A study of dental diseases in psychiatric patients: is there a relationship?

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Background
Oral health is an integral part of general health. There is evidence that patients suffering from mental illness are more vulnerable to dental neglect and poor oral health.
Patients and methods
All patients attended the dental clinic in the Abha Psychiatric Hospital from the inpatient departments or the out patient department (OPD) clinics for adult psychiatry, and child and adolescence psychiatry clinics are registered through the computer system and the data were collected for the Hijri year of 1437.
Results
Male patients were more in number compared with female patients (444 vs. 110). In addition, the age group between 25 and 45 years was more affected by dental problems than other groups. Also, the chronic psychiatric patients with a long stay at the psychiatric hospital were more affected than the newly admitted ones.
Conclusion
Better coordination between medical, dental, and psychiatric unit administration is required to serve the needs of this group of patients.

Keywords:
A study, dental diseases, psychiatric disorders, relationship

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Introduction

Oral health is an integral part of general health. There is evidence that patients suffering from mental illness are more vulnerable to dental neglect and poor oral health (Tomar *et al.*, 2011).

Sims (1987) reported that physical health problems are more common in psychiatric patients.

Orodental diseases seem to be poorly recognized by psychiatrists, and oral health is no exception. Psychiatric disorders affect the general behavior of a person, impair the 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 Tomar *et al.* (2011). The two diseases that have a major impact on the oral cavity are dental caries (tooth decay) and periodontal disease (gum disease) (Feinmann and Harris, 1984).

People with severe mental illness are susceptible to oral disease for a number of reasons: these include amotivation, poor oral hygiene, fear, specific dental phobia, dental costs, difficulty in accessing healthcare facilities, and the side effects of psychiatric drugs such as dry mouth (xerostomia) (Bardow *et al.*, 2001; Lewis *et al.*, 2001; Ramon *et al.*, 2011).

Dental caries occurs through the demineralization and subsequent proteolysis of the hard tooth structure (enamel and dentine) from a build-up of dental plaque, which is micro-organism colonies. If plaque is not removed, and there is frequent intake of readily fermentable carbohydrates in the diet, irreversible cavitations can occur. This will normally require restoration or extraction of the tooth if the dental pulp has become infected (Pihlstrom *et al.*, 2005). Periodontal disease usually begins with gingivitis – inflammation of the gingival tissues (gums). This, too, is caused by longstanding accumulation of dental plaque in contact with the soft tissues. In patients who harbor particularly pathogenic microflora or whose host response to these micro-organisms is ineffective, inflammation spreads to the periodontal ligament with destruction of connective tissues and surrounding (alveolar) bone. Signs of periodontal disease include bleeding gums and pockets where the gingivae have become detached from the teeth. In more advanced disease, there is exposure of tooth roots and mobility of teeth (Cormac and Jenkins, 1999).

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Medications administered for the control of signs and symptoms of psychiatric pathologies have well-known side effects, all of which the specialist should be fully aware of, so as to avoid negative effects, as in most cases it is impossible to change the medications or dosage. Sedatives and anxiolytics can cause cardio-respiratory depression, and in some patients they cause paradoxical reactions. The only interaction with benzodiazepines related to dentists is the macrolides (erythromycin), as their mix produces an increase in the levels of serum, and of the half-life (Becker, 2008).

Patients and methods

This is a study of dental diseases in psychiatric patient's comorbidity in Abha Psychiatric Hospital in Aseer region that is located at the southern area of Saudi Arabia, which is a high-altitude area of about 2500–3000 m above sea level. A written concent is obtained from every patients or first degree relatives in case of children. This study included all patients attending the Abha Psychiatric Hospital, which served a population of about 2 million persons during the period of 1 Hijri year of 1437. Data of all patients in the hospital during this year were reviewed, including age, sex, nationality, inpatient, or OPD patient. This hospital is the only governmental hospital with OPD and inpatient departments serving the area together, with some private hospitals and polyclinics giving outpatient service only.

The hospital consists of seven OPD clinics for adult psychiatric services working 4 days per week, and another OPD clinic for child and adolescent psychiatry and nine inpatient wards with 117 beds, including acute male psychiatric ward with 13 beds, acute male addiction ward with 15 beds, subacute psychiatric ward with 15 beds, subacute addiction ward with 15 beds, rehabilitation male ward with 15 beds, male chronic patients ward with 15 beds, jail ward with four beds, acute female ward with 10 beds, and subacute female ward with 10 beds. There are two more emergency room clinics working daily for 24 h with five beds for patient observation and for those patients waiting for admission, and there is a dental clinic operated by two dental specialist physicians working on a daily basis and serving all patients including OPD patients by direct referral from psychiatrists and inpatients by direct referral from their treating psychiatric doctors.

The data of all patients attending the dental clinic are registered through computer system in every OPD or admission office and then collected by the medical counting department.

The data were then tabulated and graphed to give our results for that year.

Ethical consideration

The approval from the local medical ethics committee and the director of the hospital was obtained. The data will be introduced to the computer anonymously.

Results

Results are shown in Tables 1–6.

Radiography was performed for dental diagnosis of some cases for 137 patients from both outpatients and inpatients (119 men, 87%, and 18 women, 13%).

Discussion

Mouth health is an integral part of general health, and it affects all aspects of life: personal, social, and psychological. This is particularly important in patients with special needs, such as psychiatric patients (Dangore-Khasbage *et al.*, 2012). These patients have a tendency to be more prone to develop bucco-dental diseases, because of their lack of motivation, the difficulty to perform a proper mouth health technique, the hurdles that have to be overcome to treat them dentally, and the negative effects caused by psychotropic medications, affecting the normal

Table 1 OPD psychiatric patients attending the dental clinic according to sex

Sex	Male	Female
n (%)	80.1 (444)	110 (19.9)

Table 2 OPD Psychiatric patients attending the dental clinic according to age groups

Age groups	+0	15+	25+	45+	60+
n (%)	73 (13.2)	97 (17.5)	217 (39.2)	140 (25.2)	27 (4.9)

Table 3 Dental procedures given to the OPD patients

Dental procedure	Extraction	Filling	Oral surgery	Nerve treatment	Gum treatment	Oral problems	Follow-up	Medical prescription	Others
n (%)	99 (17.9)	236 (42.6)	2 (0.4)	76 (13,7)	44 (7.9)	26 (4.7)	15 (2.7)	41 (7.4)	15 (2.7)

Table 4 Inpatients attending the dental clinic according to sex

Sex	Male	Female	Total
n (%)	115 (90.5)	12 (9.5)	127 (100)

Table 5 Inpatients attending the dental clinic according to age groups

Age groups	0+	15+	25+	45+	60+	Total
	00	22	37	40	28	127
	00	17.3	29.1	31.5	22.1	100

Table 6 Dental procedures for inpatients attending the dental clinic

Dental procedure	Dental extraction	Dental filling	Medications	Local fluoride	Removal of calcium deposits
n (%)	49 (39.6)	7 (5.5)	48 (37.8)	8 (6.3)	15 (11.8)

physiology of salivary glands and epithelia of the oral mucous, causing xerostomy or sialorrhea (Adeniyi *et al.*, 2011; Janardhanan *et al.*, 2011; Sumi *et al.*, 2012). Different authors have reported that patients with mental illnesses get inadequate dental care because of ignorance, fear, stigmas, or negative attitudes by the professionals (Dangore-Khasbage *et al.*, 2012).

Psychiatric patients, especially schizophrenics, constitute a risk group for periodontal diseases. Psychiatric factors can affect the etiopathogeny of these periodontal disorders. Dental hygiene is usually poor, with higher occurrence of plaque and stones. The periodontopathogenic plaque is more aggressive and adhesive, as a consequence of xerostomy and smoking (Velasco-Ortega *et al.*, 2005).

This study (Tables 1 and 4) showed that men were more in number than women, by a significant difference as regards the OPD patients: male patients represent about 80% of all patients attending the dental clinic, and as regards the inpatients male patients represent more than 90% of patients visiting the dental clinic for orodental complaints. This is consistent with one of the studies; researchers examined characteristics of patients admitted in the early 1990s to the Buraidah Psychiatric Hospital located in the Al-Qaseem region of KSA (Qureshi *et al.*, 1991). Of the 195 patients assessed, the majority were young men.

In agreement with this study, the characteristics of patients admitted to hospitals specialized in addiction treatment has also been examined. One of the studies in the early 1990s assessed 116 consecutive inpatients admitted to the Al Amal Hospital in Dammam (Hafeiz, 1995). Most patients were young (83% aged 21–32 years); all were male, and 97% were Saudi nationals.

Another study conducted by AbuMadini and Rahim (2002) described the characteristics of 1366 patients admitted to the psychiatric service of King Fahd Hospital in Al-Khobar between 1988 and 1998. Only 20% had schizophrenia and the majority of whom were male.

Table 2 shows that patients in the age group between 25 and 45 years (representing 39.2% of all patients) were more likely to attend the dental clinic as regards the OPD patients, followed by the age group between 45 and 60 years (representing 25.2% of all patients). In addition, Table 5 for inpatients shows that the same age groups were more likely to attend the dental clinic for orodental problems (two groups represent 60.6% of all inpatients).

This is consistent with most of researches that most of the psychiatric disorders including anxiety, mood, and psychotic disorders start at the early 20th and thus the age group between 25 and 45 years is most affected by psychiatric disorders and many of them may need much admission and use psychiatric medications that may continue for many years. Many people affected by these disorders cannot perform oral hygiene satisfactorily. This fact is aggravated by prolonged use of medications that cause dry mouth, as well as the excessive use of tobacco products and alcohol that contributes to poor oral health (Haas *et al.*, 2009). The severity of the changes present because of a combination of factors. Added to this the already mentioned of dry mouth due to use of psychiatric medications and excessive use of tobacco, the detal damage for these individuals and psychmotor problems in accessing detal treatment (Jamelli *et al.*, 2010). Diseases of the oral cavity affecting these patients are the same as in the general population (caries, periodontal disease, malocclusion), but generally occur more frequently (Guerreiros and Garcia, 2009).

As regards the dental procedures given for the patients (Table 3), it was observed that for OPD patients the most common procedure was dental filling (representing 42.6% of all OPD patients), but (Table 4) for inpatients the most common procedure was dental extraction, which means that the inpatients are more affected by dental problems than OPD patients, as they lack orodental hygiene because of the effect of chronic psychiatric disease and effect of psychotropic drugs.

Patients under hospitalization have the highest proportion of periodontal disease, which corroborates with the findings of this research. Changes in the quality and quantity of saliva, changes in oral microbiota, endocrine dysfunction, and reduced resistance to infections among these patients could lead to a higher incidence of periodontal diseases (Gowda *et al.*, 2007; Teng *et al.*, 2011).

People with serious mental illness are at an increased risk of developing oral disorders and have higher treatment needs compared with the general population. In addition, oral health is not seen as a priority in people with mental disorders. Performing groups to work motivation and oral health education can encourage self-care, self-perception, and also the care performed by family members (Clifton *et al.*, 2011).

Recommendations

The oral health evaluation showed a high prevalence of periodontal disease, caries, and extracted teeth, showing that when this population was assisted even with all the scientific advancement in the field of dentistry they had poor oral health.

Features unique to psychiatric diseases with a thorough medical history (often generated in consultation with the physician or psychiatrist), appropriate examination, and knowledge of the diagnosis, most dental services can be provided to clients with psychiatric disorder, often in association with an aggressive program of preventive dental education.

The dentist's ability to contribute to the increased feelings of self-worth and overall psychotherapeutic management of these individuals can be a rewarding experience and demonstrates the harmonious interaction that can be achieved in the overall medical and dental management of patients with psychiatric disorders.

Therefore, dental consultation must be a routine consultation for every psychiatric patient either as OPD or as an inpatient to improve the orodental hygiene and to prevent the major dental problems associated with many psychiatric patients.

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Conflicts of interest

There are no conflicts of interest.

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