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

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

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**Aim:** Aim was to assess the impact of Perceived Chronic Social Adversity on the Oral Health status among Eunuchs.

**Materials and Methods:** This cross-sectional study included 60 study participants. Perceived Chronic Social Adversity (PCSA) scale was used to assess the level of chronic social adversity. Clinical examination was done using WHO oral health assessment form 2013. Data was analyzed using SPSS version 20, ( $P \leq 0.05^*$ ) 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 impact of chronic social adversity on the oral health status comprised 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 ( $P \leq 0.005^*$ ). In the age group 27-36 years showed the highest prevalence of poor oral health status.

**Conclusion:** In summary, we observed that there is indeed an 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.

## I. AIM

To assess the impact of Perceived Chronic Social Adversity and Oral Health among Eunuchs.

## II. OBJECTIVES

- To assess the level of Perceived social Adversity using Perceived Chronic Social Adversity (PCSA) scale.
- To assess the Oral Health Status using WHO oral health assessment form 2013.

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## III. 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.<sup>1</sup> 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.<sup>2</sup> In addition, India has no proper data on their socio-economic status. Since the beginning of time and the existence of mankind, transgender have 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.<sup>3</sup> 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 (IMR) and hygiene practices.<sup>4</sup> 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.<sup>5</sup>

Indian Census has never recognized third gender i.e. 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.<sup>6</sup>

In India, 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. Children transgender population stands with 58,854.

Though they constitute a little percentage of the total population, it is essential to extend our knowledge and facilities in order to improve the oral health status of this population.<sup>7</sup>

A Report on Fifth Annual Employment - Unemployment Survey 2015-16 shows the involvement of transgender in different categories of employment. Transgender are 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.<sup>8</sup>

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.<sup>9</sup> early and continued exposure to social adversity has detrimental effects for developing youth, and can exacerbate preexisting behavioral issues.<sup>10</sup>

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.<sup>11</sup> 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.

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

#### IV. 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.

#### V. MATERIALS AND METHODS

##### a) Study Setting

This cross-sectional study was conducted to investigate the Impact of Perceived Chronic Social

Adversity on the Oral Health Status among Eunuchs in Vishakhapatnam city, Andhra Pradesh.

##### b) Informed consent

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

##### c) Source of data

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

##### d) 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; i.e. 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.

##### e) Inclusion criteria

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

##### f) Exclusion criteria

- Participants who are not willing to participate were excluded.
- Participants who did not give informed consent were excluded.
- Participants who have systemic diseases.

##### g) Structure of the questionnaire

To assess the social adversity; perceived chronic social adversity (PCSA-28) 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. The questionnaire is modified with final of 20 close ended 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).

#### h) Data collection

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

#### i) Statistical analysis

All the obtained data was entered into Microsoft excel sheet and analyzed using Statistical Package for Social Science (SPSS, IBM, USA) version 21. The statistically significant level was set at less than 0.05 with confidence interval of 95% and chi square test was used.

## VI. 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. 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 perceived chronic social adversity scale on the oral health status. The questions were grouped into three domains i.e., 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	<sup>(0.005*)</sup> Do You Always Feel Abandoned?	43 (71.6%)	17(28.3%)	0	0	0
2	Are You Always Being Ill-Treated?	54 (89.4%)	4 (10.6%)	0	0	0
3	Do You Always Feel Ignored?	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?	51 (84.9%)	2 (15.1%)	0	0	0
7	<sup>(0.005*)</sup> 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?	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?	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?	4 (6.6%)	55 (91.1%)	0	0	0
17	<sup>(0.005*)</sup> 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 (0.136)	Gingival bleeding (0.806)	Pockets (0.379)	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
<b>Obvious Social Exclusion</b>	Dental caries	0.004*
	Gingival bleeding	
	Pockets	
	Loss of attachment	
	Trauma	
	Oral mucosal lesions	
<b>Over control Social Exclusion</b>	Dental caries	0.114
	Gingival bleeding	
	Pockets	
	Loss of attachment	
	Trauma	
	Oral mucosal lesions	
<b>Weakness in Social Competition</b>	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

## VII. DISCUSSION

A number of studies have examined the oral health, but there is no reference to the connection between the social adversity and its oral health. This study was conducted among eunuchs to assess the impact of chronic social adversity on their oral health status. 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<sup>12</sup>. A total of 60 participants enrolled in this study. 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. 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 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 a outcast. 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 of 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.

#### Limitation

Small sample size limits true representation of the study.

### VIII. CONCLUSION

In summary, we observed that there is indeed an impact of perceived 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. Efforts are to be done that increases patient awareness of the oral effects of tobacco use and to eliminate the habit are needed to improve the oral and general health of eunuchs. This allows in reduction in oral disease risk prediction with an ultimate goal of improving the oral health.

#### Public Health Significance

Oral health education should be given to their community explaining about the ill effects of pernicious habits like smoking, tobacco usage and development of specific dental care programs involving both health education and preventive and curative dental care and implementing behavioral interventional programs that aim at providing alternative jobs. This should be done in collaboration with government and non-government organizations and further studies are to be conducted to explore the relationship between perceived chronic social adversity and oral health.

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