoform disorder | 51 (30.9) |
| Mental and behavioral disorders due to psychoactive substance use | 37 (22.4) |
| Schizophrenia, schizotypal and delusional disorders | 19 (11.5) |
| Epilepsy | 7 (4.3) |
| Duration of illness | |
| 3-6 months | 40 (24.2) |
| 7-12 months | 52 (31.5) |
| >1-2 years | 44 (26.7) |
| >2-5 years | 19 (11.5) |
| >5 years | 10 (6.1) |
| n | 165 |

Table 2: Distribution of participants according to type of aid used and frequency of tooth cleaning

| | Frequency, n (%) |
|-----------------|------------------|
| Type of aid | |
| Brush + paste | 125 (75.8) |
| Finger + powder | 21 (12.8) |
| Tree stick | 7 (4.4) |
| Others | 12 (7) |
| Tooth cleaning | |
| Once a day | 119 (72.1) |
| Twice a day | 8 (4.8) |
| Thrice a day | 1 (0.6) |
| Occasionally | 37 (22.4) |
| n | 165 |

Table 3: Mean Decayed, Missing, Filled Teeth in relation to duration of illness

| Duration of illness | Mean DMFT±SD | P* |
|---------------------|--------------|-------|
| 3-6 months | 6.60±5.59 | 0.062 |
| 7-12 months | 6.73±3.96 | |
| >1-2 years | 8.77±5.51 | |
| >2-5 years | 8.36±4.19 | |
| >5 years | 8.60±3.62 | |

*Difference was statistically nonsignificant as revealed by ANOVA. DMFT: Decayed, Missing, Filled Teeth; ANOVA: Analysis of variance; SD: Standard deviation

Table 4: Mean Community Periodontal Index (modified) scores of the sample in relation to duration of illness

| Duration | Bleeding score (mean±SD) | P* | Pocket (4-5 mm) (mean±SD) | P* |
|-------------|--------------------------|-------|---------------------------|-------|
| 3-6 months | 6.78±5.75 | 0.769 | 0.60±0.90 | 0.078 |
| 7-12 months | 7.56±5.87 | | 1.54±2.41 | |
| >1-2 years | 7.66±4.89 | | 1.14±1.23 | |
| >2-5 years | 8.47±3.88 | | 1.79±2.57 | |
| >5 years | 6.40±4.62 | | 1.60±1.51 | |

*Difference was statistically nonsignificant as revealed by ANOVA. ANOVA: Analysis of variance; SD: Standard deviation

Table 5: Distribution of self-perceived attributes of the sample

| | n (%) |
|----------------------------------|-------------|
| Self-reported dental problems | |
| Tooth pain | 44 (34.6) |
| Decayed teeth | 21 (16.5) |
| Sensitivity in teeth | 17 (13.4) |
| Bleeding gums | 12 (9.4) |
| Replacement of missing teeth | 9 (7.1) |
| Bad breath | 8 (6.3) |
| Cleaning of teeth | 8 (6.3) |
| Mobility of teeth | 4 (3.1) |
| Dry mouth | 3 (2.4) |
| Others | 1 (0.8) |
| n* | 127 (100.0) |
| Dental visit | |
| Never visited | 48 (29.3) |
| <6 months | 9 (5.5) |
| 6-12 months | 17 (10.4) |
| >12 months | 25 (15.2) |
| Only when there is some problem | 65 (39.6) |
| n | 165 (100) |
| Self-reported reasons (barriers) | |
| Never felt the need | 20 (41.7) |
| Lack of awareness | 13 (27.1) |
| Time constraint | 7 (14.6) |
| Costly treatment | 7 (14.6) |
| Dental anxiety | 1 (2.1) |
| n | 48 (100) |

*23% (38) did not report any dental problem

the participants were unaware of the recommended frequency of brushing, 72.1% were brushing once a day, and 22.4% were brushing occasionally. It could be attributed to a lack of awareness regarding oral health and motivation for practicing good oral hygiene habits; nonetheless, it habitually has a truncated significance in the framework of psychological health, and further, in certain psychiatric diseases, the priority may be nonexistent.^[19,20] In particular, the negative symptom complex of this disease (the absence of emotion, social detachment, lack of expression, lack of motivation,

and initiative) is associated more with the long-term chronicity of the disease and will impact one's ability and desire to perform activities of normal daily living including oral health care.^[21]

Length of psychiatric illness has consistently being reported as the predictor of oral health status in the literature,^[22,23] the results have shown the similar relationship between the two as demonstrated by an increase in DMFT scores with increase in duration of illness. Further, the longer duration of medication often accompanies the disease, and most of the antipsychotic drugs cause salivary gland hypofunction and thus reduced salivary flow which is a significant causative factor for dental caries.^[3,21,24,25] Periodontal status as assessed by CPI-modified revealed that gingival bleeding was present in 88.5% (146) of the participants, whereas periodontal pocket of 4–5 mm was seen in 52.7% (87) participants, with a mean number of teeth affected increasing with increase in duration of illness. It could be due to altered quality and quantity of saliva, altered oral microbial flora, endocrine dysfunction, and reduced resistance to infections as a result of long-term medications^[26] as well as effect of disease *per se* on levels of self-sufficiency, particularly in the area of personal hygiene (including oral hygiene).^[7]

Almost 77% participants reported the need for dental treatment, whereas 23% did not report the need for any dental treatment. This finding is almost consistent with studies already reported in literature.^[5,20,27] Nearly 65.9% of the participants had more than one chief complaints and majority (34.6%) of them were of tooth pain that points toward a higher proportion of unmet dental needs among psychiatric patients. About 39.6% of the participants visited dental surgeon only when there was a dental problem and 29.3% had never visited a dentist. When reasons for not utilizing dental services, a total of five distinct barriers were reported with the majority of them never felt the need to visit a dentist. The possible explanation could be the double burden experienced by patients diagnosed with a psychiatric illness, that of their illness, including not only the signs and symptoms of the disease but also the associated stigma and discrimination which jeopardize their ability to access needed resources to sustain treatment.^[28] Another astonishing revelation in the present study is that, despite the noticeable poor oral health status, none of the participants had been referred to dental care by medical professionals, and this highlights the absence of an efficient referral

system existing in the health-care system. It also highlights the compartmentalization in viewing oral cavity separately from the rest of human body and ignoring the effect of oral health on general health. Need for dental treatment was quite high in this group as prompt treatment was needed by 70.3% (116) of participants.

The results of this study reveal that this special group of population is bearing a considerable burden of oral diseases, although an exact reason could not be established within the limits of this study design. Further population-based research incorporating better-defined covariates and longitudinal designs are needed to characterize such link successfully. Although scientific estimation for sample size was done, proportions of participants in each diagnosis came to be less, so no significant finding regarding the type of drug consumed could be established as patients were recruited from a psychiatric outpatient unit, findings of the survey may not apply to long-term rehabilitation participants. In this study, the other factors such as composition of saliva and mouth breathing were not considered that might be potential confounding factors.

CONCLUSION

The findings of this study suggest that oral health concerns of this marginalized section of the population are unrecognized and should be given prominence by psychiatrists. Awareness regarding oral health and hygiene for health-care professionals, especially nurses, should be channelized through the educational programs and standard checklists can be prepared for the early identification of oral health problems by nondental personnel for early referrals to dental professionals. The repercussion of psychotropic medication on oral health should be considered, monitored, and managed. Closer collaboration between mental health clinicians and dentists is important to remove barriers to care. Patient-centered interdisciplinary coordinated care that includes both medical and dental professionals should be planned to ensure acceptable overall health and quality of life.

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Conflicts of interest

The authors of this manuscript declare that they have no conflicts of interest, real or perceived, financial or nonfinancial in this article.

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