

ORAL REHABILITATION AND QUALITY OF LIFE IN PSYCHIATRIC PATIENTS UNDERGOING DEINSTITUTIONALIZATION

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ABSTRACT

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Introduction Oral Health-Related Quality of Life (OHRQoL) measures can be used in mentally impaired groups to evaluate the consequences of oral health treatments. The objective of this study was to describe the impact of a prosthetic rehabilitation treatment on oral health-related quality of life in psychiatric adults in the process of deinstitutionalization.

Methodology We designed a quasi-experimental study to assess the OHRQoL of patients with mental disorders before and after prosthetic treatment on a sample of 165 institutionalized neuropsychiatric patients between 18 and 65 years of age ($x=50.24$ y.o.; $SD=7.85$). Before treatment, the validated Spanish version of OHIP-14 was filled out by each participant. Caries experience was assessed using the DMFT index. Sex, age, type of mental disorder, length of hospitalization, and permanence in a deinstitutionalization program were registered. The diagnoses of the psychiatric pathologies were transcribed from the medical records, following the DSM-IV criteria. The therapeutic intervention consisted in manufacturing and installing partial and complete removable acrylic prostheses, according to each patient's needs.

Results The sample had a DMFT index mean of 19.71 ($SD=5.54$). Missing teeth represented 86.86% of the total of the DMFT index. The OHIP-14 score before the intervention had a mean value of 26.06 ($SD=8.74$). After the prosthetic treatment, the OHIP-14 score had a mean value of 7.70 ($SD=3.96$). The statistical analysis revealed a significant difference between pre and post treatment intervention ($p=0.018$).

Conclusion This study showed that oral rehabilitation affected the oral health-related quality of life of patients with psychiatric disorders included in a social integration program.

KEYWORDS


Quality of Life; Deinstitutionalization; Mental Disorders; Oral Health; Prostheses and Implants

1. INTRODUCTION

People with mental disabilities frequently present poor oral health and require extensive dental treatment. Dental caries and periodontal disease are among the most common conditions affecting patients with psychiatric disorders [1]. Poor oral health can lead to pain, eating problems, sleeping disorders, and diminished self-esteem, all of which can affect an individual's quality of life. Oral health-related quality of life (OHRQoL) is a multidimensional

construct that has become a significant parameter to assess how oral health impacts daily function, well-being, and social interaction [1].

There is growing interest in quantifying the consequences of the disease that affect function, comfort, and the ability to carry out daily activities or the impact of health care services or the treatment of diseases. In general, dysfunction, discomfort, or disability measures can be used to assess the "burden of disease" or collectively the social impact [2].

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Oral Health-Related Quality of Life (OHRQoL) measures are beginning to be used in mentally impaired groups with examinations and clinical trials and studies evaluating the consequences of oral health component programs. They also play an essential role in identifying needs, selecting therapies, and monitoring patient progress [3].

When OHRQoL measurements are used to accompany traditional clinical indicators to measure states of the oral health component, it is more understandable to assess the impact of the disease or the measures applied on some dimensions. These dimensions, which include functional limitation, physical pain, psychological discomfort, physical, psychological, social, and opportunity disability, do not exempt the analysis of other domains such as oral functions, orofacial pain, psychosocial impact, and appearance, which must also be described [4]. One of the proposed instruments is the Oral Health Impact Profile (OHIP) that assesses perceptions of the social impact of diseases or disorders and oral well-being. This questionnaire can be an excellent option to identify the dimensions of Oral Health-related to quality of life as it is a reliable instrument sensitive to changes and with adequate consistency in cultural crossing [5]. The objective of this study was to describe the impact of a prosthetic rehabilitation treatment on oral health-related quality of life in psychiatric adults in the process of deinstitutionalization.

2. METHODS AND MATERIALS

We designed a quasi-experimental study to assess the OHRQoL of patients with mental disorders before and after prosthetic treatment.

The target population was a universe of 240 neuropsychiatric patients from a monovalent institution of the Public Health System under the Outpatient and Assisted Rehabilitation Program for Social Integration. The study was carried out in the Community Mental Health Centers (CSMC) of La Plata (Province of Buenos Aires), institutions dependent on a regional hospital. A random sample of adults of both sexes was selected through systematic sampling, and institutional records were used for integration.

We included patients between 18 and 65 years old, with a permanence under the program for a period of more than two months. We excluded from the study patients who were already carriers of prosthetic rehabilitation in any of its types; patients with general motor function disorders classified as severe; and patients who, due to the characteristics, symptoms, and associated disorders of the psychiatric pathology, the medical criteria considered the use of prostheses as a risk.

In recognition of mental illnesses people's rights [6], the study was carried out with the authorization of the organization's executive staff and the consent of the authorities, curators, or legal representatives, as well as the consent of the patients.

Before treatment, the validated Spanish version of OHIP-14 [7] was filled out by each participant as a tool to measure OHRQoL. OHIP-14 includes 14 questions to assess how oral health influences psychosocial and physical domains of a person's life. A Likert scale was used for answering as below: 0-never, 1-hardly ever, 2-occasionally, 3-reasonably often, 4-very often. The total score of OHIP-14 is between 0 and 56, with higher scores indicating lower OHRQoL.

In addition, intraoral examinations to evaluate dental conditions were performed by a trained examiner. The examinations were conducted with the participant seated and the examiner using a head flashlight, a WHO dental probe, and a mirror. The data that describe the baseline situation of the oral health component obtained by direct observation were recorded in an individual file, with a graphic diagram of the dental state. This diagram representing the teeth allowed the registration based on predetermined symbols of all the prevalent pathology and the therapeutic resolution carried out before the moment of observation, with the precision of the tooth and each of the five surfaces that compose it. Caries experience was assessed using the decayed, missing, and filled teeth (DMFT index), based on the WHO criteria modified without taking into account code WHO1 (initial lesions without cavitation) due to difficulties in managing patients and ensuring appropriate dryness of dental surfaces. Caries experience was evaluated according to cavitated lesions ('D' component of the index).

Also, during the baseline examination, we registered the sex, age, type of mental disorder, length of hospitalization, and permanence in a deinstitutionalization program, and we considered independent variables. The diagnoses of the psychiatric pathologies were transcribed from the medical records, following the DSM-IV criteria [8]

The therapeutic intervention consisted of the manufacture and installation of partial and complete removable acrylic prostheses, according to the needs of each patient. The same operator carried out the treatment. Six months after the prosthetic treatment was completed, the patients were asked to fill out the OHIP-14 for the second time.

2.1 Statistical analysis

The observations were presented for the statistical treatment as ordinal scale enumeration data. The arithmetic, median, and dispersion mean, standard deviation and interquartile range were estimated as central tendency data.

Confidence intervals were calculated to infer the data results obtained from the sample to the target population. The distribution of the DMFT and OHIP14 values were analyzed using Box Plot, Q-Q Plot diagrams, and the Anderson-Darling, Cramer-Von Mises, Shapiro-France, and Kolmogorov-Smirnov numerical tests. The students' t and z-test for DMFT were used as hypothesis test. Mann Whitney's non-parametric test was used for OHIP14.

3. RESULTS

The sample was made up of 165 adults ($x = 50.24$ years old; $SD = 7.85$) of both sexes with a diagnosis of psychiatric pathologies in the process of deinstitutionalization, 97 females ($x = 51.91$ y.o.; $SD = 7.44$) and 68 males ($x = 48.97$ y.o.; $SD = 8.04$), without significant differences between gender ($p = 0.185$). The time of institutionalization prior to entering the deinstitutionalization program was 16.40 years (10.96), range 1-62 years. A significant positive correlation was determined between the age of the patients and the years of permanence in the hospitalization system prior to admission to the program ($r = 0.456$; $p < 0.05$). Regarding the average length of stay within the rehabilitation programs of the CSMC, it was 6.90 years (5.17), with no significant differences between both sexes ($p = 0.329$).

The DMFT index presented a mean (SD) of 19.71 (5.54) (Tab. 1).

Table 1. Distribution of DMFT index by sex.

	n	DMFT \bar{x} (SD)	D \bar{x}	M \bar{x}	F \bar{x}
Male	68	18.28 (5.36)	2.01	15.48	0,79
Female	97	21.59 (5.32)	1.23	19.27	1.09
Total	165	19.71 (5.54)	1.67	17.12	0.92

Missed teeth represented 86.86% of the total of the DMFT index. Significant differences were observed in the DMFT between genders ($p = 0.033$). When analyzing the DMFT values according to categories established according to DSM IV criteria, no significant differences were observed (Tab. 2).

Table 2. Distribution of DMFT index according psychiatric disorders.

	N	\bar{x}	SD
Schizophrenia	97	18,80	5,3
Mental retardation	39	21,41	5,24
Psychosis	13	21,50	8,06
Specific personality disorder	13	18,50	6,45
Substance addictions	3	24,00	0
Total	165	19,7	5,54

Regarding OHIP-14, the total score before the intervention has a median of 23, with a value of 20.50 for the first quartile and 26.50 for the third quartile, with an interquartile range of 3.5. The mean (SD) was 26.06 (8.74). After prosthetic treatment, OHIP-14 total score has a median of 6, with 5.00 for the first quartile and 10.00 for the third quartile, and an interquartile range of 4.00. The mean (SD) value was 7.70 (3.96). Statistical analysis reveals a significant difference between results pre and post treatment intervention ($p = 0.018$).

4. DISCUSSION

The proposal for the treatment of patients with chronic evolution pathologies in their reintegration into the community leads to the creation of devices that guide the therapeutic objectives to maintain clinical stability and include rehabilitation and social reintegration.

The study included combined clinical and subjective indicators for a multidimensional approach to the oral condition and the measurement of the impact of prosthetic rehabilitation on the quality of life as a driver of changes indicating an improvement in general health. This improvement will allow the inclusion in a comprehensive plan for the social reintegration of psychiatric adults. This study considers that the Health-Mental Illness categories are historically determined by macroeconomic and macrosocial factors with an evaluative charge of what is considered normal and pathological according to the context, the theoretical approaches and diagnostic criteria used, and the philosophical and moral conceptions, current psychological and prevailing medical models. Adults spend long periods in outpatient programs. This situation reveals that it can be questioned whether everything possible in terms of care units makes sense to be done. It is questioned whether the marginal return of the different activities is not very low as a function of the results due to diminishing returns in the face of biological limitations. The questions posed to dental care have resulted from factors that accompany the current model. Accumulated needs that require many clinical units can be highlighted, as well as long periods of hospitalization with an extension of treatments to reach discharge of patients. The oral component involves interventions for the care, prevention, and rehabilitation of prevalent diseases. There is growing interest in quantifying the consequences of oral diseases that affect function, comfort, and the ability to carry out daily activities, the burden of disease registered in different communities, or the social impact that they trigger [3].

In terms of dental conditions, the results of this study determined that oral health has not been a priority in government agendas for these special populations. Therefore, conventional dental care and oral rehabilitation had to face limitations and difficulties. In the province of Buenos Aires, the adults with mental disorders studied were going through an assisted externalization program for socio-labor reintegration with high levels of missed teeth. This situation affects the management of social skills and interpersonal relationships, which cannot be fully realized without rehabilitating the lost dental functionality.

Several studies found similar DMFT values in adults patients with psychiatric disorders [9,10,11,12,13,14], ranging from 16 to 25. This clinical variable allowed quantifying dental disease experience, determining a compromised oral health situation in our sample. The result of the measurement of functional and aesthetic capacities or the impact of the perceived

oral condition constituted an essential input in the individual evaluation of the residual consequence of the oral disease, such as tooth loss and the care provided [3]. While some outcomes related to prosthetic therapies are difficult to measure, satisfaction measurement can characterize such intervention benefits. These results are probably some of the most used as global indicators of the efficacy of prosthetic therapy in clinical practice or research [15]. John et al. studied the association between depression and dissatisfaction in older adults. Their results indicated that depression affects the perception of health and, in particular, perceived health, characterized by OHRQoL measurements. The authors found a significant association between depression and dissatisfaction with prosthetics in older adults, contributing to a wealth of data about the influence of depression on a variety of psychological and psychosocial outcomes in medical-dental treatments [16]. Several studies evaluated the effects of prosthetic rehabilitation on the quality of life and found an improvement after completing treatments [15,17]. With dementia patients, van de Rijt showed insufficient oral function, which was negatively associated with the quality of life and nutritional status [18].

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The aesthetic and functional rehabilitation of individuals is, in essence, the background of prosthodontics as a discipline. The impact of the change will be significantly different depending on how the person feels or perceives the deficit or that residual consequence, such as tooth loss.

5. CONCLUSION

This study showed that oral rehabilitation affected the oral health-related quality of life of patients with psychiatric disorders included in a social integration program.

AUTHOR CONTRIBUTIONS

AMM participated in the research objective proposal, research protocol design, clinical examinations and data collection procedures, and also in the scientific writing of the manuscript. **MLPM** participated in data interpretation and statistical analysis **ST** participated in the clinical examinations and data collection procedures. **LD** participated in data interpretation and the scientific writing of the manuscript. **NB** participated in the research protocol design and critical revision of the manuscript. **AS** participated in data interpretation and the scientific writing of the manuscript

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Questions**1. Which is the role of Oral Health-Related Quality of Life measures in mentally impaired groups?**

- a. Identifying treatment needs, selecting therapies, and monitoring patient progress;
- b. Selecting patients to be treated with simplified techniques;
- c. Reducing costs of treatments;
- d. All of them are correct.

2. Which questionnaire was used in this study to measure Oral Health-Related Quality of Life?

- a. Oral Health Impact Profile (OHIP-14);
- b. Oral Health Impact Profile (OHIP-49);
- c. DMFT;
- d. Oral Health Assessment Tool (OHAT).

3. According DMFT index seen in this study, what is the need for oral rehabilitation in patients with mental disorders?

- a. No need;
- b. Low;
- c. Moderate;
- d. High.

4. What is the relationship between oral rehabilitation and the quality of life in patients with mental disorders?

- a. Impairs quality of life;
- b. Improves quality of life;
- c. Quality of life is not affected;
- d. There is no relation between oral health and quality of life.