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A Study to Assess the Oral Health Related Quality of Life among Eunuchs Residing in Central Gujarat

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Abstract--- Introduction: *The health and quality of life overall is affected by an individual's oral health. The low and middle income countries are affected by inadequate attention to the oral health which result in oral disease becoming a major public health problem that need to be addressed. This is the reason, recently, there is increasing attention and global awareness is given to the oral health and its various determinants. Oral Health-Related Quality of Life (OHRQoL) is defined by individual assessment of several oral health dimensions including physical dental function, tooth pain, psychological discomfort, and social impacts--all of which affect overall well-being. Self-reported subjective indicators of OHRQoL correlate well with objective clinical measures of oral health status. So OHRQoL at the individual level points to the need for clinical treatment and at the population level can be used to evaluate oral health interventions.*

Objectives: *To assess the OHRQoL using OHIP 14 and to analyze the association between the OHRQoL using OHIP 14 and various demographic variables.*

Methodology: *The survey was conducted among the 384 eunuchs population living central Gujarat. Non Probability snow ball sampling was used in inclusion of self identified Eunuchs. The data was recorded by one examiner (Primary Investigator) and one recorder (Calibrated dental hygienist) for the entire study. The data was collected through structured schedules resulting in quantitative data. The data was analyzed with Chi square test of Association, Mann Whitney U test and Kruskal Wallis Test using SPSS version 21.*

Results: *The study shows that out of 384 eunuchs, 1.04% were children less than 11 years, 3.9% are adolescents, 74.44% were adults who are more than 18 years and less than 60 years and the remaining sample, that is, 20.5% were more than 60 years. 27.5% of the participants had educational background, 87% of the participants were dentate and remaining were edentate. The Oral health related quality of life showed significant association and difference between the various parameters and the demographic variable.*

Conclusion: *In general, the quality of dental health and oral health related quality of life are interlinked and positively associated with the various demographic factors like gender, age group, education background and income. The eunuchs form a vulnerable population and an immediate action is required in preventive and promotive aspects to improve the oral health related quality of life which in turn would improve the overall quality of life. This in turn will drive this socially stigmatized community to have a positive dental health attitude and behavior.*

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Keywords--- *OHRQoL, OHIP, Eunuchs, Behavior, Attitude.*

I. INTRODUCTION

Oral Health is an important contributor in good quality of life. Majority of the developing nation have poor oral health because of the less importance given in these countries [1]. There are various factors that affect the oral health which is also an important factor in determining the oral health status [2]. The life style diseases are also seen to have an impact on the oral diseases like periodontal status, gingival status, caries, tooth loss etc. The risk factor of these lifestyle related diseases like poor dietary habits, tobacco habit and alcohol addiction are shown to have a significant association with poor oral health status [3]. The combined effect of all the factors that affect the oral health and chronic disease lead to poor quality of life among the population of any region.

Various oral health dimensions like tooth pain, tooth loss etc have an impact on the general well being of an individual [4, 5, 6]. The self reported indicators of Oral health related quality of life is seen to correlate with the clinical findings of oral health status [4, 5, 6, 7, 8]. Therefore, oral health related quality of life becomes an essential tool to get a clear idea of the general well being of the population.

The word EUNUCH is derived from a Greek word meaning "keeper of the bed" [9]. These transgender communities historically exist in many cultural contexts, known as Bakla in the Philippines, Xaniths in Oman, Serrers among the Pokot people of Kenya, and Kinnars, Jogappas, Jogtas, or Shiv-shaktis in South Asia [10].

One of the most vulnerable section in Indian Population are Hijras, meaning Eunuchs. There are so many social stigmas associated with this community that these people do not come out in open and even if they come out in open, they often resort to various debilitating lifestyle habits that affect their general well being and oral health in a negative sense. It is because of the fear of how they may be treated and most probable chance of being looked down upon, they do not seek a healthcare provider.In India many hijras live in well‐defined, organized,all‐hijra communities, led by a guru. The lack of being in an advantaged and privileged position in the society, they are devoid of a respectable living and are seen doing prostitution or earning money from families on any festive occasion. [11]All the above factors make them a vulnerable population in our country [12].

According to Telegraph report, India has an estimated 1.5 million eunuchs [13].Unlike in other parts of the world, the attitude towards a hijra in Indian society is discriminatory and biased in general. [14]. They are also denied general, oral health and psychological assistance [10]. The eunuchs in India have poor or no accessibility to basic medical and dental facilities. The stressful environment for eunuchs make them to resort to various debilitating habits. These factors contribute to a variety of oral health problems making their quality of life worse. The need to have an epidemiologic data for these groups to understand the status of their general well being and oral health, in particular should be the point of focus. The studies like that can help in development of group specific health policy and plans to uplift their well being. The objective of the present study is to assess the OHRQoL using OHIP 14 among the eunuchs residing in Central Gujarat and to analyze the association between the OHRQoL of eunuchs residing in Central Gujarat using OHIP 14 and various demographic variables.

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II. METHODOLOGY

Type of Study: Descriptive Cross-sectional survey as the study aims to assess the OHRQoL among Eunuchs residing in Central Gujarat.

Place of Study: The survey was conducted in Central Gujarat which includes Ahemdabad, Vadodara, Anand, Kheda, Panchmahal, Dahod and Chhota Udaipur.

Source of Data:The data was collected through primary source using WHO Oral Health Assessment Form for Adults (2013) and the OHRQoLwas assessed by OHIP 14 Gujarati Version

The approvals for conduction of the pilot study and main study were taken from gharana head of transgender community located in above mentioned areas.

Sample Description: As the study was a cross-sectional survey, the sample was selected using the following formula:

$$\frac{Z^2pq}{E^2}$$

Where| *Margin of error = e* | *z-score = z*

Z^2 is the abscissa of the normal curve that cuts off an area α at the tails (1 – α) equals the desired confidence level, e.g., 95%)1, e is the desired level of precision, p is the estimated proportion of an attribute that is present in the population, and q is 1-p.

Taking into consideration that the prevalence of positive oral health impact on quality of life be 0.50, p= 0.50 and q=0.50, the sample size is 384.

Inclusion Criteria

- Eunuchs: All the self-identified eunuchs willing to participate and gave informed consent during the study period were considered for the study.

Exclusion Criteria

- Participants with history of medication for any systemic illness (medically compromised patients).
- Participants who had mental disorders etc.

Prior permission was obtained from the ethics committee before the commencement of the study viz. SVIEC/ON/Dent/PhD/19020 dated 19/3/2019. Verbal and written consent from eunuchs fulfilling the inclusion criteria was taken prior to the examination. The informed consent form, assent form and participation information sheet were presented in Gujarati (local language). Non-Probability snow ball sampling was used in inclusion of self-identified Eunuchs. The data was recorded by one examiner (Primary Investigator) and one recorder (Calibrated dental hygienist) for the entire study. The data collected was edited, coded in MS Excel and analysis will be done in the appropriate statistical software.Data collected through structured schedules (quantitative data) will be analyzed using the following techniques:DescriptiveStatistics,Chi Square Test of Association and Kruskal Wallis Test.

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III. RESULTS

The results from the data collected from 384 eunuchs in Central Gujarat region were analyzed. The mean age of eunuchs is 38.64±4.81 years. Figure 1 shows the frequency distribution of eunuchs according to age group. The figure shows that 1.04% were children less than 11 years, 3.9% were adolescents, 74.44% were adults who are more than 18 years and less than 60 years and the remaining sample, that is, 20.5% were more than 60 years.

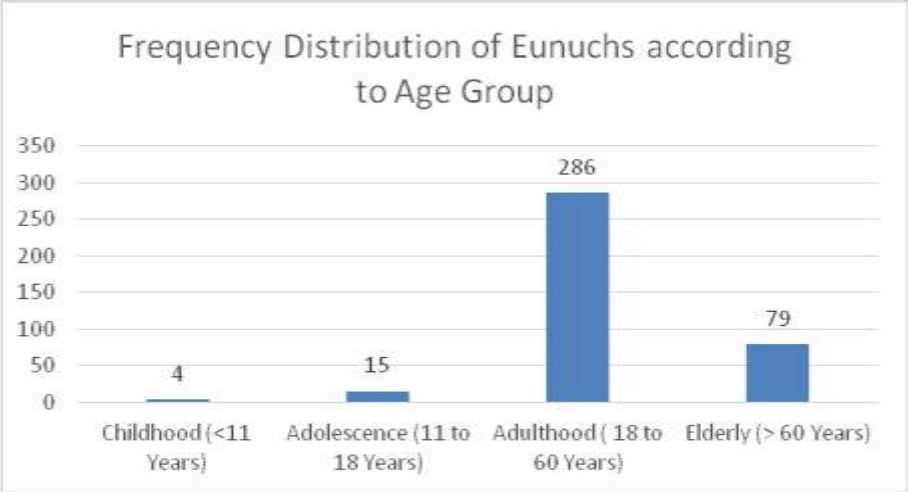

Figure 1

Figure 2 shows the frequency distribution of education status, out of 384 eunuchs, 230 were illiterate, 90 were those who passed 10th standard, 62 had studied till 12th Standard, only 2 were graduates and none had done the post-graduation.

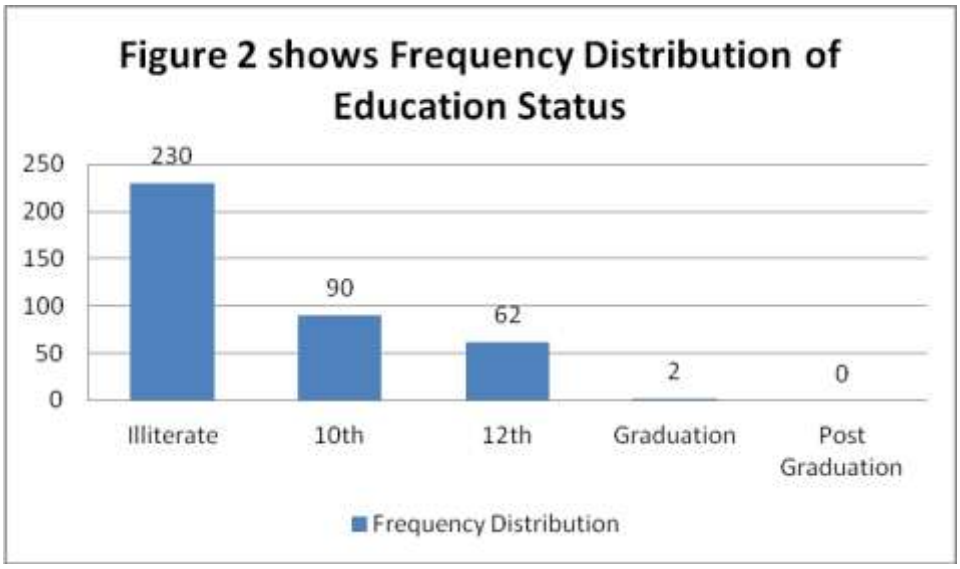

Figure 2: Shows Frequency Distribution of Education Status

Figure 3 shows the frequency distribution of dentate status, out of 384 eunuchs, 291 were dentulous, 77 were partially edentulous, and 16 were completely edentulous.

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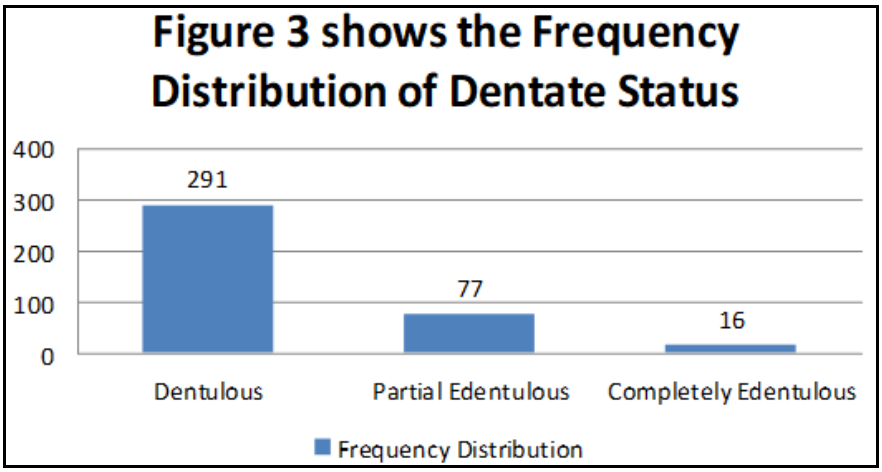

Figure 3: Shows the Frequency Distribution of Dentate Status

The table 1 shows the association between the parameters of OHIP and demographic characteristics. The chi square test of association shows that there is an association between OHIP parameters and age group of eunuchs. The OHIP parameters were present in all the age groups. However, with respect to dentate status and education status, p value of chi square test of association is statistically significant and shows that the education status and dentate status has an impact on poor oral health profile of eunuchs.

Table 1: Shows the Cross-tabulation between OHIP-14 and Demographic Characteristics

Demographic Characteristics	***Difficulty in Speaking***	***Difficulty in Swallowing***	***Difficulty in Chewing***	***Social Disability***	***Pain***	***Chi-Sq. (p value)***
Age Group						
Childhood (Less than 11 Years) (04)	25% (01)	50% (02)	50% (02)	75% (03)	50% (02)	17.47 (0.67)
Adolescents (11 to 18 Years) (15)	66.66% (10)	73.33% (11)	46.67% (07)	86.67% (13)	46.67% (07)	
Adulthood (18 to 60 Years) (286)	49.2% (189)	73.77% (211)	72.37% (207)	93.7% (268)	62.23% (178)	
Elderly (More than 60 Years) (79)	86.07% (68)	72.15% (57)	86.07% (68)	100% (79)	79.74% (63)	
Education Status						
Illiterate (230)	29.56% (68)	16.60% (38)	33.40% (77)	68.60% (158)	49.00% (113)	23.67 (0.034)
10th (90)	22.10% (20)	15.70% (14)	35.10% (32)	63.50% (57)	63.60% (57)	
12th (62)	28.10% (17)	17.70% (11)	45.20% (28)	61.20% (38)	55.80% (35)	
Graduation (2)	100% (2)	100% (2)	100%(2)	100%(2)	100%(2)	
Dentate Status						
Dentulous (291)	22.10% (64)	15.60% (45)	25.60% (74)	63.90% (185)	52.80% (154)	22.56 (0.022)
Partially Dentulous (77)	22.40% (22)	16.30% (13)	26.20% (21)	72.50% (56)	62.60% (48)	
Completely Edentulous (16)	71.40% (11)	45.60% (7)	25.60% (4)	61% (10)	85.40% (13)	

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The table 2 shows the difference between the OHIP parameters based on demographic characteristics. With respect to gender of eunuchs, the p value of Kruskal Wallis test is less than 0.05 indicating that there is a difference between OHIP Parameters based on age group, education status and dentate status.

Table 2: Shows the difference in OHIP 14 Profile based on Demographic Characteristics Using

Demographic Characteristics	*Mean Rank*	*Test Value (p value)*
Gender		
Childhood (Less than 11 Years) (04)	34.56	Mann Whitney: 44.7 (0.78)
Adolescents (11 to 18 Years) (15)	36.63	
Adulthood (18 to 60 Years) (286)	35.78	
Elderly (More than 60 Years) (79)	34.42	
Education Status		
Illiterate (230)	32.33	Kruskal Wallis: 48.89 (0.03)
10^{th} (90)	34.57	
12^{th} (62)	31.66	
Graduation (2)	36.45	
Dentate Status		
Dentulous (291)	34.21	Kruskal Wallis: 25.77 (0.023)
Partially Dentulous (77)	22.34	
Completely Edentulous (16)	30.72	

IV. DISCUSSION

The current cross‐sectional, questionnaire survey wasconducted with the aim of assessing oral health‐related quality of life and assess the association between OHIP parameters with various demographic characteristics. This was the unique, first of its kind, pioneeringstudy which revealed the oral health‐related quality of life of eunuchs using OHIP 14. Snowball sampling technique was used which is similar to the study conducted by Hongal S et al.[14] Because of privacy concerns of this community there was problems in data collection as they prefer living in secrecy. [14]It was seen that the eunuchs were aware about the dental facilties available in their locality, majorly because of the begging. The study revealed that the oral health related quality of life among eunuchs was very poor which could be because of their education status where majority of them were illiterate. A similar finding was seen in study conducted by Hongal S et al.[14] and Torwane N et al.[17]

The poor oral health related quality of life was associated with all the demographic characteristics of eunuchs. This was similar to study conducted by Torwane N et al[17], Dangi et al[18] and Stronks et al[19]in which the association of oral mucosal lesions was highest with variables such as frequency of tobaccoconsumption, occupation, and educational status.

Hongal. S et al[14] showed in their study that the level of dental health knowledge, positive dentalhealth attitude, and dental health behaviors were interlinked andpositively associated with the level of education as an educatedindividual gains the requisite knowledge from multiplesources.This adds on to the findings of the present study indicating that there is an immediate need to develop the preventive and promotive strategies which help in improving the oral health related quality of life of eunuchs. This in turn will motivate thissocially stigmatized community to have a positive dental healthattitude and behavior.

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V. CONCLUSION

The result highlight the vulnerability of the eunuch population. The study revealed that majority of the eunuchs had difficulty in all the parameters of OHIP profile to assess the oral health related quality of life. The poor oral health related quality of life is an alarming concern for the Indian population. Irrespective of any of the demographic characteristics, the oral health related quality of life is poor for eunuchs. The health authorities should be alarmed at this state and develop health preventive and promotive policies that are specific for this population. Various incentive schemes, educating the eunuchs and changing the attitude of general population towards them should be the point of focus for health planning authorities. Various social media campaigns highlighting the importance of every individual irrespective of their sexual preference should be done. A step towards developing and implementing an accessible and affordable health plan will help in coming a step closer towards sustainable development goals.

Conflict of interest: There is no conflict of interest in this study.

Source of Funding: This is a self Funded research

Ethical Consideration: Ethical clearance was obtained from Sumandeep Vidyapeeth Ethics Committee viz. SVIEC/ON/Dent/PhD/19020 dated 19/3/2019

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