

We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

4,800

Open access books available

122,000

International authors and editors

135M

Downloads

Our authors are among the

154

Countries delivered to

TOP 1%

most cited scientists

12.2%

Contributors from top 500 universities



WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.

For more information visit www.intechopen.com



Oral Health of People with Psychiatric Disorders

Lin-Yang Chi¹ and Kuan-Yu Chu²

¹*Department of Dentistry,*

National Yang-Ming University,

²*Department of Dentistry, Tao-Yuan General Hospital,*

Department of Health

Taiwan

1. Introduction

1.1 What are the psychiatric disorders?

Psychiatric disorders are categorized by the Diagnostic and Statistical Manual of Mental Disorders (DSM- IV), which is published by the American Psychiatric Association and covers all mental health disorders for both children and adults. (APA, 1995) It also lists known causes of these disorders, statistics in terms of gender, age at onset, and prognosis in addition to results from some studies concerning the ideal treatment methods. The manual utilizes a multi-axial classification system to formulate the diagnosis of psychiatric patients. The five dimensions for assessment are described in Table 1.

On the fifth axis, the psychiatrist evaluates the patients' level of functioning both at the present time and the highest level within the previous year. This helps the psychiatrist recognize how the above four axes are affecting the patients and what type of changes could be detected.

According to the DSM-IV psychiatric disorders are divided into 17 major categories, including: 1. disorders usually first diagnosed in Infancy, childhood, or adolescence. 2. delirium, dementia, and amnesic and other cognitive disorders. 3. mental disorders due to a general medical condition not elsewhere classified. 4. substance-related disorders. 5. schizophrenia and other psychotic disorders. 6. mood disorders. 7. anxiety disorders. 8. somatoform disorders. 9. factitious disorders. 10. dissociative disorders. 11. sexual and gender identity disorders. 12. eating disorders. 13. sleep disorders. 14. impulse-control disorders not elsewhere classified. 15. adjustment disorders. 16. personality disorders. 17. other conditions that may be a focus of clinical attention.

1.2 Epidemiology of psychiatric disorders

There are evidences of psychiatric disorders being a rising tendency and major health problem for the modern humanity. Studies reported that the prevalence of psychiatric disorders in the Dutch population: those aged under 65 in 1996 had experienced at least one psychiatric disorder in their lifetime, among them 23.3% within the preceding year. (Bijl, Ravelli, & van Zessen, 1998)

Axis	Mean	Description	Examples
Axis I	Clinical Disorders	what we typically think of as the diagnosis	depression, schizophrenia, social phobia
Axis II	Personality Disorders	more long-lasting symptoms and encompass the individual's way of interacting with the world	paranoid, antisocial, borderline personality disorders
Axis III	General Medical Conditions	play a role in the development, continuance, or exacerbation of Axis I and II disorders	brain injury, AIDS resulting in mental illness
Axis IV	Psychosocial and Environmental Problems	events in a person's life that can affect the disorders listed in Axis I and II	death of a loved one, starting a new job, entry to college, unemployment, or marriage
Axis V	Global Assessment of Functioning	the physician's rating of the patient's level of functioning	Global Assessment of Functioning Scale, Social and Occupational Functioning Assessment Scale, Global Assessment of Relational Functioning Scale

Table 1. Five dimensions for assessment of psychiatric disorders (DSM-IV)

The one-year prevalence of major psychiatric disorder, minor psychiatric disorder, and all psychiatric disorder were 1.37 %, 4.26 %, and 5.30 %, respectively in Taiwan in 2000. (Chien, Chou, Lin, Bih, & Chou, 2004)

1.2.1 Schizophrenia

A literature search of schizophrenia-related studies in 2002 showed that 1-year and lifetime prevalence and 1-year incidence of schizophrenia were: 0.34 %, 0.55 %, and 11.1/100,000 persons respectively. (Goldner, Hsu, Waraich, & Somers, 2002)

The cumulative prevalence of psychiatric disorders increased from 0.33 % to 0.64 % from 1996 to 2001 in Taiwan. (I. C. Chien et al., 2004) Another review research indicated that the median incidence was 15.2/100,000 persons and the median lifetime prevalence was 0.72% for schizophrenia. (McGrath et al. 2004)

1.2.2 Eating disorders

Eating disorders are psychiatric disorders, which represent a clinical symptoms to oral health professionals because of their unique psychological, medical, dental patterns, and their unique features. (Aranha et al., 2008) The average prevalence for anorexia nervosa and bulimia nervosa among young females are 0.3% and 1%, respectively. (Hoek, 2006) The incidence of anorexia nervosa in women between 15 and 19 years of age was 270 per 100,000 person-years. (Keski-Rahkonen et al., 2007)

1.2.3 Depression

A systematic review on the prevalence and incidence of perinatal depression from 1980 through 2004 was carried out. The combined prevalence estimates ranged from 6.5% to 12.9% for major and minor depression, and the major depression alone from 1.0 to 5.6% at different trimesters of pregnancy and months in the first postpartum year. (Gavin et al. 2005)

Eaton et al. pointed out that there has been a rise in the prevalence of depression among middle-aged females due to increasing chronicity in the U.S. between 1981 to 1993. (Eaton et al. 2007) There has been a rise in the prevalence of depression among middle-aged females in the U.S.. (Eaton, Kalaydjian, Scharfstein, Mezuk, & Ding, 2007)

1.2.4 Dementia and anxiety

The incidence of dementia was 9.2/1000 person-years in aged 65 or over in UK. (Copeland et al., 1992)

A systematic review of literature published between 1980 and 2004 reporting findings of the prevalence and incidence of anxiety disorders in the general population. This study demonstrated that 1-year and lifetime prevalence for total anxiety disorders was 10.6% and 16.6% respectively. (Somers, Goldner, Waraich, & Hsu, 2006)

1.3 The side effects and interaction of drugs for patients with psychiatric disorders

Antipsychotics

The atypical antipsychotics generally produce fewer extra pyramidal side effects than the conventional antipsychotic drugs. However, some atypical antipsychotic drug, such as Clozapine, has an associated risk of agranulocytosis and symptom of tremor at rest. (Jansen 1994; Kane et al. 1988) Clozapine also lead to hypersalivation because of the side effects of cholinergic agonists. (Arranz et al. 2000; Seeman 2004) Some atypical antipsychotics, such as Olanzapine, have not been reported to be associated with agranulocytosis, haemotoxicity, and pose minimal effect on prolactin levels. (Fulton et al. 1997) The atypical antipsychotics raise the risk of diabetes, and cardiovascular disease through antagonism at the H_1 , $5-HT_{2A}$, or $5-HT_{2C}$ receptors. The effect of elevation of serum leptin and insulin resistance also cause weight gain. (Lean and Pajonk 2003)

The atypical antipsychotics, such as clozapine, lead to hypersalivation because of the side effects of cholinergic agonists. (Arranz et al. 2000; Seeman 2004)

Anti-seizure drug

Sodium valproate, an anti-seizure drug used for treating patients with a bipolar disorder, can cause thrombocytopenia and reduce platelet aggregation response. (Jeavons et al. 1977) Tegretol has anticholinergic effects that can cause orthostatic hypotension; thus, the use of vasoconstrictors should be restricted. The use of erythromycin or clarithromycin should be avoided to prevent the risk of Tegretol poisoning. Tegretol poisoning in patients may result in oral ulcers, sore throat, Steven-Johnson syndrome, agranulocytosis, and aplastic anemia. (Dalby 1971; Kimura et al. 1974)

Antidepressant drugs

All tricyclic antidepressants have anticholinergic effects that can cause orthostatic hypotension. (Beckmann and Goodwin 1975; Szabadi and Tavernor 1999)

Selective serotonin reuptake inhibitors (SSRIs) can cause xerostomia. SSRIs also can lead to a reduced platelet aggregation because SSRIs can prevent the resorption of serotonin. (Thase et al. 2001)

Monoamine oxidase inhibitors (MAOIs) have anticholinergic effects that cause orthostatic hypotension. MAOIs also interact with several drugs, thereby causing hypertensive crisis. (El-Ganzouri et al. 1985; Yamada and Yasuhara 2004)

Diseases	Year	Area	Prevalence/accidence	Population
Psychiatric disorders	1996	Dutch	Lifetime prevalence 23.3%	Aged <65
	2000	Taiwan	1-year prevalence: 5.30 %	Population in National Health Insurance
Schizophrenia	2001	System review 1965-2001	1-year incidence: 0.015%	
	2002	Taiwan	1-year incidence: 0.011%	Population in National Health Insurance
Eating disorders	1999	System review 1980-1999	Lifetime prevalence: 0.3 % (anorexia nervosa) Lifetime prevalence: 1% (bulimia nervosa)	Young females
	2004	Finland	Lifetime prevalence: 2.2%; 1-year incidence: 0.27% (anorexia nervosa)	Women aged 15 -19 years
Depression	2004	System review 1980-2004	Prevalence: 12.9% Prevalence: 5.6% (major)	Pregnancy and post amp women
Dementia	1992	British	Lifetime prevalence: 4.3%	Aged >64 years
Anxiety disorders	2006	System review 1980-2004	1-year prevalence: 10.6%; lifetime prevalence: 16.6%.	

(Bijl, et al., 1998; I.-C. Chien, et al., 2004; I. C. Chien, et al., 2004; Copeland, et al., 1992; Gavin, et al., 2005; Goldner, et al., 2002; Hoek, 2006; Keski-Rahkonen, et al., 2007; McGrath, Saha, Chant, & Welham, 2008; McGrath, et al., 2004; Somers, et al., 2006)

Table 2. The prevalence / incidence of psychiatric disorders

Mood stabilizer drugs

Lithium salt leads to polyuria, which often results in dry mouth. The combination of non-steroidal anti-inflammatory drugs (NSAID) increases blood levels of lithium, which may lead to an lithium toxicity.(Corena-McLeod et al. 2008)

Classification	Side effects	Interaction
Antipsychotics		CNS depressant
-Typical	Extrapyramidal symptoms - Acute dystonia - Pseudo parkinsonism - Akathisia - Tardive dyskinesia - Neuroleptic malignant syndrome	
-Atypical	Anticholinergic effect Agranulocytosis Tremor Drowsiness	
Antidepressant		Hypertensive crisis with tricyclic antidepressants
- Monoamine reuptake inhibitors	Orthostatic hypotension Anticholinergic effect	
- Monoamine oxidase inhibitors (MAOI)	Hyper stimulation Insomnia Anticholinergic effect Impotence or anorgasnia	
Mood stabilizer drugs		
-Lithium salt	Polyuria Tremor Weight gain Oedema	Plasma concentration with Erythromycin
Anxiolytic	Drowsiness Excessive somnolence Impaired intellectual function Reduced motor coordination Impaired memory and recall	CNS depressant

Table 3. The side effects and interaction of drugs for patients with psychiatric disorders

1.4 Social stigma of psychiatric disorders

The stigma on people with psychiatric disorders is extensive among this population. Such stigma varies in nature and frequency in different psychiatric disorders. The stigma harms the self-esteem of many people who have serious psychiatric disorders. Negative opinions indiscriminately are likely to overstress the social handicaps together with psychiatric disorders. (Crisp, Gelder, Rix, Meltzer, & Rowlands, 2000) Corrigan et al. reported that two factors that may influence whether a person who might benefit from mental health treatment, such are public stigma and self-stigma. (Corrigan et al. 2003)

1.5 Psychiatric disorders and health-related quality of life (QoL)

Most people with psychiatric disorders can obtain the necessary care services to live normally in the community. They use the outreach support skills provided by institutions to help them in the transition to community living. (A. A. Pinkney, 1991) A poor mental health could result in a poor perception of health-related QoL. A patient-centered, routine assessment of QoL provides a supplemental measure that may help improve the understanding of the effects of psychiatric disease on an individual's life. (Llewellyn, Warnakulasuriya, Llewellyn, & Warnakulasuriya, 2003) Health-related QoL is an important outcome index of mental health. Therefore, a rehabilitation protocol that takes into account the financial situation, family support, and social functioning of patients is essential. (Chan et al., 2007)

2. The oral health status and problems of people with psychiatric disorders

2.1 Prevalence and incidence of oral health problems in patients with psychiatric disorders

The oral health status of people with psychiatric disorders is not desirable in general, but there are also significant variations indicating potential of prevention and improvement. The results of several relevant studies are summarized in table 4.

2.2 Factors associated with poor oral health status among people with psychiatric disorders

There are many factors associated with poor oral health status among people with psychiatric disorders. Gender differences between oral health and psychiatric disorder have been reported. (G. M. Eugenio Velasco, Angel Martinez-Sahuquillo, Vicente Rios, Juan Lacalle, Pedro BulloAn,, 1997) Factors such as age and the length of stay in institutions seem to be associated with the oral health of psychiatric patients. (G. M. Eugenio Velasco, Angel Martinez-Sahuquillo, Vicente Rios, Juan Lacalle, Pedro BulloAn,, 1997; Italo Francesco Angelillo, 1995; Kumar, Chandu, Shafiulla, & Kumar, 2006; Rekha et al., 2002; Tang et al., 2004) Researches also reported that severity of psychiatric disorders was related with oral health. (Italo Francesco Angelillo, 1995; Kumar et al., 2006; Thomas, Lavrentzou, Karouzos, & Kontis, 1996) The typical antipsychotics, which are part of a wide array of medications used for schizophrenia treatment, may cause manifest hypo-salivation by blocking the parasympathetic stimulation of the salivary glands. This is likely to intensify the progression of dental diseases. (Friedlander & Marder, 2002; Thomas et al., 1996) Xerostomia is a significant risk factor which influences the oral health of patients with psychiatric disorders. (Hede, 1995; Locker, 2003)

Country / Area	Samples	CPI*	Oral health Index	Dental treatment needs
Italy (Angelillo et al. 1995)	297, Mean age 55.1	0: 0.9% 1: 4.6% 2: 10.1% 3: 19.6% 4: 64.8%	DMFT# 15.5 Exp@: 100% Ed \$: 11.1%	Ext%:80.7%; Con&: 58.3%
South Africa (Rudolph and Chikte 1993)	240 males	0:0 4: 17%	Exp: 88% DMFT: 7.92	Con: All age groups
Spain (Velasco et al. 1997)	565, Mean age 58.0		DMFT: 24.9	
Spain (Velasco and Bullon 1999)	565	0: 8.5% 1:14.2%, 2:43.8% 3:24.6% 4:8.9%	Ed: 31.7%	
India (Kenkre and Spadigam 2000)	128, Mean age 25		Exp: 88% Ed: 3.9%	Con: 88%
UK (Lewis et al. 2001)	326, Mean age 71.1		DMFT:19.1 Ed: 63%	
India (Rekha et al. 2002)			Exp: 75.5%	
Israel (Ramon et al. 2003)	431, Mean age 54.0		DMFT: 26.7	
HK (Tang et al. 2004)	91, Mean age 44.7	4: 28.2%	DMFT>15	Con: 78.8%, Ext: 54%
Israel (Zusman et al. 2010)	254		Exp: 98.4% DMFT: 23.8 Ed: 26%	

* Community Periodontal Index

No. of teeth with decay, missing, or filling

@ Caries experience

\$ Edentulism

% Extraction

& Conservative treatment

Table 4. The oral health status of people with psychiatric disorders

3. Oral health care for people with psychiatric disorders

Oral health programs for people with psychiatric disorders are rare. Researchers have demonstrated the feasibility and efficacy of the combination of mechanical toothbrush, dental instructions and reminders which resulted in additional improvements for the oral health of people with psychiatric disorders. (Almomani et al., 2006) Studies also showed that people with psychiatric disorders receiving motivational interviewing (MI) had significantly better oral health than those receiving oral health education only. Furthermore MI has been shown to be effective for enhancing short-term oral health behavior change for people with severe mental illness. (Almomani, Williams, Catley, & Brown, 2009)

3.1 Barriers to oral health care for people with psychiatric disorders

Most oral health professionals have limited experiences in providing care for people with psychiatric disorders. (Waldman, Perlman, Waldman, & Perlman, 2002) The barriers exist in organization and financing of the care needed as well as in proposing strategies to enhance the delivery of appropriate treatment. (Ridgely, Goldman, & Willenbring, 1990)

General health services are widely utilized by people with psychiatric disorders under psychiatric care in long-term care institutions. However, oral health services remain underutilized, and there is a high prevalence of perceived barriers to receiving dental care in this population. (Dickerson et al., 2003)

3.2 Special requirements of oral health care delivery system for people with psychiatric disorders

Psychiatric disorders have psychopathological characteristics. In particular, there are specific oral health care requirements and management models for patients with psychiatric disorders. (Clark, 1992) These major requirements for people with psychiatric disorders include prophylaxes, calculus removal, and periodontal therapy Patients' dental treatment needs vary depending on several demographic factors, length of stay in institutions and the patient's psychiatric diagnosis. (Barnes et al. 1988)

4. Implications for the oral health policies

Since the psychiatric health care system has not yet been fully established in some countries, patients with psychiatric disorders there are not likely to obtain the necessary care in their communities. Individuals suffering from severe psychiatric disorders may be able to attain a more dignified life if they could avail themselves of personalized, private, and high quality care services in pertinent institutions. To stay in long-term care institutions is, perhaps, the alternative solution to living in the community. Therefore, the reform of institutions, particularly for the provision of relevant services and continued care, can compensate for a little imparity of dental care for these patients, and is a more practical solution than de-institutionalization of patients with psychiatric disorders. (Chu et al. 2010)

Being not life-threatening in most cases, oral diseases have obvious impacts on patients' quality of life. However, patients with psychiatric disorders also suffer from stigma outside and inside themselves. They are vulnerable to oral diseases due to their limited ability/motivation to take care of themselves and also to the side effects of medications

prescribed for treating their psychiatric disorders. Despite of the increased needs for dental prophylaxes and care, oral health care programs for psychiatric patients are rare, underutilized and receiving less attention from the public sectors.

In addition to boost oral health services provided for patients with psychiatric disorders in the community, it is important for the health policy-makers to support oral health promotion programs. The programs will aim at the patients and their families/carers to empower their belief that oral health is essential and attainable through their own efforts. The government should initiate on-the-job education programs for the dental and psychiatric professionals to enhance their capability and motivation to provide proper services to their psychiatric patients' oral health through integrated efforts. Oral health is an essential part of general health, and it is certainly true for patients with psychiatric disorders.

5. References

- A. A. Pinkney, G. J. G., H. G. Lafave,. (1991). Quality of life after psychiatric rehabilitation: the clients' perspective. *Acta Psychiatrica Scandinavica*, 83(2), 86-91.
- Almomani, F., Brown, C., Williams, K. B., Almomani, F., Brown, C., & Williams, K. B. (2006). The effect of an oral health promotion program for people with psychiatric disabilities. *Psychiatric Rehabilitation Journal*, 29(4), 274-281.
- Almomani, F., Williams, K., Catley, D., & Brown, C. (2009). Effects of an oral health promotion program in people with mental illness. *Journal of Dental Research*, 88(7), 648-652.
- APA. (1995). Diagnostic and statistical manual of mental disorders, 4th edn. . In W. DC (Ed.): American Psychiatric Press.
- Barnes, G. P., Allen, E. H., Parker, W. A., Lyon, T. C., Armentrout, W., & Cole, J. S. (1988). Dental treatment needs among hospitalized adult mental patients. *Special Care in Dentistry*, 8(4), 173-177.
- Bijl, R. V., Ravelli, A., & van Zessen, G. (1998). Prevalence of psychiatric disorder in the general population: results of the Netherlands Mental Health Survey and Incidence Study (NEMESIS). *Social Psychiatry and Psychiatric Epidemiology*, 33(12), 587-595.
- Chan, S. W., Hsiung, P. C., Thompson, D. R., Chen, S. C., Hwu, H. G., Chan, S. W.-c., et al. (2007). Health-related quality of life of Chinese people with schizophrenia in Hong Kong and Taipei: a cross-sectional analysis. *Research in Nursing & Health*, 30(3), 261-269.
- Chien, I.-C., Chou, Y.-J., Lin, C.-H., Bih, S.-H., & Chou, P. (2004). Prevalence of Psychiatric Disorders Among National Health Insurance Enrollees in Taiwan. *Psychiatr Serv*, 55(6), 691-697.
- Chien, I. C., Chou, Y. J., Lin, C. H., Bih, S. H., Chou, P., Chang, H. J., et al. (2004). Prevalence and incidence of schizophrenia among national health insurance enrollees in Taiwan, 1996-2001. *Psychiatry & Clinical Neurosciences*, 58(6), 611-618.
- Chu, K.-Y., Yang, N.-P., Chou, P., Chiu, H.-J., & Chi, L.-Y. (2010). Factors associated with dental caries among institutionalized residents with schizophrenia in Taiwan: a cross-sectional study. *BMC Public Health*, 10(1), 482.

- Clark, D. B. (1992). Dental care for the psychiatric patient: chronic schizophrenia. *J Can Dent Assoc*, 58(11), 912-916,919-920.
- Copeland, J. R., Davidson, I. A., Dewey, M. E., Gilmore, C., Larkin, B. A., McWilliam, C., et al. (1992). Alzheimer's disease, other dementias, depression and pseudodementia: prevalence, incidence and three-year outcome in Liverpool. *The British Journal of Psychiatry*, 161(2), 230-239.
- Corrigan, P., Thompson, V., Lambert, D., Sangster, Y., Noel, J. G., & Campbell, J. (2003). Perceptions of Discrimination Among Persons With Serious Mental Illness. *Psychiatr Serv*, 54(8), 1105-1110.
- Crisp, A. H., Gelder, M. G., Rix, S., Meltzer, H. I., & Rowlands, O. J. (2000). Stigmatisation of people with mental illnesses. *The British Journal of Psychiatry*, 177(1), 4-7.
- Dickerson, F. B., McNary, S. W., Brown, C. H., Kreyenbuhl, J., Goldberg, R. W., Dixon, L. B., et al. (2003). Somatic healthcare utilization among adults with serious mental illness who are receiving community psychiatric services. *Medical Care*, 41(4), 560-570.
- Eaton, W. W., Kalaydjian, A., Scharfstein, D. O., Mezuk, B., & Ding, Y. (2007). Prevalence and incidence of depressive disorder: the Baltimore ECA follow-up, 1981-2004. *Acta Psychiatrica Scandinavica*, 116(3), 182-188.
- Eugenio Velasco, G. M., Angel Martinez-Sahuquillo, Vicente Rios, Juan Lacalle, Pedro BulloAn,. (1997). Dental health among institutionalized psychiatric patients in Spain. *Special Care in Dentistry*, 17(6), 203-206.
- Eugenio Velasco, P. B. (1999). Periodontal status and treatment needs among Spanish hospitalized psychiatric patients. *Special Care in Dentistry*, 19(6), 254-258.
- Friedlander, A. H., & Marder, S. R. (2002). The psychopathology, medical management and dental implications of schizophrenia. *J Am Dent Assoc*, 133(5), 603-610.
- Gavin, N. I., Gaynes, B. N., Lohr, K. N., Meltzer-Brody, S., Gartlehner, G., & Swinson, T. (2005). Perinatal Depression: A Systematic Review of Prevalence and Incidence. *Obstetrics & Gynecology*, 106(5, Part 1), 1071-1083
10.1097/1001.AOG.0000183597.0000131630.db.
- Goldner, E. M., Hsu, L., Waraich, P., & Somers, J. M. (2002). Prevalence and Incidence Studies of Schizophrenic Disorders:A Systematic Review of the Literature. *Can J Psychiatry* 47, 838-843.
- Hede, B. (1995). Oral health in Danish hospitalized psychiatric patients. *Community Dentistry & Oral Epidemiology*, 23(1), 44-48.
- Hoek, H. W. (2006). Incidence, prevalence and mortality of anorexia nervosa and other eating disorders. *Current Opinion in Psychiatry*, 19(4), 389-394
310.1097/1001.yco.0000228759.0000295237.0000228778.
- Italo Francesco Angelillo, C. G. A. N., Maria Pavia, Pasquale Fazio, Maurizio Puca, Amato Amati,. (1995). Dental health and treatment needs in institutionalized psychiatric patients in Italy. *Community Dentistry and Oral Epidemiology*, 23(6), 360-364.
- Kenkre, A. M., & Spadigam, A. E. (2000). Oral health and treatment needs in institutionalized psychiatric patients in India. *Indian Journal of Dental Research*, 11(1), 5-11.

- Keski-Rahkonen, A., Hoek, H. W., Susser, E. S., Linna, M. S., Sihvola, E., Raevuori, A., et al. (2007). Epidemiology and Course of Anorexia Nervosa in the Community. *Am J Psychiatry*, 164(8), 1259-1265.
- Kumar, M., Chandu, G. N., Shafiulla, M. D., & Kumar, M. (2006). Oral health status and treatment needs in institutionalized psychiatric patients: one year descriptive cross sectional study. *Indian Journal of Dental Research*, 17(4), 171-177.
- Lewis, S., Jagger, R. G., & Treasure, E. (2001). The oral health of psychiatric in-patients in South Wales. *Special Care in Dentistry*, 21(5), 182-186.
- Llewellyn, C. D., Warnakulasuriya, S., Llewellyn, C. D., & Warnakulasuriya, S. (2003). The impact of stomatological disease on oral health-related quality of life. *European Journal of Oral Sciences*, 111(4), 297-304.
- Locker, D. (2003). Dental status, xerostomia and the oral health-related quality of life of an elderly institutionalized population. *Special Care in Dentistry*, 23(3), 86-93.
- McGrath, J., Saha, S., Chant, D., & Welham, J. (2008). Schizophrenia: A Concise Overview of Incidence, Prevalence, and Mortality. *Epidemiologic Reviews*, 30(1), 67-76.
- McGrath, J., Saha, S., Welham, J., El Saadi, O., MacCauley, C., & Chant, D. (2004). A systematic review of the incidence of schizophrenia: the distribution of rates and the influence of sex, urbanicity, migrant status and methodology. *BMC Medicine*, 2(1), 13.
- Ramon, T., Grinshpoon, A., Zusman, S. P., & Weizman, A. (2003). Oral health and treatment needs of institutionalized chronic psychiatric patients in Israel. *European Psychiatry: the Journal of the Association of European Psychiatrists*, 18(3), 101-105.
- Rekha, R., Hiremath, S. S., & Bharath, S. (2002). Oral health status and treatment requirements of hospitalized psychiatric patients in Bangalore city: a comparative study. *Journal of the Indian Society of Pedodontics & Preventive Dentistry*, 20(2), 63-67.
- Ridgely, M. S., Goldman, H. H., & Willenbring, M. (1990). Barriers to the Care of Persons With Dual Diagnoses: Organizational and Financing Issues. *Schizophr Bull*, 16(1), 123-132.
- Rudolph, M. J., & Chikte, U. M. (1993). Dental caries experience and periodontal disease in institutionalised male psychiatric patients. *Journal of the Dental Association of South Africa*, 48(8), 451-454.
- Sandanger, I., Nygård, J. F., Ingebrigtsen, G., Sørensen, T., & Dalgard, O. S. (1999). Prevalence, incidence and age at onset of psychiatric disorders in Norway. *Social Psychiatry and Psychiatric Epidemiology*, 34(11), 570-579.
- Somers, J. M., Goldner, E. M., Waraich, P., & Hsu, L. (2006). Prevalence and Incidence Studies of Anxiety Disorders: A Systematic Review of the Literature. *Can J Psychiatry* 51, 100-113.
- Tang, W. K., Sun, F. C. S., Ungvari, G. S., & O'Donnell, D. (2004). Oral Health of Psychiatric In-Patients in Hong Kong. *International Journal of Social Psychiatry*, 50(2), 186-191.
- Thomas, A., Lavrentzou, E., Karouzos, C., & Kontis, C. (1996). Factors which influence the oral condition of chronic schizophrenia patients. *Special Care in Dentistry*, 16(2), 84-86.

Waldman, H. B., Perlman, S. P., Waldman, H. B., & Perlman, S. P. (2002). What about dental care for people with mental retardation? A commentary. *Journal of the American College of Dentists*, 69(2), 35-38.

Zusman, S. P., Ponizovsky, A. M., Dekel, D., Masarwa, A.-e.-S., Ramon, T., Natapov, L., et al. (2010). An assessment of the dental health of chronic institutionalized patients with psychiatric disease in Israel. *Special Care in Dentistry*, 30(1), 18-22.

IntechOpen

IntechOpen



**Oral Health Care - Prosthodontics, Periodontology, Biology,
Research and Systemic Conditions**

Edited by Prof. Mandeep Viridi

ISBN 978-953-51-0040-9

Hard cover, 372 pages

Publisher InTech

Published online 29, February, 2012

Published in print edition February, 2012

Geriatric dentistry, or gerodontics, is the branch of dental care dealing with older adults involving the diagnosis, prevention, and treatment of problems associated with normal aging and age-related diseases as part of an interdisciplinary team with other healthcare professionals. Prosthodontics is the dental specialty pertaining to the diagnosis, treatment planning, rehabilitation, and maintenance of the oral function, comfort, appearance, and health of patients with clinical conditions associated with missing or deficient teeth and/or oral and maxillofacial tissues using biocompatible materials. Periodontology, or Periodontics, is the specialty of oral healthcare that concerns supporting structures of teeth, diseases, and conditions that affect them. The supporting tissues are known as the periodontium, which includes the gingiva (gums), alveolar bone, cementum, and the periodontal ligament. Oral biology deals with the microbiota and their interaction within the oral region. Research in oral health and systemic conditions concerns the effect of various systemic conditions on the oral cavity and conversely helps to diagnose various systemic conditions.

How to reference

In order to correctly reference this scholarly work, feel free to copy and paste the following:

Lin-Yang Chi and Kuan-Yu Chu (2012). Oral Health of People with Psychiatric Disorders, Oral Health Care - Prosthodontics, Periodontology, Biology, Research and Systemic Conditions, Prof. Mandeep Viridi (Ed.), ISBN: 978-953-51-0040-9, InTech, Available from: <http://www.intechopen.com/books/oral-health-care-prosthodontics-periodontology-biology-research-and-systemic-conditions/oral-health-of-patients-with-psychiatric-disorders>

INTECH
open science | open minds

InTech Europe

University Campus STeP Ri
Slavka Krautzeka 83/A
51000 Rijeka, Croatia
Phone: +385 (51) 770 447
Fax: +385 (51) 686 166
www.intechopen.com

InTech China

Unit 405, Office Block, Hotel Equatorial Shanghai
No.65, Yan An Road (West), Shanghai, 200040, China
中国上海市延安西路65号上海国际贵都大饭店办公楼405单元
Phone: +86-21-62489820
Fax: +86-21-62489821

© 2012 The Author(s). Licensee IntechOpen. This is an open access article distributed under the terms of the [Creative Commons Attribution 3.0 License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

IntechOpen

IntechOpen