Assessment of Oral Health-Related Quality of Life Among Adults in Kolkata, West Bengal, India

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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 for surveys of 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.

Keywords: Oral Health, Oral Health Impact Profile- 14,Oral diseases,

1. INTRODUCTION

According to W.H.O, "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 mental and social well-being of an individual also.

Oral Health-Related Quality of Life:The notion of oral health-related quality of life (OHRQOL) apprehends the intention of this novel viewpoint.[3]

OHRQOOL is a comparatively novel, but precipitously rising experience, that has surfaced over the past few decades around the globe.[4] it has been defined as "the absence of negative impacts of oral conditions on social life and a positive sense of dentofacial self-confidence" (p. 14).[5]"It is considered to be imperative with

regard to both theoretical and practical reasons and it is advocated that oral health can disturb anybody's life. Research OHRQoL on has portrayed its efficacy in the study of distinct populations (for e.g. in patients with oral cancer, toddlers with early childhood caries, or children with craniofacial anomalies etc.)"[6]

Oral health impact profile (OHIP): "OHIPwas established to provide far-reaching means of self-reported dysfunction, discomfort and disability accredited to the oral condition. The original OHIP contains 49 questions grouped in 7 dimensions grounded on locker's model of oral health (adapted from the WHO's international classification of impairments, disabilities, and handicaps). However, the OHIP-14 was established as a shorter type of the OHIP-49"[7]

OHIP-14 index: "The OHIP-14 index was initially developed in English language which posed little difficulty in administering these questionnaires specifically in non-English-speaking countries and in areas where the resident's dialect was dissimilar from English. Hence, this tool was further translated into diverse languages like Brazilian[8], Mandarin[9], Taiwanese[10], Sinhalese"[11] and "few others in accordance to the various geographical areas. The psychometric features were analyzed and consequently those questionnaires were used to evaluate the oral health related quality of life (OHRQoL) in respective population".[12]

"This tool most commonly used for OHRQoL indicators internationally and is presented in numerous languages (includingPortuguese, Chinese, French, German, Japanese, Malaysian, Spanish And Somalian) and it also depicts face and content validity for distinctive populations.[7]The questionnaire evaluates the influence of oral problems and entails physical, psychological and social magnitudes of day-to-day life. It is divided into 7 dimensions, each consisting of two items. The responses are hence scored on a 5-pointLikert scale, from never to very often".[13]It is presumed that there is a serious need to emphasize the difficulties of the elderly people and to study the stratagems for refining their quality of life. Hence, the present study was conducted 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.

2. MATERIAL AND METHODS:

A Cross-Sectional Study was performed on the OPD patients of department of Oral Pathology & Microbiology on 600 subjects with age more than 30 years, Males & Females both having dental problems. The study population were chosen using convenience sampling technique. Subjects with good physical and mental health condition and who were willing to participate were only included in the study. An informed consent was acquired from all the individuals prior to the study. OHIP-14 was used which surveys 7 dimensions of impact i.e. Functional Limitation, Physical Pain, PsychologicalDiscomfort, Physical Disability, Psychological Disability, Social Disability and Handicap.

Few other features that were included are: - Age, Gender and Socioeconomic status of the participants. The questionnaire was formulated in the local language that consisted of OHIP-14. Following was the response sheet: -

- All the Time - 4
- Very Often - 3
- Fairly Often - 2
- Sometimes - 1
- Never - 0

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

3. RESULTS AND DISCUSSION

A. RESULTS:

A total of 600 patients (Males= 280 and Females = 320), from the out-patient department of the Department of Oral Pathology & Microbiology, At Kusum Devi Sunderlal Dugar Jain Dental College, Kolkataparticipated in the survey with a mean age 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) [table 1].

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

B. DISCUSSION

"The health-related quality of life and the patients' discernment have lately been of utmost importance amongst the healthcare professionals that has led to the swift development in the research work. The acuity and evaluation of individual's health and their quality of life though to be determined on cultural grounds. Hence, it is imperative to compare OHRQOL among various countries.[14] QOL is progressively accredited as an effective, apposite and noteworthy mode of indicator with regards to the intervention consequences in modern-day public health study and practice that has created an augmented use of appropriate oral health status actions and methods for the patients, chiefly trying to estimate the influence of oral health status on the QOL. Hence, the present study was undertaken to reconnoiter the relationship between oral health status and its impact on the QOL using OHI-14 index. A short OHIP version has been considered as a prevailing instrument for the subjective evaluation of OHRQOL. THE OHIP 14, being developed by Slade in 1997"[15], was validated for use amongst the adult people in England[16], Scotland[17], Sri Lanka[18] and China.[19,20]"It was observed that although OHIP was provided a complete data regarding the insight of welfare of an individual, the present study setting was not appropriate for using the full 49-item OHIP tool. Consequently, the short-form OHIP-14 was adapted and followed after establishing its reliability, validity and precision thus making the research process less time consuming and easy to perform"[21]

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

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

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

These findings suggested that the participants had more of a psychological influence rather than other realms of the index. Few participants (18.5%) had difficulty in pronouncing words due to various oral and dental

problems. These findings are substantiated with another analogous study done in Czech Republic by Hodacova l et al. (2010),[26] where 21.5% subjects were self-conscious and 32.2% felt tensed and 13.3% had difficulty while speaking.

Socioeconomic Status:The present study revealed that the socioeconomic status had positive and significant impact on the OHRQoL with $p<0.001$. Table 3 suggests that subjects belonging to the low socioeconomic group had higher impact on their oral health and QOL with a mean rank of 157.62; wherein upper-class participants showed least impact with 58.32 mean rank score and the middle-class people exhibited a mean score of 91.58. Similar results were also seen by another study done in Shimla by Fotedar S et al. (2014). This association the socioeconomic status and oral health impact could be attributed to the deprived health related amenities of the lower group people owing to their financial restraints.[27,28]

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

C. CONCLUSION

The subjective assessment of patients and their health-related QoL is frequently dissimilar from the viewpoint of the healthcare professionals. It is hence vital to evaluate the effectiveness of various treatment modalities and ensure suitable measures for oral health care. These study not only reveals about functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability etc. but also insignificant association Male & Female oral health which was differ from other studies.These studies empower the researchers to determine the precise requirements of patients that need accurate attention and assistance. Hence, oral healthcare professionals and clinicians should play a vital role in encouraging and improving the accessibility to apt oral healthcare for both urban and rural population. It is thus advisable that further research should be undertaken to accentuate the necessity and technique for amalgamation of OHRQoL in the treatment procedure involving larger sample size representing a general population in order to help in accurate planning and for evaluating the consequences in future trials for effective outcomes.

ABBREVIATIONS

OHRQOL = Oral Health-Related Quality of Life

Ethical Approval(Iec No ec/new/inst/2023/3477):

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

Consent

As per international standards or university standards, patient(s) written consent has been collected and preserved by the author(s).

Disclaimer (Artificial intelligence)

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Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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Details of the AI usage are given below:

1.

2.

3.

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TABLES

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	

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

Sl 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)