

Impact of Perceived Chronic Social Adversity on the Oral Health Status among Eunuchs in Vishakhapatnam City: A Cross-Sectional Study

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Abstract

Background: Transgenderism in India is a widely known culture yet mainstream population has no proper awareness about the community. They are maltreated and oppressed socially and mostly; they are disowned by their own family due to the fact of being a transgender. Social adversity, an umbrella term refers to issues such as violent crime, segregation, exposure to delinquent peers, poverty, and poor parenting, is one of the strongest risk factors for developing an antisocial behavior. **Aim:** The aim of the study was to assess the impact of perceived chronic social adversity (PCSA) on the Oral Health status among Eunuchs. **Materials and Methods:** This cross-sectional study included 60 study participants. PCSA scale was used to assess the level of chronic social adversity. Clinical examination was done using the WHO oral health assessment form 2013. Data were analyzed using SPSS version 20, ($P < 0.05^*$) was considered as statistically significant. Chi-square test was used. **Results:** A total of sixty Eunuchs had taken part in answering the questionnaire and completing the examination. Mean age is 35.5 years. The highest correct response rate recorded of all questions was 39% where 23 participants agreed that they always feel abandoned ($P \leq 0.005^*$). In the age group, 27–36 years showed the highest prevalence of poor oral health status. **Conclusion:** We observed that there is a negative impact of social adversity on the oral health status on eunuchs. This present study showed the view of oral health as an outcome which shares an array of psychosocial, biological, and social factors interplay.

Keywords: Eunuchs, Social adversity, Oral health status, Cross cultural adaptation.

INTRODUCTION

The word “EUNUCH” is derived from a Greek word meaning “keeper of the bed.” They are considered as one of the most vulnerable sections in the Indian Population who go by the name of “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. They are also called as transgenders, transsexuals, and transvestites in English and colloquially hijras, alis, kothis, double deckers, and panthis in India which is a widely known culture yet mainstream population that has no proper awareness about this community.^[1] Most of the time, they are maltreated and oppressed socially and disowned by their own family due to the fact of being a transgender. In Indian context, Hijras are seen as a “third gender” which is neither male nor female but contains elements of both.^[2] In addition, India has no proper data on their socio-economic status. Since the beginning of

time and the existence of mankind, transgender has been very much a part of the society. It is just that they have been given a name and a status in the society in recent times. They are denied general, oral health and psychological assistance and the accessibility to medical and dental facilities for the eunuchs is nearly nonexistent.^[3] The prevalence of dental caries and periodontal diseases are considerably higher in the developing countries like India which is one of the major emerging market economies with a population of over 1 billion and is very diverse in geography, culture, tradition, habits and even race. This diversity also extends to literacy rates, health indicator rates infant mortality rate and hygiene practices.^[4]

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they constitute the marginalized section of the society in India and thus face legal, social as well as economic difficulties as they are “tolerated but not accepted.” Due to these reasons, they might be at a high risk of developing severe dental problems like tooth loss.^[5]

Indian Census has never recognized third gender, that is, Transgender while collecting census data for years. But in 2011, data of transgender were collected with details related to their employment, literacy, and caste. In India, total population of transgender is around 4.88 Lakh as per 2011 census. The 2011 census also reported 55,000 children as transgender identified by their parents.^[6]

Census 2011 in India showed a total transgender population stands with 4, 87,053 with highest cases in Uttar Pradesh stands with 1, 37,465 and least in Kerala; 3,902. Andhra Pradesh accounts about 43,769 eunuchs whereas in Vishakhapatnam there are about 1500 eunuchs Children transgender population stands with 58,854.

Although they constitute a little percentage of the total population, it is essential to extend our knowledge and facilities to improve the oral health status of this population.^[7]

A Report on Fifth Annual Employment - Unemployment Survey 2015-16 shows the involvement of transgender in different categories of employment. Transgender is leading in a Self-employed category that is 44.9% in the UPS (Usual Principal Status) as well as UPSS (Usual Principal and Subsidiary Status) approach followed by casual labor 31.5%, wage/salary earners 19.6%, and contract workers 4.9% in the UPS and 4.7% in the UPSS approach.^[8]

Social adversity, an umbrella term that refers to issues such as violent crime, segregation, exposure to delinquent peers, poverty, and poor parenting, is one of the strongest risk factors for developing antisocial behavior.^[9] Early and continued exposure to social adversity has detrimental effects for developing youth and can exacerbate preexisting behavioral issues.^[10]

Research shows that the progression of antisocial behavior and subsequent delinquency is shaped by antisocial attitudes, poor schooling and a lack of collective efficacy in the community, delinquent peer affiliations during adolescence, and malnutrition.^[11] Behavioral genetic studies have also demonstrated that shared and non-shared environmental influences play significant roles in predisposing individuals to antisocial behavior. In addition, the social environment influences biological risk factors that have been linked to antisocial and criminal behavior. There is no data regarding the impact of this on the oral health.

Need for the study

Antisocial behavior and social environment influence biological risk factors that have been linked to have an impact of this on the oral health.

The goal of this research was to assess the level of exposure to perceived chronic social adversity (PCSA) and help to achieve

a positive outcome in the long term to a positive impact on their oral health.

Therefore, this study was done to assess the impact of perceived social adversity on the oral health status of eunuchs.

Ethical consideration

This study was approved by Anil Neerukonda Institute of Dental Science Visakhapatnam, AP Institutional Ethical Committee [Ref No. ANIDS\IEC\2121014]. Throughout the study, confidentiality of data was preserved.

MATERIALS AND METHODS

Study setting

This cross-sectional study was conducted to investigate the Impact of PCSA on the oral health status among Eunuchs in Vishakhapatnam city, Andhra Pradesh.

Informed consent

The study protocol was explained and written informed consent which explained the study objectives was obtained from each study participant.

Source of data

The data are primary in nature and study subjects comprises self-identified eunuchs residing in the Vishakhapatnam city.

Sampling design and sample selection

The study took place in Vishakhapatnam and all the self-identified eunuchs residing in the city of Vishakhapatnam who fulfilled the inclusion criteria were enrolled in this study. Information about the residence of the eunuchs is being based on interviews with local informants and prominent localities in Vishakhapatnam are identified. All the identified areas were visited and eunuchs residing in these areas were contacted.

The lists of identified areas are:

- Kancherapalem
- Seethamadhara
- Railway New Colony
- Burma camp

As the study participants are a hard-to-reach population, snow ball or chain referral sampling technique was applied; that is, study subjects in their respective residing areas are contacted and existing study participants' recruited future subjects from among their acquaintances were contacted. Finally, a total of 60 eunuchs were identified.

Inclusion criteria

The following criteria were included in the study:

- Participants who were willing to participate and who gave informed consent were included in this study
- Participants belonging to age groups between 17 and 60 years.

Exclusion criteria

- Participants who are not willing to participate were excluded from the study

- Participants who did not give informed consent were excluded from the study
- Participants who have systemic diseases were excluded from the study.

Structure of the questionnaire

To assess the social adversity; PCSA scale was used. The scale consists of a pretested validated questionnaire containing 28 close ended questions with a five-point Likert scale; with options ranging from strongly agree to strongly disagree in three domains; Obvious Social Exclusion, Over Control Social Exclusion and Weakness in Social Competition. The questionnaire was modified to 20 questions. Prior permission was obtained by the main researcher of the article and the approval was granted. The questionnaire initially in English was translated into Telugu language and the re-translated back to English to check for cross cultural adaptation that encloses both the language and cultural adaptation into the study participants. The interview was conducted in regional language (Telugu).

Data collection

The data which are primary in nature were obtained using the WHO oral health assessment form 2013. Clinical examination (ADA Type 3) was conducted by a single examiner under natural light, using mouth mirror, CPI probe with the study population seated on upright chair.

Statistical analysis

All the obtained data were entered into Microsoft Excel sheet and analyzed using Statistical Package for the Social Science

(SPSS, IBM, USA) version 21. The statistically significant level was set at < 0.05 with confidence interval of 95% and Chi-square test was used.

RESULTS

Data of the study population showed a total of sixty Eunuchs had taken part in answering the questionnaire and completing the examination. Mean age is 35.5 years. Table 1 shows the impact of chronic social adversity on the trauma comprising a total of 20 questions altogether. The highest correct response rate recorded of all questions was 39% where 23 participants agreed that they always feel abandoned. About 42.4% respondents answered that they are subjected to physical violence.

Table 2 showed the prevalence of oral health status of the study participants with respect to their age group. Dental caries, gingival bleeding, pockets, loss of attachment, trauma, oral mucosal lesions, and interventional urgency showed the highest in the age group of 27–36 years with a prevalence of 51.7%, 61.7%, 61.7%, 51.6%, 51.6%, 78.3%, and 45%, respectively, and least is seen in the age group of 58–70 years.

Table 3 showed the impact of PCSA scale on the oral health status. The questions were grouped into three domains, that is, obvious social exclusion domain which showed a significant association, over control social exclusion domain, and weakness in social competition domain in which showed statistical significance.

Table 1: Impact of perceived chronic social adversity

S. No.	Question	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1.	Do you always feel abandoned? 0.05*	43 (71.6%)	17 (28.3%)	0	0	0
2.	Are you always being Ill-treated? 0.05*	54 (89.4%)	4 (10.6%)	0	0	0
3.	Do you always feel ignored? 0.05*	49 (81.6%)	21 (35.1%)	0	0	0
4.	Do you always feel deceived?	23 (38.3%)	47 (78.3%)	0	0	0
5.	Do you always feel isolated?	16 (26.6%)	44 (73.3%)	0	0	0
6.	Do you always feel rejected? 0.045*	51 (84.9%)	2 (15.1%)	0	0	0
7.	Do you always feel humiliated?	59 (98.4%)	1 (1.6%)	0	0	0
8.	Do you always feel derogated?	18 (30.2%)	42 (69.8%)	0	0	0
9.	Do you always feel slandered?	20 (33.3%)	40 (66.6%)	0	0	0
10.	Do you always feel doubted?	20 (33.3%)	3 (66.6%)	0	0	0
11.	Do you always feel your feelings are being changed by someone? 0.05*	1 (1.6%)	59 (98.3%)	0	0	0
12.	Do you feel your freedom to speak is restricted?	0	3 (5.0%)	7 (11.6%)	40 (66.6%)	10 (16.6%)
13.	Are your decisions being made by someone else? 0.05*	7 (11.6%)	53 (88.3%)	0	0	0
14.	Do you feel someone your actions are being changed by someone else all the time?	0	0	11 (18.3%)	19 (31.6%)	30 (50%)
15.	Do you always be blamed for other's actions?	0	0	4 (6.6%)	33 (55%)	23 (38.3%)
16.	Is your past being bought up every time when you argue with someone? 0.05*	4 (6.6%)	55 (91.1%)	0	0	0
17.	Are you being subjected to any physical abuse?	60 (100%)	0	0	0	0
18.	Do you always feel threatened?	3 (5.0%)	5 (8.3%)	2 (3.3%)	47 (78.3%)	3 (5.1%)
19.	Is there someone who always cares about you?	3 (5.0%)	2 (3.3%)	13 (21.6%)	32 (53.3%)	0
20.	Do you always fail in applying a job?	39 (65.0%)	8 (13.3%)	3 (5.0%)	0	0

$P \leq 0.005$ * statistically significant, $P \leq 0.001$ ** highly statistically significant

Table 2: Prevalence of oral health status according to age group

Age (In years)	Dental caries (0.01*)	Gingival bleeding (0.806)	Pockets (0.004*)	Loss of attachment (0.543)	Trauma (0.844)	Oral mucosal lesions (0.274)	Interventional urgency (0.155)
16–26	12 (18.3%)	5 (8.3%)	5 (8.3%)	5 (8.3%)	5 (8.3%)	2 (3.3%)	15 (25.0%)
27–36	30 (51.7%)	37 (61.7%)	37 (61.7%)	37 (51.7%)	31 (51.6%)	47 (78.3%)	27 (45.0%)
37–47	10 (16.7%)	10 (16.7%)	10 (16.7%)	10 (16.7%)	16 (26.6%)	7 (11.6%)	10 (16.7%)
48–56	4 (6.7%)	4 (6.7%)	4 (6.7%)	4 (6.7%)	8 (13.3%)	5 (8.3%)	4 (6.7%)
58–70	4 (6.7%)	4 (6.7%)	4 (6.7%)	4 (6.7%)	0 (0%)	4 (6.7%)	4 (6.7%)

$P \leq 0.005$ * statistically significant, $P \leq 0.001$ ** highly statistically significant

Table 3: Impact of the PSA scale on oral health status

Domains	Oral health status	P-value
Obvious social exclusion	Dental caries	0.004*
	Gingival bleeding	
	Pockets	
	Loss of attachment	
	Trauma	
	Oral mucosal lesions	
Over control social exclusion	Dental caries	0.114
	Gingival bleeding	
	Pockets	
	Loss of attachment	
	Trauma	
	Oral mucosal lesions	
Weakness in social competition	Dental caries	0.001*
	Gingival bleeding	
	Pockets	
	Loss of attachment	
	Trauma	
	Oral mucosal lesions	

$P \leq 0.005$ * statistically significant, $P \leq 0.001$ ** highly statistically significant

DISCUSSION

This study was the first of its kind to be conducted among eunuchs to assess the impact of chronic social adversity on their oral health status. A number of studies have examined the oral health, but there is no reference to the connection between the PCSA and its oral health.

Research in the social epidemiology of oral health has quantified the contribution of various sociopolitical, societal, and health system factors to a number of oral health conditions (Baker and Gibson 2014). The results are in our study are in line with study done by Idsoe *et al.* (2012) and Matthiesen and Einarsen (2004), who demonstrated an association between PTSD and bullying in eunuchs that has a negative social impact.

A pretested, validated questionnaire was used to assess the exposure to three types of stressful/negative events: Obvious or obscure social exclusion, over control, and weakness in social competition.^[12] A total of 60 participants enrolled in this study. About 40% of study participants strongly agreed that they felt abandoned which showed an impact on the trauma. Majority of the participants strongly agreed to physical abuse which

showed an urgent need for interventional urgency as eunuchs who most of them working as sex workers are subjected to abuse. All the study participants showed dental caries, periodontal pockets, and loss of attachment which indicates the poor oral health status requiring interventional urgency. About 39% of the study participants who strongly agreed to having episodes of humiliation, slandering and who felt abandoned showed a positive impact on the oral mucosal lesions as the issues such as violent crime, segregation, exposure to delinquent peers, poverty become embedded into their minds which pave way for these habits to happen. Participants are aware of their oral health, there are multiple socioeconomic disadvantages that members of particular group experience which limits their access to health particularly oral health. Also the age group of 27–36 years showed the highest prevalence of oral conditions which may be due to the fact that they were subjected to humiliation and as an outcast. Socially vulnerable groups and those who report difficulty in accessing or affording dental care continue to shoulder the greatest burden of oral disease (Watt *et al.* 2019).^[12,13]

Social adversity had shown to associate with increased dental caries in children and with poorer maternal caretaking behaviors (Masterson and Sabbah, 2015).^[14]

Eunuchs are one of these neglected special vulnerable groups in India projected as an outcast, where special attention is required to improve the overall oral health. This study showed a marked rise in consumption of tobacco among eunuchs with a frequency of consuming these products many times a day. This higher usage of tobacco can be due to psychosocial stress in their unfavorable social position, the lack of awareness on the ill effects of these habits. Table 3 showed the association between the PCSA scale and oral health status, the questions were grouped into three domains. The obvious social exclusion domain comprised questions in which they were asked if they were subjected to humiliation, derogation, etc., and over control social exclusion domain deals with one's impact on their mental health and the last domain weakness in social competition deals in challenges they face in social participation like as in securing a job. Hence, there shows an immediate need of developing strategies which are more promotive and preventive which will direct eunuchs in improving their oral health. This, in turn, drives this socially stigmatized community to have a positive dental health.

Strengths

- This is the first study to assess the impact of perceived social adversity on oral health
- Accessing these population created an impact on their oral health and referred to our institute
- Accessing these population helped in providing oral health education followed later by a screening and treatment camp.

Limitation

- Small sample size limits true representation of the study
- Response bias
- Social desirability bias.

CONCLUSION

Social adversity had a negative impact on the oral health status of eunuchs. This present study showed the view of oral health as an outcome which shares an array of psychosocial, biological, and social factors interplay. Efforts are to be done that increases patient awareness and intercept the habits that are detrimental to their oral health of eunuchs. This allows in reduction in oral disease burden with an ultimate goal of improving the oral health.

Public health significance

Developing specific dental care programs involving oral health education with preventive and curative dental care that aim at improving oral health status of this community and cessation counseling can also be implemented. This can be done in collaboration with government and non-government organizations and further studies are to be conducted to explore the relationship between PCSA and oral health.

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