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EVALUATION OF ORAL HEALTH RELATED QUALITY OF LIFE & WELL BEING OF THE PATIENTS

ABSTRACT

Background: - Oral diseases are thought to produce a negative impact on the quality of life of an individual. It is well-documented now a days that the patient's perception should be familiarized while evaluating oral diseases and the respective treatment measures. Hence, it is imperative to assess the oral health-related quality of life (OHRQoL) that serves to be a vital indicator of the required intervention outcomes in modern-day oral health research and practice.

Aim: - To assess the OHRQoL among the individuals reporting to the OPD of department of oral pathology & microbiology at Kusum Devi Sunderlal Dugar Jain Dental College & Hospital, Kolkata.

Methodology: -A cross-sectional study was performed on 600 subjects with age more than 30 years were in good physical and mental health condition. OHIP-14 was used that surveys 7 dimensions of impact i.e. functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability and handicap.

RESULTS: -The mean age of the patient's group was 44.57±12.62. Mean OHI-14 score of the surveyed population was 7.095±10.53. There was insignificant difference in mean ohip-14 score among males and females (P= 0.435). Oral health related quality of life was found to have positive correlation with age (R = 0.362; P< 0.0001).

CONCLUSION: -Further research with appropriate sample size should be undertaken to emphasize on OHRQoL in the treatment procedure to facilitate in proper planning and evaluating the outcomes that is best suitable for the patient.

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Keywords: Oral Health, Oral Health Impact Profile- 14

1. INTRODUCTION

According to WHO, "health is a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity".¹ health-related quality of life (HRQOL) functionalizes on several factors like subjective experiences of physical, social, and emotional health that envisages daily performance and welfare of an individual.² It is a well-accepted fact in dentistry that the newfangled outlook on health insinuates the critical objective of dental care that does not only depend upon the lack of caries, periodontal disease or oral cancer nevertheless includes the

21 mental and social well-being of an individual also. The notion of oral health-
22 related quality of life (OHRQOL) apprehends the intention of this novel
23 viewpoint.³

24 OHRQOL is a comparatively novel, but precipitously rising experience, that has
25 surfaced over the past few decades around the globe.⁴ It has been defined as “the
26 absence of negative impacts of oral conditions on social life and a positive sense of
27 dentofacial self-confidence” (p. 14).⁵ It is considered to be imperative with regard to
28 both theoretical and practical reasons and it is advocated that oral health can disturb
29 anybody’s life. Research OHRQOL on has portrayed its efficacy in the study of
30 distinct populations (for e.g. in patients with oral cancer, toddlers with early
31 childhood caries, or children with craniofacial anomalies etc.)⁶

32 Oral health impact profile (OHIP) was established to provide far-reaching means of
33 self-reported dysfunction, discomfort and disability accredited to the oral condition.
34 The original OHIP contains 49 questions grouped in 7 dimensions grounded on
35 Locker’s model of oral health (adapted from the WHO’s international classification of
36 impairments, disabilities, and handicaps). However, the OHIP-14 was established
37 as a shorter type of the OHIP-49.⁷

38 The OHIP-14 index was initially developed in English language which posed little
39 difficulty in administering these questionnaires specifically in non-English-speaking
40 countries and in areas where the resident’s dialect was dissimilar from English.
41 Hence, this tool was further translated into diverse languages like Brazilian⁸,
42 Mandarin⁹, Taiwanese¹⁰, Sinhalese¹¹ and few others in accordance to the various
43 geographical areas. The psychometric features were analyzed and consequently
44 those questionnaires were used to evaluate the oral health related quality of life
45 (OHRQoL) in respective population.¹²

46 This tool most commonly used for OHRQoL indicators internationally and is
47 presented in numerous languages (including Portuguese, Chinese, French, German,
48 Japanese, Malaysian, Spanish And Somalian) and it also depicts face and content
49 validity for distinctive populations.⁷ The questionnaire evaluates the influence of oral
50 problems and entails physical, psychological and social magnitudes of day-to-day
51 life. It is divided into 7 dimensions, each consisting of two items. The responses are
52 hence scored on a 5-point Likert scale, from never to very often.¹³ It is presumed that
53 there is a serious need to emphasize the difficulties of the elderly people and to
54 study the stratagems for refining their quality of life. Hence, the present study was
55 conducted to assess the OHRQoL among the individuals reporting to the OPD of
56 department of Oral Pathology & Microbiology at Kusum Devi Sunderlal Dugar Jain
57 Dental College & Hospital, Kolkata.

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59 2. MATERIAL AND METHODS :A Cross-Sectional Study was performed on the
60 OPD patients of department of Oral Pathology & Microbiology on 600
61 subjects with age more than 30 years. The study population were chosen
62 using convenience sampling technique. Subjects with good physical and
63 mental health condition and who were willing to participate were only
64 included in the study. An informed consent was acquired from all the
65 individuals prior to the study. OHIP-14 was used which surveys 7
66 dimensions of impact i.e. Functional Limitation, Physical Pain,

67 Psychological Discomfort, Physical Disability, Psychological Disability, Social
68 Disability and Handicap. Few other features that were included are: - Age,
69 Gender and Socioeconomic status of the participants. The questionnaire
70 was formulated in the local language that consisted of OHIP-14. Following
71 was the response sheet: -

- 72 • All the Time - 4
- 73 • Very Often - 3
- 74 • Fairly Often - 2
- 75 • Sometimes - 1
- 76 • Never - 0

77 THE OHIP-14 scale had scores ranging from 0 to 56, wherein, higher scores
78 indicated poorer OHRQoL. The collected data was then subjected to
79 statistical analysis.

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81 3. RESULTS AND DISCUSSION

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83 A total of 600 patients (Males= 280 and Females = 320), from the out-patient
84 department of the Department of Oral Pathology & Microbiology, At Kusum Devi
85 Sunderlal Dugar Jain Dental College, Kolkata participated in the survey with a mean
86 age 44.57+12.62. Mean OHI-14 score of the surveyed population was 7.095+10.53.
87 There was insignificant difference in mean OHIP-14 score among Males and
88 Females (P= 0.435) [table 1].

89 Oral health related quality of life was found to have positive correlation with age (R =
90 0.362; P< 0.0001) i.e., with increase in age, the scores of the OHIP-14 also
91 increased suggesting poor oral health related quality of life among the residents.
92 Among the study population surveyed, 33% responded to have OHIP-14 scores.
93 Remaining 67% had one or other impact of oral health on their quality of life [table
94 2]. Table 3 shows the correlation of the socioeconomic status and the OHIP-14
95 scores wherein the upper-class revealed a mean rank of 58.32 followed by the
96 middle-class with a value of 91.86 and the highest score was observed in the lower-
97 class with a value of 157.62.

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98 4. DISCUSSION

99 The health-related quality of life and the patients' discernment have lately been of
100 utmost importance amongst the healthcare professionals that has led to the swift
101 development in the research work. The acuity and evaluation of individual's health
102 and their quality of life though to be determined on cultural grounds. Hence, it is
103 imperative to compare OHRQOL among various countries.¹⁴ QOL is progressively
104 accredited as an effective, apposite and noteworthy mode of indicator with regards
105 to the intervention consequences in modern-day public health study and practice
106 that has created an augmented use of appropriate oral health status actions and
107 methods for the patients, chiefly trying to estimate the influence of oral health status
108 on the QOL. Hence, the present study was undertaken to reconnoiter the

109 relationship between oral health status and its impact on the QOL using OHI-14
110 index. A short OHIP version has been considered as a prevailing instrument for the
111 subjective evaluation of OHRQOL. THE OHIP 14, being developed by Slade in 1997
112 ¹⁵, was validated for use amongst the adult people in England¹⁶, Scotland¹⁷, Sri
113 Lanka¹⁸ and China.^{19,20} It was observed that although OHIP was provided a complete
114 data regarding the insight of welfare of an individual, the present study setting was
115 not appropriate for using the full 49-item OHIP tool. Consequently, the short-form
116 OHIP-14 was adapted and followed after establishing its reliability, validity and
117 precision thus making the research process less time consuming and easy to
118 perform.²¹

119 In the present study the mean OHIP-14 scores for Males and Females were 7.07
120 and 7.01 respectively with P value of 0.435, thus showing insignificant association of
121 Gender with Oral Health Impact. This was found to be in contrast to a study done by
122 Sanadhya S et al. (2015)²⁰. Few studies conducted by Lawrence HP et al. (2008)²²,
123 Ingle NA et al. (2010)²³, Fotedar S et al. (2014)¹³ and Agrawal SK et al. (2017)²⁴
124 showed that Females exhibited more severe impact of oral diseases when
125 compared to Males.

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134 The results of the present study were found to be much lower than that obtained by
135 a study done by Papaioannou W et al. (2015)²⁵ wherein the total mean score was
136 16.3 (+/-)10. The reason for this variation could be attributed to the subjective
137 impact and diverse perception of the specific characteristics of the disease amongst
138 individuals. There could be diverse responses ranging from insignificant findings to
139 debilitating effects that could reduce the QOL and normal functions of individual of
140 the community.

141 The present study showed that maximum number of participants (49%) responded
142 with throbbing pain in the mouth during questioning, 33.5% being self-conscious and
143 32.5 % with tense feelings. There were about 32% participants who had difficulty
144 doing usual works, 29.3% participants who were less satisfied with life and 28 %
145 subjects had uneasiness in eating food.

146 These findings suggested that the participants had more of a psychological
147 influence rather than other realms of the index. Few participants (18.5%) had
148 difficulty in pronouncing words due to various oral and dental problems. These
149 findings are substantiated with another analogous study done in Czech Republic by
150 Hodacova I et al. (2010), where 21.5% subjects were self-conscious and 32.2% felt
151 tensed and 13.3% had difficulty while speaking.

152 The present study revealed that the socioeconomic status had positive and
153 significant impact on the OHRQoL with $p < 0.001$. Table 3 suggests that subjects

154 belonging to the low socioeconomic group had higher impact on their oral health
155 and QOL with a mean rank of 157.62; wherein upper-class participants showed
156 least impact with 58.32 mean rank score and the middle-class people exhibited a
157 mean score of 91.58. Similar results were also seen by another study done in
158 Shimla by Fotedar S et al. (2014). This association the socioeconomic status and
159 oral health impact could be attributed to the deprived health related amenities of the
160 lower group people owing to their financial restraints.

161 Few of the limitations of present study included the following. Firstly, easy
162 accessibility of the sample group of patients attending the college, that could affect
163 its understanding and cannot be taken as a generalized data. So, the present
164 results cannot be presumed to be applicable universally. Secondly, the sample size
165 of the present study being low, also could influence the outcomes with respect to the
166 gender and oral health status variables on OHRQoL. Thirdly, this being a cross
167 sectional study, certain other factors were not well-thought-out. Thus, further studies
168 are desirable with a certain fixed population specifically from diverse social and
169 cultural backgrounds as these features have an imperative role in both oral hygiene
170 status and its impact on QOL.

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174 5. CONCLUSION

175 The subjective assessment of patients and their health-related QoL is
176 frequently dissimilar from the viewpoint of the healthcare professionals. It is
177 hence vital to evaluate the effectiveness of various treatment modalities and
178 ensure suitable measures for oral health care. These studies empower the
179 researchers to determine the precise requirements of patients that need
180 accurate attention and assistance. Hence, oral healthcare professionals and
181 clinicians should play a vital role in encouraging and improving the
182 accessibility to apt oral healthcare for both urban and rural population. It is
183 thus advisable that further research should be undertaken to accentuate the
184 necessity and technique for amalgamation of OHRQoL in the treatment
185 procedure involving larger sample size representing a general population in
186 order to help in accurate planning and for evaluating the consequences in
187 future trials for effective outcomes.

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197 **COMPETING INTERESTS**

198 Conflict of Interest- Nil

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200 "Authors have declared that no competing interests exist."

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202 **AUTHORS' CONTRIBUTIONS**

203

204 "Author 1 & 2 performed the study, Author 3 wrote the protocol, Author 4 wrote the first draft
205 of the manuscript, 'Author 5' designed the study & statistical analysis, Author 6 managed the
206 literature searches, and 'Author 7' managed the analyses of the study. All authors read and
207 approved the final manuscript."

208

209 **CONSENT (WHEREEVER APPLICABLE)**

210 "All authors declare that 'written informed consent was obtained from the patient for
211 publication of this study. A copy of the written consent is available for review by the Editorial
212 office/Chief Editor/Editorial Board members of this journal."

213 Attached in Appendix

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215 **ETHICAL APPROVAL (WHEREEVER APPLICABLE)**

216 Attached in Appendix

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219 **DEFINITIONS, ACRONYMS, ABBREVIATIONS**

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221 **OHRQOL = Oral Health-Related Quality of Life**

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295 **APPENDIX**

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TABLES

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Table 1:- Mean values of OHIP-14 scores for each category of grouping variables.

Gender	Mean OHIP-14 score	P value
Males	7.075	0.435
Females	7.01	

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Table 2: -Percentage of subjects responding 'sometimes', 'fairly often' or 'all the time' to each OHIP-14 item

SI no.	OHIP-14 items	N	Percentage
1.	Difficulty in pronouncing words	111	18.5
2.	Taste sensation becoming worse	102	17
3.	Throbbing pain in mouth	294	49
4.	Uneasiness in eating food	168	28
5.	Been self-conscious	201	33.5
6.	Tense feeling	207	32.5
7.	Difficulty in relaxing	186	31
8.	Embarrassed at times	132	22
9.	Less satisfied with life	174	29.3
10.	Diet has been unsatisfactory	138	23
11.	Had to interrupt meals	117	19.5
12.	Been irritable with others	162	27
13.	Difficulty doing usual works	192	32
14.	Totally unable to function	126	21

Table 3:- Socioeconomic status and median score of OHIP-14

Socioeconomic status	No of study population	Median	Mean rank	P value
Upper class	42	0	58.32	<0.001
Upper middle class	171	2	80.25	
Middle class	201	2	91.86	
Lower middle class	96	8	119.58	
Lower class	90	25	157.62	

**Oral health impact increased with decrease in socioeconomic status which was statistically significant)

p<0.001)