

## **Influence of oral health status on self esteem in patients with mental disorders – patients addicted to alcohol**

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**Summary** – There is not much research about the impact of oral health status on self-esteem. The purpose of this descriptive study was to identify if there was any difference between experimental and control group in self-esteem, impact of oral health on social life and living quality, satisfaction with appearance of teeth and oral hygiene. There were 30 participants of experimental group, aged between 25–65 which were without acute symptoms and they were treated from alcoholism and depression at Department of Psychiatry, Sestre milosrdnice University Hospital in Zagreb. Control group consisted of 30 participants aged between 18–65, it was curiosity that had led them to access the descriptive study. It was determined that the presence of low self-esteem is higher in experimental group compared to the control group. Participants of experimental group had worse oral health status. It was also proven that there was an influence of lower level of oral health status on low self-esteem and a significant difference between control and experimental group in all test pieces.

**Keywords:** oral health, self-esteem, addiction to alcohol.

### INTRODUCTION

Tooth loss is a unique problem that can lead to different functional problems and a significant reduction of quality of life. The influence of oral cavity status on the qual-

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ity of life (OHIP) is crucial for testing and evaluating comprehensive measures of dysfunction, inconvenience and disability resulting from oral status.<sup>1</sup> Self-esteem is one of the most important aspects of self-image and has a great influence on cognition, motivation, emotion and behavior. It can be simply defined as a sense of worth and evaluative attitude that an individual has about himself. This position represents the degree of belief in their own ability, importance, performance or value.<sup>2</sup> A significant impact of self-esteem on the result of treatment is recognized in medicine.<sup>3</sup> Several studies were conducted<sup>4</sup> to explore the impact of self-esteem on quality of life, but no study thus far has associated self-esteem with the status of the oral cavity. Hygiene is the most important factor in prevention of oral diseases. Oral hygiene procedures include removal of dental plaque, because the role of plaque in pathogenesis of dental caries or periodontal disease has been known for years.<sup>5</sup> Today, brushing teeth is the most common method of removing plaque. The effectiveness of this method depends on how often and in which manner we brush our teeth, which toothpaste we use, the kind of toothbrush and additional methods used in daily oral hygiene (mouthwash liquid, use of dental floss). Condition of the oral cavity and teeth is an indicator of the general health status of the elderly.<sup>6</sup> Risk factors for the development of caries are the same for people of all ages, but their frequency increases with age. The elderly have difficulty maintaining oral hygiene due to problems with vision or because of decrease in manual dexterity, thereby increasing the quantity of microorganisms in plaque and saliva. Decreased production of saliva also leads to increased amounts of cariogenic flora. Dental caries and periodontal disease are directly associated with tooth loss, although the loss of teeth can be associated with systemic diseases such as osteoporosis or diabetes. Dental fear can be a significant limiting factor in maintaining oral health.<sup>7</sup> As far as modern medicine is concerned, there is an increasingly popular concept that a lesion, for instance, is considered not only locally, but from the standpoint of the whole organism. Dentists should be aware of all the important issues, not only physically, but also mentally. Throughout life certain characteristics and mental traits emerge that should be taken into consideration on behalf of the dentist. Patients become resigned, very involved in physical and emotional indulgence, unwilling to engage with difficulties of everyday life. They exhibit little to no interest in oral health and hygiene, and therefore towards dental procedures. In many patients, the progressive loss of teeth causes multiple issues, many suffer from constant worry and fear about the physiognomic and aesthetic consequences of this loss.<sup>8</sup> Such patients are not uncommon, may become depressed as a result and even have suicidal thoughts.

The aim of this study was to investigate whether there was a difference in self-esteem between patients addicted to alcohol and the control group, what was the impact of oral health on the social aspect of life and quality of life, whether treated alcoholics were satisfied with the appearance of their teeth and how much attention was dedicated to oral hygiene and whether there was any correlation between these key variables.

## SUBJECT AND METHODS

The study included 67 participants, seven of which were excluded due to incomplete participation in all segments of the study. Therefore, 60 subjects were taken into consideration. Thirty subjects (age range 26–65 years), who were in treatment at the Department of Alcoholism in University Hospital Sestre milosrdnice in Zagreb. 73.33% of the subjects of the experimental group were male and 26.67% were female. 33.33% of subjects were employed, while 66.7% were unemployed. 50% of the participants were married, 50% were not. 30 participants in the control group (age range 18–65 years) were acquaintances of the investigators who got involved in the research process out of curiosity. 80% were women and 20% were men. 86.66% of the participants were employed and 13.34% were unemployed. 70% of participants in the control group were married, while 30% were not.

We had used three tests after which a clinical examination of the oral cavity was performed. The research, as far as the patients with alcohol addiction observed were concerned, was conducted in the University Hospital »Sestre milosrdnice« whereas the control group subjects had their clinical exams and their tests performed in the Fizident Clinic. The test we used was the self-esteem scale according to Rosenberg, consisting of ten assertions: five with positive and five with negative connotations. The total score was determined by summing up the assessments on a five-degree Likert scale. Based on the obtained results, the subjects were then classified into one of four categories: very high self-esteem, high self-esteem, average self-esteem and low self-esteem. The second test we used was the test of perceived impact of oral health on social well-being and quality of life (OHIP- Oral Health Impact Profile) and its purpose was to provide a measure of social impact of oral diseases. The purpose of this index is to provide a comprehensive measure of dysfunction, inconvenience and disability resulting from oral status. In this study, an abbreviated version of the OHIP consisting of 14 questions was used. The third test was a structured questionnaire which was used to assess the patients' satisfaction with their appearance as well as the

treatments undergone to improve their appearance. Positive or negative responses to questions were offered, points were awarded based on positivity of responses, which carried more points than negative responses. Parameters tested were related to the presence of caries, more aesthetic fillings and tooth fractures. Furthermore, the survey included an item aiming to determine whether the participants wanted a certain treatment to improve their appearance, including orthodontics, whitening, crowns and aesthetic fillings. A scale ranging from zero to ten was offered to patients, where zero meant the least satisfaction with appearance, while ten signified the greatest satisfaction with appearance. Finally, a clinical dental examination was conducted with the use of a probe and a dental mirror, in accordance with the WHO recommendations. The oral hygiene status was evaluated by a common indicator- Green and Vermillion index of oral hygiene or OHI-S. Dental plaque was evaluated at selected locations. The OHI-S was scored on six surfaces of six teeth: buccal / 16, 26 /, labial / 11, 31 / and lingual / 36, 46 /. The following criteria were applied: 0 – no plaque; 1 – plaque does not cover more than 1/3 of the tooth crown; 2 – plaque covering to 2/3 of the tooth crown and 3 – plaque covering more than 2/3 of the crown. According to the mean values of OHI-S patients were divided into three groups according to the following criteria: 0 (0 = OHI-S = 1) – good oral hygiene, 1 (1,1 = OHI-S = 2.0) – satisfactory oral hygiene, 2 (2.1 = OHI-S = 3.0) – poor oral hygiene. The values were indicators of the level of oral hygiene. The data obtained were statistically analyzed.

## RESULTS

The data collected were statistically analyzed using the software package SPSS for Windows version 22.0. The first step was to determine the statistical method to be used in data processing, with respect to the normality of the distribution of results and the homogeneity of variance. Since the data did not meet the conditions needed for parametrics, bearing in mind that the distributions are not normal and the variance are not homogeneous for all the tests, non-parametric tests were used. Therefore, the Mann Whitney test was used to test the difference between the individual variables.

In Table 1 we can see that the experimental group had lower self-esteem compared to the control group. It is also evident that patients treated for alcohol addiction perceive the influence of oral health on the social sphere and the quality of life more so than the participants in the control group. Furthermore, participants in the control group achieved higher scores on the test of satisfaction with the appearance of their teeth than the patients treated for alcohol addiction. Finally, lower test scores of oral

**Table 1.** Results of the Mann Whitney test for differences in self-esteem, perception of the impact of oral health on the social sphere and quality of life, satisfaction with appearance and desired treatments to improve the esthetics and oral hygiene between the experimental and control groups

	M (experimental group)	M control group	P
Self-esteem	19,12	41,88	0,000
Perception of the impact of oral health	37,30	23,70	0,003
Satisfaction with appearance of teeth	23,92	37,08	0,003
Oral hygiene	40,42	20,58	0,000

Explanation: M = the average score achieved in the test; p = indicates statistical significance of the test

hygiene indicate worse oral hygiene in the experimental group compared to the control group. Since the Mann Whitney test is statistically significant ( $p < 0.01$ ) in all four instances, it can be concluded that there are significant differences between the experimental and control groups in all four tests.

Results in the following table show whether there was a significant difference between the experimental and control groups in all four tests. The Mann Whitney test proved significant ( $p < 0.05$ ) for all four tests, which means that in all four tests the experimental and control groups were significantly different.

**Table 2.** Mann Whitney test showed statistically significant differences in all four tests between the experimental and control groups

	Self-esteem	Test 2	Test 3	Oral hygiene
Mann-Whitney U	108,500	246,000	252, 500	152,500
Wilcoxon W	573,500	711,000	717, 500	617,500
Z	-5,064	-3,019	-2,935	-4,768
Asymp.sig. (2-tailed)	,000	,003	,003	,000

To test the correlations between variables, Spearman's correlation coefficient was used. The correlation between self-esteem and the impact of oral health is  $-0.525$  and is statistically significant. Since the negative correlation, this means that persons of a higher self-esteem achieve lower scores on the test the impact of oral health and vice versa, people with lower self-esteem have achieved a higher score on the test the impact of oral health. A higher score on the test the impact of oral health means that the

person has a greater perception that oral health negatively affects her social sphere and quality of life. In conclusion, the person with higher self-esteem assesses that oral health has less negative impact on the social sphere and quality of life, in contrast to people with lower self-esteem. The correlation between self-esteem and satisfaction with appearance of the test is 0.364 and is statistically significant. The correlation is positive, which means that people who have achieved a high score of self-esteem, managed to achieve higher test results in satisfaction with their appearance. In other words, those with high self-esteem were more satisfied with their appearance than persons with low self-esteem. The correlation between the impact of oral health and appearance satisfaction is  $-0.561$  and is statistically significant. The correlation is negative, which means that people who have achieved a high score on the test of the impact of oral health reached a low score on the test of satisfaction with appearance and vice versa. People who estimated that oral health has a negative impact on their social sphere and quality of life, and these are people who have achieved a high score on the test of the impact of oral health, are less satisfied with their appearance. Kendall (tau) correlation coefficient was used to test the connection between oral hygiene test with other tests. The test of oral hygiene is categorical (nominal) variable, i.e., the test divides participants into categories (0,1 and 2) and therefore we cannot use the same coefficient of correlation. Kendall (tau) correlation coefficient between self-esteem and the oral hygiene is  $-0.432$  and is statistically significant. It is negative, which means that those with high self-esteem achieve lower scores on tests of oral hygiene than persons with low self-esteem. A higher score on a test of oral hygiene indicates poorer oral hygiene. It can be concluded that people with higher self-esteem have better oral hygiene, while people with lower self-esteem have poorer hygiene. The correlation between the test of the impact of oral health and oral hygiene test is 0.493 and is statistically significant. It is positive, which means that people who had achieved a high score on the test of the impact of oral health have also achieved a high score on the test of oral hygiene. In other words, people who estimate that oral health has a greater negative impact on the social sphere and the quality of life they have poor oral hygiene. The correlation between test of appearance satisfaction and the oral hygiene test is  $-0.415$  and is statistically significant. The correlation is negative, which means that people who have achieved a high score on the test of appearance satisfaction achieved low scores on the test of oral hygiene and vice versa. That means that people who are more satisfied with their appearance have better oral hygiene.

## DISCUSSION

This research is one of the first studies dealing with the influence of the status of the oral cavity on the self-esteem of patients with psychiatric illnesses. Before concluding the results, the limitations of research should be discussed. Population size is recognized as a limiting factor, although the tested amount was sufficient to obtain significant and reliable results, the question is whether it can be applied for the general population. The experimental group showed a lower level of self-esteem compared to the control group. The higher the self-esteem, the more successful is coping with different requirements, both in private and professional sphere. People with high self-esteem are more ambitious, want and hope to achieve more in life, whether in the emotional, intellectual, creative or spiritual field. People with low self-esteem set goals that are less likely to be achieved. When a person has already created a poor self-image, that image is hard to change. Poor self-esteem follows us through the entire life. People with low self-esteem have difficulties tolerating failure. Every time they do not achieve their goal, for them it is just another proof that they are worthless and ineffective. They do not even consider other reasons for failure. A person with high self-esteem will probably choose another explanation. Failure does not threaten such person's self-esteem, does not cause unpleasant feelings and directs the person towards constructive goal – finding new employment. However, people with low self-esteem will choose the worst, the third explanation. This is the explanation that causes bad feelings, bad self-esteem and confirms that person will always be unsuccessful. Consumption of alcoholic beverages and tobacco in many cases results in the appearance of periodontitis, tooth loss and oral cancer. Those people have as much as 35 times higher risk of diseases of the oral cavity than people who are non-smokers and do not drink alcohol on a daily basis. It is known that alcohol dries the mouth. Dry mouth creates favorable territory for colonization of microorganisms which increases the incidence of dental caries, because they are not washed with saliva. Alcoholics have a greater chance of bad status of the oral cavity because of their poor oral hygiene. The study showed that experimental group had inferior status of the oral cavity in comparison to the control group. 66.7% of the experimental group were unemployed compared to 13.34% of the unemployed in the control group. In previous studies, a longer duration of unemployment was associated with lower scores on scales of self-esteem, life satisfaction and happiness.<sup>9</sup> Low socio-economic status is a risk factor for the low level of health awareness. It is known that highly skilled and educated people have a higher level of consciousness than those with lower vocational education. Low socio-economic status is associated with deficient oral hygiene, dental car-

ies and need for dental treatments. Previous studies have shown that the greater the loss of teeth is found in people with lower education. This can be explained by the fact that people with higher education and better socio-economic status have better oral hygiene, receive better dental and medical treatments over a lifetime than people with lower education. Oral health not only played a role in the quality of life, people who have poor oral hygiene have many difficulties in the form of eating certain food, which is essential for the human body. Studies indicate that tooth loss affects nutritional loss in terms of the risk of development of systemic diseases that are increasing.<sup>10</sup> Malnutrition increases the number of oral infections and can lead to the development of many serious diseases. Previous studies indicate that oral diseases are correlated with higher risk for cardiovascular disease, particularly in combination with risk factors such as drinking alcohol and cigarette smoking. The research results indicated greater impact of oral health on the social sphere and the quality of life, suggesting that people in the experimental group have a greater perception that oral health negatively affects their social sphere and quality of life. 50% of participants in the experimental group had no spouse, as opposed to 30% of the participants of the control group. Although it is not yet proven that there is a correlation between low self-esteem and marital status, it is demonstrated that there is a dose of depression in singles. This is often the reason why they turn to alcohol and where a vicious circle begins. People in the experimental group showed greater dissatisfaction with the appearance of their teeth and the desire for treatments in the form of repairs of those. In conversation with participants, we found out that main reasons for poor oral status were rare dentists' appointments, fear of them, and expensiveness of esthetic variants that are able to solve their problems.

## CONCLUSION

The results of this study show that people with low self esteem, treated alcoholics in experimental group, had a bad status of the oral cavity. People with higher self-esteem estimated that oral health had a smaller negative impact on the social sphere and quality of life, opposed to people with lower self-esteem. People who achieved a high score of self-esteem also achieved higher results on appearance satisfaction test. In other words, those with high self-esteem are more satisfied with their appearance than those with low self-esteem. Less satisfied with their appearance are people who claimed that oral health had a negative impact on their social sphere and quality of life. Those are the people who achieved higher scores on the Oral Health Impact test.



## UTJECAJ STATUSA USNE ŠUPLJINE NA SAMOPOŠTOVANJE PACIJENATA SA PSIHIČKIM OBOLJENJIMA – OVISNIH O ALKOHOLU

**Sažetak** – Malo je poznato o utjecaju statusa usne šupljine na samopoštovanje. Cilj ovog istraživanja je ispitati postoji li razlika između eksperimentalne i kontrolne skupine u samopoštovanju, utjecaju oralnog zdravlja na socijalnu sferu i kvalitetu života, zadovoljnosti izgleda zubi i oralnoj higijeni, te da li postoji korelacija među pojedinim česticama. U obzir je uzeto 30 ispitanika eksperimentalne skupine u dobi od 26–65 godina koji se liječe od alkoholizma i depresije na Odjelu za psihijatriju KBC Sestre milosrdnice u Zagrebu u odsutnosti akutne faze bolesti. Kontrolna skupina u dobi od 18–65, ima 30 ispitanika koji su pristupili istraživanju iz radoznalosti. Utvrđeno je postojanje niskog samopoštovanja u osoba eksperimentalne skupine u odnosu na kontrolnu skupinu. U ispitanika eksperimentalne skupine dokazan je loš status usne šupljine. Također je dokazano da postoji utjecaj lošeg statusa usne šupljine na nisko samopoštovanje, te da postoji razlika između kontrolne i eksperimentalne skupine u svim ispitivanim česticama.

**Ključne riječi:** oralno zdravlje, samopoštovanje, ovisnost o alkoholu

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