Comparison of Oral Health Related Quality of Life Between Rural and Urban Areas in Andhra Pradesh: A Cross-Sectional Study

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ABSTRACT

INTRODUCTION: Oral Health-related quality of life (OHRQOL) depends enormously on the cleanliness of the mouth and on people's lifestyles. Generally, it is the primary determinant that demonstrates a substantial influence on an individual's overall health-associated standard of living; therefore, ensuring proper upkeep of oral cleanliness is an essential tenet for improving the overall health of a person. The research based on the epidemiology in association with the OHRQOL shows significance as it not only focuses on the physical & mental health, but also extends beyond physical health to capture the impact of oral hygiene on functional, intellectual, and cultural sophistication of a person. Hence, in improving our apprehension over the oral hygiene-related quality of life of an individual, by considering the role of social & regional factors. The present investigation was planned to assess and compare the OHRQOL in rural & urban patients of Andhra Pradesh using a short questionnaire of OHIP-14. The OHIP-14 question was considered because it concerns the effects of oral hygiene on the lifestyle of a person and assists in analysing the seven subscales linked to a person's lifestyle, i.e., physical pain, physical disability, psychological disability, social disability, handicap, functional limitation, and psychological discomfort.

AIM and OBJECTIVE: This study aimed to compare the Oral Health-related Quality of Life (OHRQOL) between the rural and urban populations. The objectives included the evaluation of OHROQL in rural and urban areas, the determination of the dimensions that had a major impact on OHROQL in study participants, and the association between urban and rural area OHROQL.

METHODOLOGY: An observational cross-sectional study was conducted on 400 participants. The participants are divided into 2 equal groups based on the geographic areas i.e., urban and rural in Andhra Pradesh province. The study participants are administered based on the structured questionnaire (OHIP-14). The participants are interviewed by the principal

investigator and the response was recorded. Participation is voluntary, and verbal consent was obtained.

OBSERVATION AND RESULTS: The results obtained showed that the variables having high statistical significance in rural population is physical pain, psychological discomfort and the least concerning factor are functional limitation. Where as in urban population was where psychological discomfort and the least concerning factors were functional limitation.

CONCLUSION: Based on the overall results rural community has poor OHRQOL than those in urban community even though there are different variables that effects the OHRQOL in both rural and urban population. Given bidirectional relationship between impacts of oral health and health related quality of life improving oral health in rural and urban area may be a critical avenue to improve the health-related quality of life in urban and rural communities.

INTRODUCTION

Oral Health-related quality of life (OHRQOL) depends enormously on the cleanliness of mouth and on the people's lifestyles. Generally, it is the primary determinant that demonstrates a substantial influence on an individual's overall health-associated standard of living. therefore, ensuring proper upkeep of oral cleanliness is an essential tenet for improving the overall health of a person.

In dentistry "oral hygiene" implicates to proper maintenance of the oral cavity by proper flossing & brushing of oral components which help in preventing of diseases related to the hard & soft structures in contact with the mouth. At juvenility (I.e., adolescence), the dental hygiene must be essentially maintained because of increased risk factors which shows high susceptibility to the decay of the hard structures and may also cause damage to the soft tissues which caused by the eruption of permanent tooth by which there is an increased risk for periodontal diseases. [1]

According to the study conducted by the locker & his associates shows that the dental hygiene influences a person's general, emotional, social, physical, well-being, through which it also effects lifestyle choices individual's, social interactions, social support system. [3] the research shows that oral health related quality of the life intertwines with various aspects such as personality, Rank, home management, lifestyle, and geographical features. [2]

The current study is to compare the differences that are Based on the existing pathologies, sociodemographic, cultural, educational, psychological, dietary, and financial factors between the rural & urban environment. These characteristically show a reduced negative impact in the urban environment which promotes the oral health in association to the overall health. Furthermore, due to the reduced availably of the resources in rural environment regarding information of health care facilities & guidance from the professional health care practitioner which cause inability of an individual to reduce the progression of diseases and aggrandize healthy habits. So, it is very crucial to enlighten a person about promoting & precautionary methods, associating with the hygiene of mouth, through it helps an individual to improve oral health associated with the way of life. [1,4-6]

The complications related to mouth appears as a mild defect of the dental structures initially and progress into chronic defect's which are harmful, destructive and adversely effects the body with association to the vital organs. [2] Dental hygiene trends itself as important determinant of a person's health there by determining the way of life. The research based on the epidemiology in association with the OHRQoL shows significance as it not only shows focus on the physical & mental health, and also extends beyond physical health to capture the impact of oral hygiene on functional, intellectual, cultural sophistication of a person. Hence, in improving our apprehension over the oral hygiene related quality-of-life of an individual by considering the role of social & regional factors. The present investigation was planned to assess and compare the OHRQoL in rural & urban patients of Andhra Pradesh using short questionnaire of OHIP-14. The ohip-14 question was considered because it concerns the effects of oral hygiene on the lifestyle of a person and assists in analysing the seven subscales linked to a person's lifestyle, i.e., Physical Pain, Physical Disability, Psychological Disability, Social Disability, Handicap, Functional Limitation, psychological discomfort.

AIM & OBJECTIVE

This study aimed to compare the Oral Health-related Quality of Life (OHRQoL) between rural and urban population.

Objective

-To evaluate the OHROQL in rural and urban areas.

- To determine the dimensions that have major impact on OHROQL in study participant.

- To know the association between urban and rural area OHROQL

MATERIALS & METHODS:

DESIGN, SETTING, PARTICIPENTS: -

An observational cross-sectional study was conducted on 400 participants. The participants are divided into 2 equal groups based on the geo- graphic areas i.e., urban and rural in Andhra Pradesh province. The study participants are administered based on the structured questionnaire (OHIP-14). The participants are interviewed by the principal investigator and the response was recorded. Participation is voluntary, and verbal consent was obtained. This study has obtained an ethical clearance from the instructional ethical committee.

INCLUSION CRITERIA: - -

Participants with an age of 30-50 years of age. - All male and female were included.

EXCLUSIVE CRITERIA: -

Population with mental impaired health were excluded.

OHIP-14: -

Oral health impact index questionnaire-14 is a widely used tool to assess the Oral health related quality of life in general population. The OHIP-14 consists of 14 structured closed

ended questions pertaining to the -Functional limitation, Physical pain, Physical disability, psychological discomfort, psychological disability, social disability, Handicap. The items are rated on 5-point Likert scales ("never" = 0, "rarely" = 1, "occasionally" = 2, "often" = 3, "always" = 4). The OHIP-14 total range is 0-56 points, with lower scores indicating better OHRQoL. Highest score indicates poor oral health.

POTENTIAL CONFLIT OF INTERESTS: -

As the study does not have any intervention, there were no potential conflicts of interests.

STATISTICAL ANALASES: -

Descriptive for demographic variable ranked.

Categorical variables— Frequencies,
Chi square test,
Spearman co-relativities

OBSEVATION AND RESULTS:

The collected data is entered into MS- Office Excel and subjected to statistical analysis using SPSS Version 21.0 (IBM, Armonk, USA). The data is checked for the normality with Shapiro-Wilk test and found to be normally distributed. ($p<0.34$). Frequencies, Descriptive statistics and independent t test were performed to compare between rural and urban areas. The questionnaire is checked for the internal consistency and Cronbach's alpha was obtained as 0.751 and 0.70 which states that it is of acceptable range for rural and urban population respectively. The study sample consists of 400 individuals in with 200 participants were rural i.e., MALES (69.5%), FEMALE (30.5%) and remaining 200 were living in urban I.E MALES (57%), FEMALES (43%) as illustrated in TABLE 1. The age of the sample population ranges from 30-50 years as illustrated in TABLE 2. Majority of respondents were male who are working as skilled and professional by occupation. as illustrated in TABLE 3.

Table 1 representing the distribution of study participants based on their Gender among the rural and urban population

Rural (%)		Urban (%)	
Males	Females	Males	Females
139 (69.5)	61 (30.5)	114(57)	86(43)

Table 2 representing the distribution of study participants based on their age group among the rural and urban population

Age in years	Rural Frequency (%)	Urban Frequency (%)
30-35	1 (0.5)	114(57)
35-40	93 (46.5)	85(42.5)
40-50	106 (53)	1(0.5)

Table 3 representing the distribution of study participants based on their occupation among the rural and urban population

Occupation	Rural (%)	Urban (%)
Professional	32 (16)	51(25.5)
Semi-professional	77(38.5)	13(6.5)
Skilled	32(16)	58(29)
Unskilled	35(17.5)	42(21)
Semi-skilled	10(5)	9(4.5)
Farmer	9(4.5)	18(9)
Student	5(2.5)	9(4.5)

Table 3 illustrates that the highest percentage in rural population is 38% who are semi-professional and least were 2.5% who are student; and highest in urban population was 29% who are skilled and lowest were 4.5% who were semi-skilled and students.

Table 4 representing the distribution of responses of OHIP-14 among the rural and urban population

Sl.No	**Question**	**Responses**	**Rural (%)**	**Urban (%)**
1.	**Have you had trouble pronouncing any words because of problems with your teeth, mouth or dentures?**	Never	44.0	59.0
		Rarely	39.5	26.0
		Occasionally	9.0	8.5
		Often	6.0	2.5
		Always	1.5	4.0

2.	**Have you felt that your sense of taste has worsened because of problems with your teeth, mouth or dentures?**	Never	43.0	54.0
		Rarely	25.5	21.5
		Occasionally	23.5	16.0
		Often	5.5	6.0
		Always	2.5	2.5
3.	**Have you had painful aching in your mouth?**	Never	13.5	18.5
		Rarely	31.0	32.0
		Occasionally	35.0	34.0
		Often	18.5	13.5
		Always	2.0	1.5
4.	**Have you found it uncomfortable to eat any foods because of problems with your teeth, mouth or dentures?**	Never	13.5	23.5
		Rarely	36.5	37.5
		Occasionally	29.5	25.5
		Often	15.0	10.5
		Always	5.5	3.0
5.	**Have you been self-conscious because of your teeth, mouth or dentures?**	Never	13.5	22.5
		Rarely	36.5	30.0
		Occasionally	29.5	16.0
		Often	15.0	12.0
		Always	5.5	19.5

6.	**Have you felt tense because of problems with your teeth, mouth or dentures?**	Never	21.5	33.0
		Rarely	39.5	34.5
		Occasionally	28.0	21.0
		Often	9.0	6.0
		Always	2.0	5.5
7.	**Has your diet been unsatisfactory because of problems with your teeth, mouth or dentures?**	Never	29.0	37.5
		Rarely	33.0	42.0
		Occasionally	21.5	12.0
		Often	13.5	5.0
		Always	3.0	3.5
8.	**Have you had to interrupt meals because of problems with your teeth, mouth or dentures?**	Never	24.0	33.5
		Rarely	39.5	37.5
		Occasionally	27.5	20.5
		Often	8.0	7.5
		Always	1.0	1.0
9.	**Have you found it difficult to relax because of problems with your teeth, mouth or dentures?**	Never	24.0	38.2
		Rarely	41.0	33.2
		Occasionally	23.0	18.1
		Often	11.0	6.5
		Always	1.0	4.0

10.	**Have you been a bit embarrassed because of problems with your teeth, mouth or dentures?**	Never	30.5	38.0
		Rarely	33.5	40.0
		Occasionally	23.5	14.5
		Often	11.0	5.0
		Always	1.5	2.5
11.	**Have you been a bit irritable with other people because of problems with your teeth, mouth or dentures?**	Never	36.5	44.0
		Rarely	33.0	33.5
		Occasionally	21.0	20
		Often	7.0	3.0
		Always	2.5	3.5
12.	**Have you had difficulty doing your usual jobs because of problems with your teeth, mouth or dentures?**	Never	26.0	42.2
		Rarely	33.0	31.7
		Occasionally	29.5	20.1
		Often	10.5	3.5
		Always	1.0	2.5
13.	**Have you felt that life in general was less satisfying problems with your teeth, mouth or dentures?**	Never	42.0	51.0
		Rarely	33.5	35.5
		Occasionally	18.5	7.0
		Often	5.5	4.0
		Always	0.5	2.5

14.	**Have you been totally unable to function because of problems with your teeth, mouth or dentures?**	Never	47.5	58.0
		Rarely	24.0	18.0
		Occasionally	15.0	16.5
		Often	9.5	3.0
		Always	4.0	4.5

Table 5 representing the Comparison of OHIP-14 Domains among the rural and urban population

Domain	Location	Mean±SD	Std.Error	P value
Functional Limitation	Rural	1.81±1.63	0.115	p<0.06
	Urban	1.48±1.81	0.128	
Physical Pain	Rural	3.27±1.60	0.114	p<0.003**
	Urban	2.79±1.68	0.119	
psychological discomfort	Rural	3.11±1.77	0.125	p<0.319
	Urban	2.93±1.93	0.137	
Physical Disability	Rural	2.51±1.64	0.116	p<0.002**
	Urban	2.00±1.62	0.115	
Psychological Disability	Rural	2.44±1.58	0.112	p<0.006**
	Urban	1.99±1.67	0.119	
Social Disability	Rural	2.34±1.58	0.112	p<0.114
	Urban	1.96±2.95	0.209	
Handicap	Rural	1.88±1.76	0.125	p<0.05*
	Urban	1.54±1.77	0.126	

Independent t test. Statistical significance set as p<0.05*

From the above table it is observed that there is a high statistical significance for physical pain (p<0.003**), Physical disability (p<0.002**) and psychological disability (p<0.006**) domains followed by potential statistical significance for Handicap domain (p<0.05*) between the two groups.

DISCUSSION:

This study focused to analyse the effects of oral conditions on the HRQoL. the OHIP-14 questionnaire is used to collect the data. High OHIP score indicates that the quality of life is poor. Whereas the lowest score indicates good quality of life. The results acquired by the data analysed shows significant differences between urban rural population based on the oral

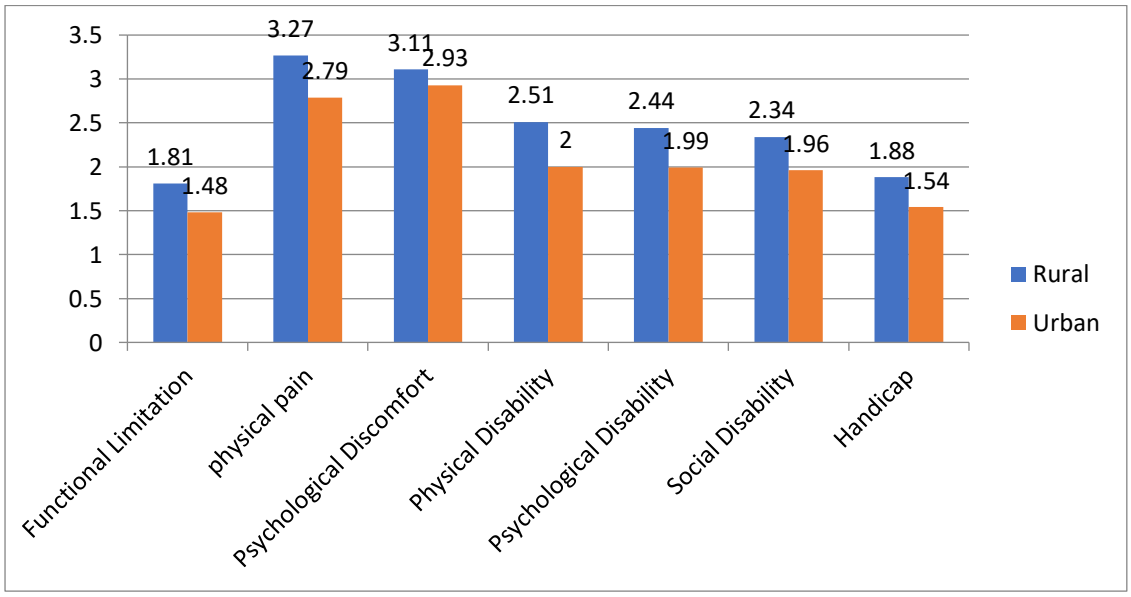
health and effects on life style. Based on the results acquired the poor OHIP score is seen in the rural population when compared to that of the urban population.

The major factors effecting the rural population are Physical Pain, Psychological Discomfort. The least concerning factor are functional limitation. The major cause of physical pain and psychological discomfort that came into consideration was oral condition such as dental caries, malocclusions and other dental related problems which effects the one's health related quality of life.

The study done by the Anju james et al [13] supports the statement.The result confirms that the oral conditions effect the general state of well-being. The analysis performed by the other authors has confirmed that the oral conditions such as dental caries, periodontal diseases are mostly observed in rural population than in urban population and effect the psychological health of the individual. It is due of poor health care facilities as well as improper knowledge of the problems. [13,14,15]

Where as in urban population the majorly effecting factors were psychological discomfort and the least concerning factors were functional limitation. The majorly effecting factor are increased work load & stress. The following bar graph represents the disparities among the urban and rural population.

Chart representing the mean values of domains for rural and urban population



Based on the study conducted by Fuad Akbar Husain et. al in Kutai Kartanegara Regency, Indonesia in 2017 analysis shows that highest OHIP score resulting in poor quality of life of the respondents in rural population and physical pain is the major component effecting the life style of the individual [8].and whereas in urban population due increased work load and stress are more concerning factors which s effecting the OHRQOL concluded that the due decreased educational knowledge and improper dental & medical facilities and improper knowledge in rural regions the OHRQoL is majorly effected when compared to the urban population which

is conformed in our results. And some other studies conducted by various authors such as Marilia.et.al in, Carneiro.et. al, Papaioannou W. et.al, Ahamad S. et. al has proved the same result.

STRENGTHS AND LIMITATIONS: -.

This review includes **Functional Limitation, Physical Pain, Psychological Discomfort, Physical Disability, Psychological Disability, Social Disability, handicap** all other conditions that effects the oral health related quality of life and comprehensively assessed the outcome of the data collected. Each study had a different methodology, depending on the age group, the criteria used to diagnose the problems, the instrument used to measure OHRQoL, and the association measures that were reported in the research were by using OHIP 14 questioner. There is less data, age group is taken b/w 20-50 should be increased, should be to evaluate the quality-of-life for more accurate results, there need of more participants to understand the relation between the oral health and quality of life.

CONCLUSION:

Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity and its effects are mostly associated with the oral health depending on various factors such as mental health etc. Oral health can be stated as the overall wellbeing of Oro maxillo facial structures which helps in performing daily functional habits such as chewing, breathing, and speaking and other physiological habits. Oral hygiene varies in different age groups i.e., from infants to senile age groups. It also varies based on the functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, handicap. Poor oral health had a negative influence on an individual which causes pain and discomfort to the individual during chewing, it also influences in association with a negative self-representation, could over the long term impact a person's ability to make proper decisions about one's health. Stressing the importance of oral health to the individual could help modify attitudes and improve the quality of life related to oral health. Even though there are many different abbreviations to the exposures and variety of instruments for measuring the OHRQOL, the review demonstrates that the experience of poor quality of life is substantially higher among individuals with dental caries and malocclusion. Due to the poor methodological quality of the research, the limited sample size, and the variability of the included studies, the evidence was low.

The participants from state of Andhra Pradesh who participated in the study shown that the good quality of life is mostly seen in association to the urban areas when compared to the rural areas. Even though there are different variable that effects the OHRQoL in both rural and urban population but based on the overall results rural community has poor OHRQoL than those in urban community. Given bidirectional relationship between impacts of oral health and health related quality of life improving oral health in rural and urban area may be a critical avenue to improve the health related quality of life in urban and rural communities

Further investigation should be conducted on the Oral Health Quality of Life of individuals with a significant sign of age, type of work, stress levels education level,

and livelihood, data etc. the data collected from these types of studies help dentist in proper handling an educating individuals about the importance of oral health , and also to provide additional valuable information for dental practitioners about the general thinking of the individual and importance the oral health to the individual and other psychological comforts based on the needs of the individual as well as acquiring and suppling the necessary resources and funds for dentistry. It is very crucial to place dental and oral health in the proper context.

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