Original article

Oral Health Status and Oral Health-Related Quality of Life in Italian Deinstitutionalized Psychiatric Patients

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Abstract

The aim of this study is to investigate the oral health status and Oral Health-Related Quality of Life (OHRQoL, measured with OHIP-14) in psychiatric patients assisted by the unique Italian mental health care system, in accordance to regulatory Law 180/78. Materials and Methods: Demographic and medical variables were retrieved from institutional medical records. General health and oral health variables, oral health-related behavior and last dental contact were recorded. Clinical evaluation was performed on each patient. For oral health data collection, a standardized medical form was used. Result: The study involved an overall number of 67 patients. Primary diagnosis of mental illness was at mean age of 29 years. The average number of teeth per patient was 25.45 ±6,55. The overall mean value of caries experience was 9.1 decayed, missing and/or filled teeth (DMFT Index). Among affected patients (60%, n=33) the mean value of DMFT for all age groups was 11.3 (range 2-27). The present study highlighted a direct linear relationship between caries experience and OHRQoL. As the caries level increased, pain, functional and psychological discomfort scores increased. Discussion and Conclusion: The overall caries experience value of 9.1 DMFT was lower than that reported in existing literature, which is usually related to traditionally institutionalized psychiatric patients, and most important of all, data on access to dental care is fairly good.

These results, although derived from a pilot study on a limited sample, suggest that, where a psychosocial rehabilitative program is set out for psychiatric patients, as in the case of the Italian experience, the program can also determine an improvement in oral health status. It is important that programs for oral health promotion are developed in collaboration with mental health services and social measures are patient-centered as an integral part of the individual's rehabilitation program. *Clin Ter 2017; 168(2):e77-83. doi: 10.7417/CT.2017.1987*

Key words: *Oral health status, Oral Health-Related Quality of Life, psychiatric patients, Basaglia Law*

Introduction

Mental disability is not a risk factor for carious disease *per se*. On the other hand, this condition affects individual's daily self-care abilities, including oral health care and prevention. In these patients the prevalence of oral problems is therefore higher than in the general population (1, 2).

Several oral health risk factors have been described in patients with severe psychiatric disorders, such as overall health-care negligence, side effects of psychotropic drugs (xerostomia), unhealthy diet, smoking, lack of dental services attendance, financial difficulties, lack of family and / or community support networks, not least the social stigma which alludes to mental illness (3, 4).

Almost all oral health studies in psychiatric patients were conducted on in-patients in psychiatric hospitals, and all reported overall poor oral health, unmet treatment needs and / or unavailability of oral health services for these individuals (5-13).

Italian psychiatric care was heavily reformed by Law 180/ 1978, the so-called 'Basaglia Law' (14), which bears the name of Franco Basaglia, the renowned psychiatrist who called for the closure of all Italian asylums during the 1960s and 1970s. Starting from the 1980s, Italian psychiatric hospitals have been closed down and the psychiatric care system has moved gradually to a welfare system based on a wide network of community-related services pertaining to the Department of Mental Health (DSM), in which patients are meant to gain more and more autonomy in self-management. Although the new framework faced major fulfilment difficulties and was criticized by politicians and psychiatrists, nowadays Italy is the only country in the world that has achieved the complete closure of psychiatric hospitals (15). Among the most significant features of this reform was the opening of residential therapeutic communities, managed by deinstitutionalized patients and supervised by the DSM, which have been designed to provide long-term care, aimed at social reintegration of patients with severe mental disorders. In this context, multidisciplinary custom-made health promotion programs are an integral part of the rehabilitation plan. Specifically, oral health promotion and regular dental access should be planned for these patients (1-7).

The aim of this study is to investigate the Oral Health Status and Oral Health-Related Quality of Life in psychiatric patients assisted by Italian unique mental health care system, responding to regulatory Law 180/78.

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Materials and methods

Population

This study was conducted on a group of adult deinstitutionalized psychiatric patients, resident in high protection therapeutic communities (24/7 assistance), managed by the Department of Mental Health (DSM) of the ASL "RM A" operating in the area of Rome.

Data Collection

The survey was conducted in psychiatric territorial structures by a team of trained and calibrated examiners.

Demographic and medical variables were retrieved from institutional medical records: primary psychiatric diagnosis (according to the International Classification of Diseases 10th Revision: ICD-10), number of prescribed drugs at the time of examination, age at diagnosis, length of diagnosis.

General variables were: age, gender, level of education; employment status.

Oral health related behavior (i.e. regular tooth-brushing with fluoride toothpaste, daily food and beverage intake, tobacco and alcohol/drugs usage) and last dental contact were collected by means of a specific administered questionnaire.

Oral examination

Clinical evaluation was performed on each patient using a disposable mirror, periodontal probe type Williams and cotton rolls to dry the tooth surfaces, with the patient lying under a good source of light (natural light and fluorescent lamp) and without the use of radiographs.

Patients were sitting on a regular chair in the structures' infirmary.

For oral health data collection, a standardized medical form was used which considered:
– Dental health status assessment following the International Caries Detection and Assessment System II- ICDAS II (16,17,18); these data were used to calculate caries experience index (Decayed, Missing, Filled Teeth Index – DMFT) with established decay (D3) diagnostic threshold.
– Periodontal health status assessment data were used to calculate the W.H.O. Community Periodontal Index (CPI) (19,20,21).

Oral Health-Related Quality of Life (OHRQoL)

The Italian version of the Short Oral Health Impact Profile-14 (IOHIP-14) (22) questionnaire was administered to assess the Oral Health-Related Quality of Life (OHRQoL), in order to highlight patients' subjective perception, by analyzing indicators such as pain, functional, social and psychological discomfort in relation to oral health (23, 24).

Statistical analysis

Statistical analysis was performed using SPSS version 22 software on PC. All variables of the protocol have been described by estimating means, medians, standard deviations and confidence intervals of 95%. To evaluate the differences observed between the medians in the various groups and subgroups nonparametric tests were used - Mann-Whitney, for two independent samples, and Kruskall-Wallis for more than two samples. An analysis of bivariate correlation using Spearman correlation coefficient was also carried out in order to evaluate the association between DMFT and the data obtained from the questionnaire OHIP-14.

Ethical Statement

The study received approval from the ethics committee of the ASL RM A (committee of protection of the persons). The study was explained and patients' written informed consent (and from their legal guardians for persons under guardianship) was obtained.

Results

General information

The study involved an overall number of 67 patients, 37 males and 30 females, resident in 9 high protection therapeutic communities. Mean age of the respondents was 39.7 (Tab. 1).

Primary diagnosis of mental illness was at mean age of 29 years.

The sample was represented by: 70% Schizophrenia, 20% Schizoaffective Disorder of Personality, 10% Borderline Personality Disorder.

The average number of daily medicines taken was 4. In according with therapeutic protocol, patients receiving a combination of psychotropic medications; antidepressant (like citalopram, escitalopram), antipsychotics (such as haloperidol, risperidone, olanzapine, ziprasidone, aripiprazole, paliperidone) and anticonvulsants (like carbamazepine, acid valproate).

With regard to education level, 46.3% of patients did not provide information, 17.9% had a primary/middle education, 13.4% high school, 10.4% higher diploma, 7.5% attended university classes for over one year and 4.5% were university graduates (Tab 2).

Table 1. Study sample characteristics.

Age Groups	n	Male	Females	Mean Age
20-29	14	7	7	23.9
30-39	21	10	11	35.4
40-49	18	13	5	44.7
50-59	14	7	7	55.4
Total	67	37	30	39.7

Table 2. Education; Employment; Oral Health related behavior and Dental contact

	Patients number	%
Level of education		
Elementary school	12	17%
Middle school	9	13%
High school	7	10%
Degree	3	4%
University for over 1 year	5	7%
Do not know / not sure / do not mean	31	46%
Employment status		
Unemployed	20	29%
Student	4	6%
Worker	11	9%
self-employed	5	7%
Not registered	31	46%
Oral health-related at-risk behavior		
Toothbrushing with F toothpaste < 2/day	32	47.8%
Food and beverages intakes > 4/day	18	40.9%
Tobacco smoking	41	61.9%
Alcohol/drugs consumption	14	20.9%
Last dental contact		
Within the previous 12 months	21	31.3%
More than 1 year but less than 2 years	8	11.9%
More than 2 year but less than 5 years	8	11.9%
More than 5 years	7	10.4%
Never examined previously	2	3.0%
He does not remember or refuses to say	21	31.3%

With regard to employment status, 31 patients (46.3%) did not give information, 20 patients (29.9%) were unemployed, 6 employees (9.0%), 5 self-employed (7.5%), 4 students (6.0%) and one (1.5%) was unable to work (Tab. 2).

Oral health behavior

1.3% of patients reported paying for a dental visit within the last 12 months, mostly for emergency care (Tab. 2).

Regular tooth brushing with fluoride toothpaste was reported by 52.2% of participants. 40.9% reported more than 4 food and beverages daily intakes (including small quantities and excluding unsweetened drinks). 61.9% of patients reported smoking tobacco and 20.9% alcohol/drugs consumption (Tab. 2).

Oral examination

At the intraoral examination 1 patient was edentulous. The average number of teeth per patient was 25.45 ±6,55. Clinical data for caries experience was missing for 6 subjects.

The overall mean value of DMFT was 9.1 (D=1.7, M=4.1, F=3.1). With regard to age groups, for the 20-29 year group DMFT was 2.2 (D=0.8, M=0.3, F=1.1); in the 30-39 year group DMFT was 7.1 (D=1.5, M=1.6, F=4.0); in the 40-49 years group DMFT was 10.0 (D=2.2, M=5.4, F=2.4) and for the group 50-59 years DMFT was 16.9 (D=2.8, M=9.8, F=4.3). The observed differences were statistically significant (p <0.001) (Fig. 1).

Among affected patients (60%, n=33) the mean value of DMFT for all age groups was 11.3 (range 2-27). For the 20-29 year group the mean DMFT was 5.3 (range 2-11); for the group of 30-39 was 9.5 (range 3-18); for the group of 40-49 years was 9.2 (range 3-21) and for the group 50-59 was 17,00 (range 6-27) (Fig. 2).

Caries Experience by Medical History Variables

No statistically significant difference was assessed in the evaluation of statistically significant differences between
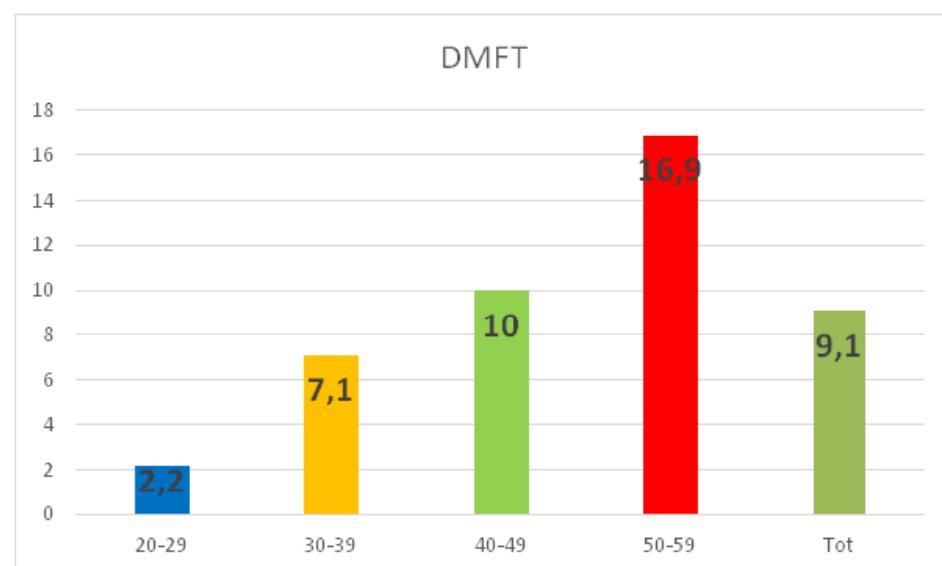

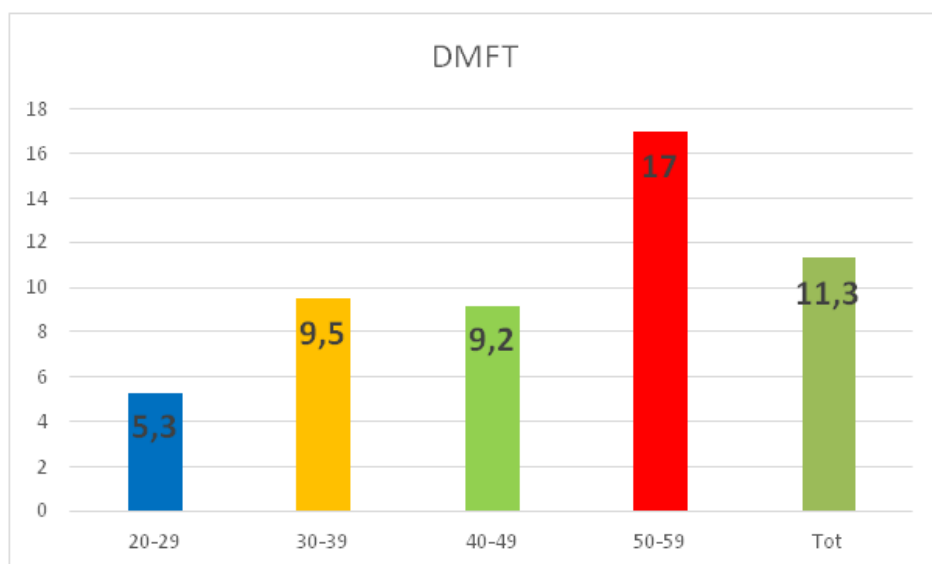Fig. 1. Mean Value DMFT, DT, MT e FT induvial by age group.

Fig. 2. Caries experience affected individuals by Age Values expressed as mean.

DMFT in relation to the type of referral care center, gender, smoking habits and alcohol consumption.

Among those who took up to 3 medicines / day (mean DMFT 7,00 range 0-25) and those who took more than 3 medicines (mean 14 range 4-28) the observed differences were statistically significant (p = 0.031).

DMFT mean in those who regularly used fluoride toothpaste was 8.00 (range 0-26) and in those who did not use it 15.00 (range 3-28), (p = 0.020).

Oral Health-Related Quality of Life

OHIP-14 questionnaire showed that in the last year, due to problems with teeth, mouth or dentures, 56.8% of patients (n. 38) had psychological problems (insecurity and embarrassment); 55.2% experienced functional discomfort (tension, food impacting or interfering with chewing); 59.7% experienced physical pain (sore spots in the mouth).

There was a direct linear relationship between DMFT and OHIP-14 results. As DMFT rose, pain, functional and psychological discomfort scores increased. In particular, as shown by Figures n. 2, 3 and 4, the correlation coefficient between DMFT and psychological distress was 0.286 (p = 0.039), between DMFT and pain was 0.418 (p = 0.001), and between DMFT and functional discomfort was 0.440 (p <0.001) (Fig. 2,3,4).

Periodontal health assessment (CPI)

We evaluated the Community Periodontal Index (CPI) in 56 patients. In 11 patients (16.4%) it was not possible to estimate the CPI. 1 was edentulous and 10 refused periodontal probing.

The mean CPI was 2,2 (Calculus). 5 patients (8.9%) had a healthy periodontium (CPI 0); 5 patients (8.9%) showed bleeding on probing (CPI=1); 20 patients (35.7%) had calculus (CPI=2); 22 patients (39.3%) had pockets of 4-5 mm (CPI=3) and 4 patients (7.1%) had pockets ≥ 6 mm (CPI=4) (Tab. 3).

No statistically significant differences were observed between the medians of the CPI in relation to the age, type
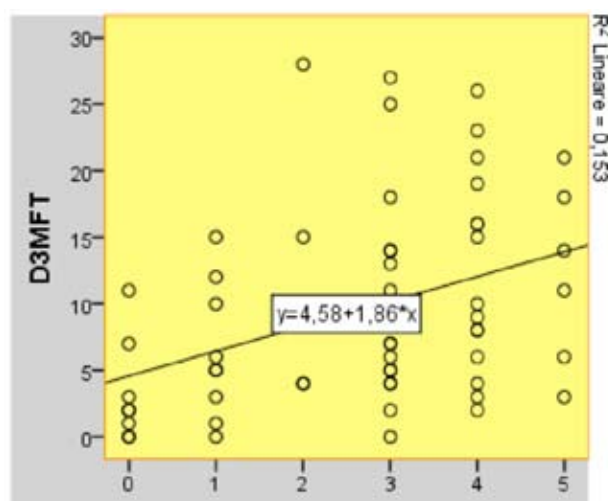

Fig. 3. Relationship between DMFT and OHIP-14 psychological distress
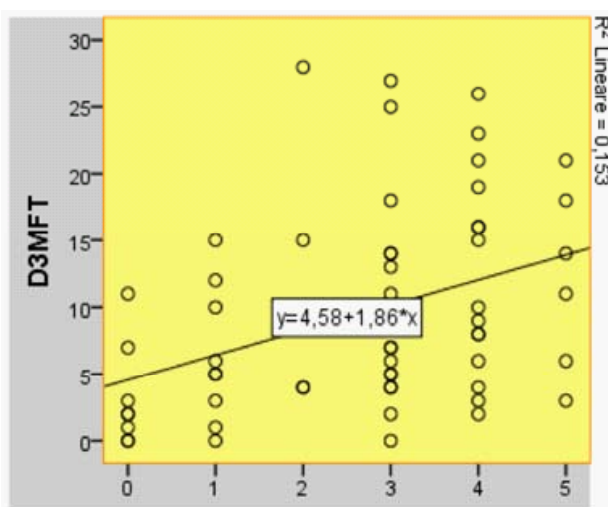

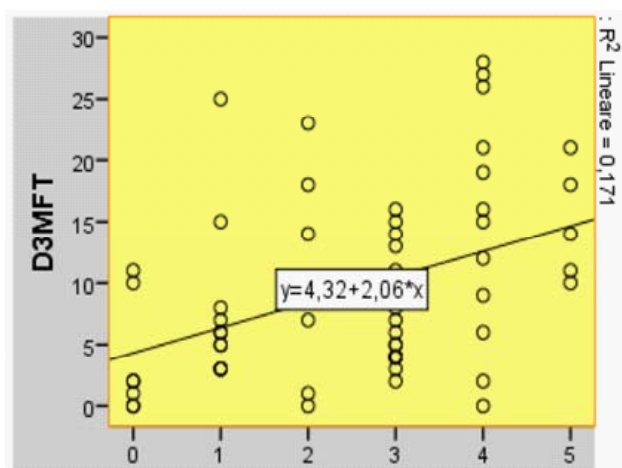Fig. 4. Relationship between DMFT and OHIP-14 oral pain

Fig. 5. relationship between DMFT and OHIP-14 functional discomfort

of care referral center, gender, smoking habit, alcohol consumption, use of fluoride toothpaste and the daily number of medicines taken.

Discussion

General health and oral health information

The general health and oral health information highlights an increased prevalence of specific oral health risk factors such as high daily intake of psychotropic drugs with a potential dry mouth effect interfering on salivary flow function (xerostomia), poor oral hygiene, tobacco smoking, an average daily amount of food and alcohol intake, results in line with other studies (5, 8-12, 25-30). In our study, 31.3% of participants reported having had a dental visit (mostly for emergency reasons) in the last twelve months, but this aspect differs from the results of previous literature (27, 28), where access to dental care was more limited.

The OHIP-14 questionnaire has also shown an incre-ased prevalence of psychological distress and functional discomfort due to oral problems, in fact more than 50% of the sample reported suffering. The analysis of variance suggests a correlation between the functional discomfort and pain associated with oral problems and the increase in the DMFT.

Many patients refused or were not able to answer questions about their educational level (31), employment status (31) and last dental visit (21); it is then likely that data on health-related behavior is probably greater than that recorded, since the patient's mental disability in itself may lead to forgetting or lying about some aspects and features of personal past or present history, making data partially untrue.

Oral health status (caries experience)

In relation to the existing literature, the overall average DMFT value of 9.1 was lower compared to that reported by the majority of studies but higher than those of Kumar et al. 2006 in the Indian population (0.9); the highest DMFT average in our study (16.9) was in the 50-59 age group, consistent with other studies reporting median ages above 40aa with high DMFT (4, 7-11, 24-28). The average values of the Decayed, Missing and Filled components of the caries experience index DMFT are overall lower than in the other studies. Still, in the age group 50-59 years the value of missing teeth M is 9.8, despite being lower than in other studies, it is still higher than the value of filled teeth F (4.3), highlighting an unmet need for conservative treatment: the prevalence of M indicates that extraction prevailed over conservative treatment or that patients turned belatedly to dental services; this aspect is in line with other studies. Caries experience increased with statistically significant values, with increasing age (20-29 DMFT=2.2, 50-59 DMFT=16.9) and number of daily medicines taken (< 3 drugs DMFT=7, > 3 drugs DMFT=15). As for the issue of edentulism, in our sample we found only one edentulous subject in the 50-59 years group. Our result is lower than that found in literature which reports a percentage of edentulism between 7% and 26% in the average age 52-52 (5, 8-12, 25-30).

Periodontal Status

Table 3. Periodontal health assessment (CPI) by age groups.

age groups	n	Percentage				
		Sound	BoP	Calculus	PD 4-5mm	PD ≥ 6 mm
20-29	9	11.1%	22.2%	44.4%	22.2%	0%
30-39	21	0%	9.5%	38.1%	42.9%	9.5%
40-49	15	13.3%	6.7%	13.3%	60.0%	6.7%
50-59	11	18.2%	0%	54.5%	18.2%	9.1%
Total	56	8.9%	8.9%	35.7%	39.3%	7.1%

The CPI values highlighted an overall poor periodontal health status, with high treatment needs, especially in the age group between 40 and 49 years.

In literature this data presents many discrepancies with values inconsistently ranging from code 0 to 4 in different studies:

CPI values	0	1	2	3	4
Present study	8.9%	8.9%	35.7%	39.3%	7.1%
Kumar et al.	1.8%	10.5%	41%	35%	8%
Lewis et al.	11%	42%	4.6%	10.6%	1%
Angelino et al.	1%	5%	10%	19.6%	63%

Oral Health-Related Quality of Life (OHIP-14)

The information collected shows that hosted patients are, in large measure, subjects with a long history of illness, serious problems of psychosocial functioning, limited working-function and low level of social support, starting from the absence or unavailability of families. All these variables often hinder the transition to a social reintegration of patients, also characterized by customized health (and oral health) promotion programs and regular general health and dental access, and this justifies the negative result (more than 50% of the patients say they have problems with your mouth or dentures or due) of the OHRQoL data.

Conclusions

Observing the collected data it is possible to affirm that the oral health status of observed psychiatric patients worsened significantly with increasing age, results consistent with other studies.

Oral health indices values (DMFT, CPI) were overall significantly lower than those reported in the literature, and most importantly, data on access to dental care was fairly good.

These results, although derived from a pilot study on a limited sample of patients, suggest that, where a therapeutic and rehabilitation program is set out for psychiatric patients, as in the case of the Italian experience, this can also determine an improvement in oral health status. This must be added to the fact that the current antipsychotic drugs and psychotherapeutic treatment and rehabilitation programs have revolutionized schizophrenia and the treatment of other psychoses in the last fifty years and that these changes have allowed many people with severe psychiatric disorders to resume a normal lifestyle.

However, there are still several factors that adversely affect the health and quality of life of the psychiatric patient. There must therefore be broad multidisciplinary cooperation to fulfill the needs of this disadvantaged population. It is important that programs for health promotion, developed in collaboration with mental health services and social measures, are patient-centered, as an integral part of patients' rehabilitation program. It is also essential that these people are given sufficient information and support to conduct a better life as independently as possible; in this context oral health promotion and health care team motivation must be established, in order to encourage oral hygiene, personal maintenance and regular dental care access for these patients.

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