

Psychiatric comorbidities, oral health, and comprehensive care

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Abstract

Patients' with psychiatric comorbidities (schizophrenia, affective disorder/depression, mental retardation etc.) often exhibit poor oral health and dental hygiene. Potential etiologic factors for poor oral health are psychiatric comorbidities, neurological disorders, medication side-effect (dryness of mouth, hyposalivation), binge eating/induction of vomiting in eating disorders, substance abuse (smoking nicotine/cannabis, drinking alcohol), nutritional deficiency, poor self-care and bad oral hygiene. The rising trend of poor oral health and dental complications (dental caries, infection, tooth decay, tooth loss) among psychiatric patients poses a significant public health problem. Mental and dental health practitioners often lack the time and effort to address this vital public health issue in their practice. This review article highlights the clinical association between psychiatric comorbidities and poor oral health that has important practice implications. Additionally, this article provides practice guidelines for comprehensive care among psychiatric patients with poor oral health.

Introduction

Patients' with psychiatric comorbidities (schizophrenia, affective disorder/depression, mental retardation etc.) often exhibit poor oral health and dental hygiene [1]. This could be due to lifestyle factors and poor self-care. Oral health needs of patients' with psychiatric comorbidities are complex and need to be addressed by both mental and dental health practitioners. Public health problem of poor oral health is often overlooked and underreported in this underrepresented population of patients with psychiatric comorbidities.

Review of literature indicates dental health practitioners' not only lack adequate skills or awareness for treating special needs population but also exhibit communication barriers, attitude and avoidant behaviors for dealing with difficult to treat mentally disabled psychiatric patients [2]. Conversely, mental health practitioners report barriers (time constraints, lack of skills or training) and fail to address oral health and dental hygiene among patients with psychiatric comorbidities [3]. Both mental and dental health practitioners might benefit from tailored intervention coupled with awareness and skills training to treat dental health problems among patients with psychiatric comorbidities [1,3]. There also exists a research gap as there are limited number of studies examining the association between psychiatric comorbidities and oral health. Majority of the studies are observational vs. interventional and are limited by small sample size [4,5]. Prior research studies conducted in this field not only have limitations in adequate control of confounding variables but also lack standardized research tools to assess the efficacy of conducting oral health intervention among patients' with psychiatric comorbidities [4,5]. Thus evidence based dentistry is lacking in this population. This review article highlights the clinical association between psychiatric comorbidities and poor oral health that has important practice implications. Additionally, this article provides practice guidelines for comprehensive care among psychiatric patients with poor oral health.

Methods

A search for online databases: MED-LINE, Pubmed, PsychLit, Google Scholar was performed. Only articles published in English language globally between the time interval 2000-2016 were considered for inclusion. Both adults (males & females) and youths (child and adolescents) were included. The search terms used were "psychiatry", "comorbidities", "schizophrenia", "depression", "eating disorder", "substance abuse", "addiction", "smoking", "nicotine", "alcohol", "cannabis", "intellectual disability", "oral health", "dental hygiene", "dental caries", "tooth decay", "dental health", "etiology", "pathophysiology", "clinical", "dentistry", "practice", "implications", and "comprehensive care". These search terms were used in combination with each other using the conjunctions "AND" and "OR". The initial review yielded 884 articles. The articles were reviewed one by one. The reference section of the articles considered for the initial review yielded a few articles that were included in subsequent review. Finally, only 66 recent articles that were relevant to the topic were included for the final review.

Results

Epidemiology

The prevalence of poor oral health and dental hygiene (61%) among patients with psychiatric comorbidities is higher than the general population [6,7]. Patients' with mental disability are 2.5 times

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more likely than the general population to experience tooth decay [8]. Patients' with psychiatric illness have 3.4 times the odds of teeth loss than the general community [9]. Factors contributing to the increased prevalence of poor oral health among mentally ill could be avoidance behavior to seek dental care due to the fear of pain or dental phobia which could also be exacerbated by the cost of dental care. The prevalence of dental phobia is reported to be 24.3% which may prevent dental visit [10]. Fear of dental treatment and procedures is associated with female gender, often rated severe than any other fear and is strongly associated with intrusive re-experiencing (49.4%) [10]

Poor oral health is observed not only among adults with psychiatric comorbidities but also in children and adolescents'. Prevalence of dental caries among children with mental disabilities is reported to be approximately 50-60% [5]. Dental health services are often underutilized by patients' with psychiatric comorbidities (schizophrenia and affective disorders, mental retardation) and therefore, represents an unmet need [11]

Etiology

Psychiatric comorbidities

Schizophrenia

Patients with psychiatric comorbidities like schizophrenia have poor oral health and exhibit tooth decay, missing teeth, dental caries, and consequent dental filling [12]. Poor oral health with dental caries and missing teeth is observed not only among outpatient schizophrenic patients but also in chronically hospitalized psychiatric inpatients with schizophrenia and difficult to treat psychiatric comorbidities [13]. Patients with schizophrenia have halitosis (bad breath) which is an indicator of poor oral health and dental hygiene [14]. Poor oral health (dental caries, decay and tooth loss) is not only associated with categories and types of psychiatric diagnosis but also with the number of psychotropic medications [15]. Increasing age, treatment anxiety, neglect of tooth-brushing and chronic ward inpatients are significant predictors of poor oral health reported in patients with psychiatric comorbidities [16].

Affective disorders

Affective disorder specifically symptoms of depression along with anxiety are associated with poor oral health including low tooth-brush frequency [17]. During depression (Major Depressive Disorder or Bipolar depression), many patients exhibit fatigue, lack of interest or motivation for self-care and a decline in the level of oral hygiene which increases the prevalence of dental caries and periodontal disease [18]. Factors that influence oral health include type, severity and stage of psychiatric comorbidity, mood, motivation, self-esteem, socio-economic status, self-care, lifestyle, habit (smoking, drinking), attitude, knowledge and self-perception of the health problem [19, 20]. Additionally, severely depressed patients have priorities other than their oral health, may lack facilities or privacy for oral hygiene owing to poor housing or homelessness. These factors indicate that there exists an association between mental health and oral health [19].

Eating disorders

Patients' with psychopathological conditions like eating disorders (Anorexia nervosa and Bulimia nervosa) have poor oral health and dental complications [21]. The dental implications of eating disorder include dental enamel erosion (due to pica, vomiting and toothwear), teeth decalcification from gastric acid exposure due to vomiting induction (perimylolysis), enlargement of salivary glands (parotids),

hyposalivation, dryness of mouth, dental caries (due to consumption of high-carbohydrate foods and intake of sugary and carbonated beverages) [22-24]. Oral manifestations of eating disorders are caused by numerous factors including nutritional deficiencies, metabolic derangements, nutritional habits (binge eating and induction of vomiting in Bulimia patients), and poor dental hygiene [25].

Mental retardation

Patients with mental retardation and intellectual disabilities including children with autism, Down's syndrome, learning disabilities are more likely to have dental caries, periodontal disease and poor oral health [26-28]. Older adults with lower cognitive function as noted by lower scores on Mini Mental Status Exam (MMSE=0-23) have a higher risk of dental (coronal and root) caries [29]. Additionally, older adults with lower cognitive function (MMSE= 0-23) demonstrate four times higher risk of not utilizing regular dental care services [29]. Patients with intellectual disabilities and mental retardation lack cognitive skills and physical coordination to perform complex tasks like daily tooth brushing and flossing [30]. Thus, poor oral health is noted among mentally retarded and intellectually disabled individuals.

Neurological disorders

Patients' with neurological disorders especially Parkinson's disease (PD) have more dental caries and fewer remaining teeth [31]. Postural instability and bradykinesia may prevent dental visits in this patient population thereby predisposing them to poor oral health and dental complications [31]. Patients with dementia and Alzheimer's disease also exhibit poor oral health and need comprehensive dental care [32]. Cognitive dysfunction (learning and memory problems) along with functional and behavioral changes interferes with patients' ability to perform oral hygiene techniques ultimately increasing the prevalence of dental disease in older patients with Alzheimer's disease [33]. Therefore, poor oral health is observed in patients with neurological disorders.

Medication side-effect

Psychotropic medications (antidepressant and antipsychotics) block the cholinergic receptors, cause reduced salivary flow and produce dryness of mouth (xerostomia). Dryness of mouth is associated with decreased salivary flow rate and enzymatic action causing bacterial overgrowth and yeast (candida) infections [13, 18, 34]. Hyposalivation and dryness of mouth is also associated with increased incidence of infections, fissuring of corners of mouth, cracking of lips, and difficulty chewing, speaking and swallowing [35, 36]. Dryness of mouth decreases the overall quality of life, increases plaque and calculus formation and therefore leads to a higher incidence of dental caries, gingivitis and periodontitis [13, 18, 37].

Addiction and substance abuse

Addiction and substance abuse (nicotine, alcohol, illegal drugs) is associated with poor oral health, bad dental hygiene and complications [38-41]. Smoking and chewing nicotine products leads to tar deposition and teeth coloration, an increased incidence of dental erosion, mucosal burns, keratotic patches, cervical abrasion and gingival necrosis [42]. Among alcohol dependent individuals poor oral health and decreased saliva secretion increases the risk of dental caries, burning mouth syndrome, halitosis, and oral infections (gingivitis, stomatitis, glossitis, angular cheilitis, leukoplakia of the tongue) [43]. Alcohol and drug abusers combined have a significantly higher risk of having tooth decay compared to alcohol abusers alone [44].

Nutritional deficiency

Poor oral health in patients with psychiatric comorbidities often leads to functional difficulties (tooth pain, tooth loss) and makes it difficult for them to eat nutritional food [45]. Nutritional deficiency associated with low fruits and vegetable intake in older adults with low socio-economic status is associated with loss of teeth (edentulousness) [46].

Self-care and oral hygiene

Oral care is important in the prevention of dental infections and complications [47]. Lack of daily self-care, regular tooth-brushing, oral hygiene maintenance is associated with oral infections, dental caries and tooth loss among patients with psychiatric comorbidities.

Discussion

Prior studies have addressed dental practice guidelines in patients with psychiatric comorbidities [33, 48-53]. These include

Comprehensive care

1. Psychiatrists and mental health practitioners should take the time and effort to elicit a dental history, conduct an oral exam along with performing general physical examination.
2. Psychiatrists and mental health practitioners should address psychotropic medication side-effects like dryness of mouth (xerostomia) and prescribe salivary substitutes and stimulants.
3. Psychiatrists should perform a comprehensive dental evaluation and ask for a dental consultation and follow up as necessary.
4. Psychiatrists and mental health practitioners should educate their patients about maintaining good dental hygiene, daily flossing, advocate usage of anti-caries agent (fluoridated toothpaste) and Chlorhexidine mouth rinses.
5. Training of dental health practitioners, inclusion of special care dentistry in dental school curriculum for early identification of oral cues of eating disorders, substance abuse and provision of comprehensive dental care should be advocated for difficult to treat patients with psychiatric comorbidities.
6. Dental health practitioners should consult with psychiatrists about patient's current medication regimen, degree of compliance with pharmacotherapy, current mental status and psychological profile.
7. Dental health practitioners should consider and provide adequate sedation, analgesia, mouth-guards, restraints and standby personnel while conducting dental exam and procedures on violent, unpredictable, difficult to treat patients with psychiatric comorbidities.
8. Both mental and dental health practitioners should discuss the adverse effects from dental procedures, dental pain analgesic and psychotropic medication prescription, dose management, potential drug interactions, and adverse effect.
9. Both mental and dental health practitioners should avoid or use reduced dosages of sedative and hypnotic agents and narcotic analgesics in their practice.
10. Both mental and dental health practitioners should undertake preventive education program including oral hygiene instruction, frequent recall appointments, advocate regular brushing of teeth with fluoridated toothpaste and promote dietary counseling.

11. Oral health promotion program for people with psychiatric disabilities should include a combination of mechanical toothbrush, dental instructions and reminders.

Public health significance

Poor oral health poses a significant public health problem in patients with psychiatric comorbidities [54,55]. There is a greater need for addressing oral health issues and comprehensive care among patients with psychiatric comorbidities which is an understudied population. Future public health research should focus on oral health promotion in patients' with psychiatric comorbidities.

Conflict of interest

The author reports no conflict of interest.

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