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Evaluation of impact of substance abuse on oral hygiene practices: An epidemiological survey

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Abstract
To evaluation of impact of substance abuse on oral hygiene practices by an epidemiological survey at the de addiction centres.
Methods: A survey was systematically scheduled to spread over a period of 6 months from November 2017 to April 2018. A total of all 350 available substance abusers attending many de-addiction centers (four) aged 18-64 years of Patna district constituted the study population. Exclusively designed questionnaire was prepared to assess the oral hygiene practices followed by the abusers in the de addiction centre.
Results: Overall 53.7% uses tooth brush and 29.4% of the study subjects did not used any cleaning aids. 59.1% subjects used tooth paste but 22.9% did not use any type of material for maintaining the oral hygiene. 59.2% subjects brushed their teeth once a day but 29.4% of the study subjects did not brushed their teeth at all.
Conclusion: The deteriorated oral health status among the substance abusers could be highly contributed by the poor oral hygiene practices followed by the abusers.

Keywords: substance abuse, de addicion programs, oral hygiene practices.

Introduction
A sound mind in a sound body has been recognized as a social idea for many centuries [1]. Impressive improvements in the socio-economic, nutrition and health status of people as well as successful eradication, elimination and control of major killer diseases have contributed largely to the resultant epidemiological and demographic transitions which are quite explicitly observable in the country. [2]
The history of substance abuse is as old as mankind itself but recently it has become a global problem that is influenced by changing cultural values, increasing economic stress and dwindling of supportive bonds are leading to initiation into substance use. In the present scenario, substance abuse and dependence has become a public health crisis not only in developed countries but also in developing countries. Substance abuse is one of the major threats to public health in the developed world and increasingly more in the developing world.
According to World Health Organization "substance abuse is persistent or sporadic drug use inconsistent with or unrelated to acceptable medical practice." It is considered as a major cause of premature death, preventable ill health and social harm throughout the population [3, 4]. The World Health Organization (WHO) defines Substance abuse as ''Harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs''.
Repeated use of these substances can lead to dependence syndrome (a cluster of behavioural, cognitive, and physiological phenomena) which involves a strong desire to take the drug and difficulties in controlling its use. Though it is a preventable and treatable disease with effective prevention and treatment interventions, people suffering from it are stigmatized and many a times have no access to treatment and rehabilitation. The WHO reports that the main location for treatment of substance use disorders is the specialist substance abuse system, followed by the mental health system, the general health system, and primary care [4].
Currently, India is not merely a country for the transit of such drugs from the 'Golden Triangle' or 'Golden Crescent'; it has also become a country of Consumption. The geographic location of India, wider availability and usage of drugs in the country, a socially varied mix of users, cutting across caste, class and creed boundaries and the breakdown of traditional values resulting in part from large scale rural-urban migration have contributed to the rise in the number of drug abusers in recent years. Therefore, drug abuse has to be viewed as a bio-psycho-social problem, which requires a combination of medical treatment and psycho-social intervention. [5]
It is definite that the substance abusers undergoing treatment would have negative impact on the general healthy lifestyle. There is very few investigations till date conducted to evaluate the regular oral hygiene practices followed by the abusers undergoing treatment. Therefore, the present study aimed to evaluation of impact of substance abuse on oral hygiene practices: an epidemiological survey.

Methodology
A survey was systematically scheduled to spread over a period of 6 months from November 2017 to April 2018. A total of all 350 available substance abusers attending many de-addiction centers (four) aged 18-64 years of Patna district constituted the study population. The proposed study was reviewed by the Ethics committee of Buddha Institute of Dental Sciences and Hospital, Patna and clearance was obtained. Informed consent was obtained from the concerned authorities of the selected de-addiction centers and also from the subjects participating in the study.

Inclusion Criteria
1. Individuals whose behavior was under control as assessed by the in house medical officer. (Subjective interpretation by the medical officer)

2. Those who gave consent to participate

Exclusion Criteria

a) Medically compromised individuals will not be included.
b) Those who do not consent for the study will be excluded.
c) Uncontrolled behaviors of inmates

A specially prepared and pretested format, exclusively designed questionnaire was prepared beforehand regarding the assessment of their general details of the participants. The questionnaire was prepared incorporating questions regarding the oral hygiene practices followed by the participants in the de addiction centre.

Statistical analysis

The data so obtained was compiled systematically. The various parameters used for the purpose of analysis were arithmetic mean, standard deviation and standard error. Data was analyzed using IBM SPSS, Statistics Windows, version 22 (Armonk, NY: IBM Corp). For the comparison of proportions, chi-square test was used and 'p' value < 0.05 was considered as statistically significant.

Results

A total of 350 study subjects aged 18-64 years were included in the study. A total of 4 de-addiction centres were selected representing the reference population under study. The present study was conducted to assess the "oral hygiene practices followed by the substance abusers attending de-addiction center's among adult population in Patna, Bihar.

Of the total (350) subjects examined, 257 were males and the rest 93 participants were females. A majority of the subjects 34.3% belonged to 21-30 years age group; followed by 25.7% with 31– 40 years age group and 20.3% and 10.3% were with 41-50 years and less than 20 years age group respectively.

Oral hygiene of the subjects under study were assessed by various parameter such as the cleaning aids used, method of cleaning, the frequency of tooth brushing and the materials used for cleaning. An overall 53.7% uses tooth brush for cleaning their teeth, followed by 12.1% who used finger and 4.8% uses indigenous neem stick for cleaning. 29.4% of the study subjects did not used any cleaning aids. Gender wise distributions of the subjects in relation to cleaning aids used are as follows. Among males, 57.6% used tooth brush for cleaning their teeth, followed by 12% and 4.7% who used finger and indigenous Neem stick respectively. 25.7% did not use any cleaning aids. Among females 43% used tooth brush, followed by 11.8% who used finger and the least 5.4% used indigenous Neem stick for cleaning the teeth. 39.8% did not use any cleaning aids (Table 1).

Regarding the type of materials used for maintaining the oral hygiene, an overall majority of 59.1% subjects used tooth paste for cleaning their teeth, followed by 11.4% and 6.6% who used tooth powder and charcoal respectively.22.9% did not use any type of material for maintaining the oral hygiene. Among males, a majority of 62.3% used tooth paste for maintaining oral hygiene while the rest 12% and 6.2% used tooth powder and charcoal respectively. 19.5% did not use any type of material for maintaining the oral hygiene. Among females, a majority of 50.6% used tooth paste, followed by 9.6% and 7.5% used tooth powder and charcoal respectively for maintaining oral hygiene. 32.3% did not use any type of material for maintaining the oral hygiene (Table 2).

Regarding the frequency of tooth brushing, an overall majority of 59.2% subjects brushed their teeth once a day followed by 11.4% who brushed occasionally. 29.4% of the study subjects did not brushed their teeth at all. Among males 65% brushed their teeth once daily followed by 9.3 % who brushed occasionally and 25.7% did not brush at all. Among females, 43% brushed once a day followed by 17% who brushed occasionally and 39.8% did not brushed at all. (Table-3)

Regarding the method of tooth brushing, an overall majority of 32% followed horizontal method of brushing while 27.2% preferred circular method and 11.7% preferred vertical method but the remaining 29.1% followed combination of all method of the tooth brushing. Among males, 28.8% followed horizontal method of tooth brushing the other 9.5%,27.2%, and 34.5% followed vertical, circular and combination of all method of the tooth brushing respectively. Among females 41% followed horizontal method and the other 20%, 28.5%, and 10.5% followed vertical, circular and combination of all method of the tooth brushing respectively (Table 4).

When assessed regarding any other oral hygiene aids uses, no study subjects have ever used oral hygiene aids like flossing, Inter dental brushes and oral mouth rinses used for cleaning their teeth.

Table 1: shows the distribution of the study subjects according to the Cleaning Aids Used

Cleaning aids used	Male	Female	Total
Tooth brush	148 (57.6%)	40 (43.0%)	188 (53.7%)
Fingers	31 (12.0%)	11 (11.8%)	42 (12.1%)
Indigenous (E.g. Neem stick)	12 (4.7%)	5 (5.4%)	17 (4.8%)
No cleaning aids used	66 (25.7%)	37 (39.8%)	103 (29.4%)
Total	257 (100%)	93 (100%)	350 (100%)

Table 2: shows the distribution of the study subjects according to the Type of Material Used:

Type of Material Used	Male	Female	Total
Tooth paste	160 (62.3%)	47 (50.6%)	207 (59.1%)
Tooth Powder	31 (12.0%)	9 (9.6%)	40 (11.4%)
Charcoal(Indigenous)	16 (6.2%)	7 (7.5%)	23 (6.6%)
Did not use any type of material	50 (19.5%)	30 (32.3%)	80 (22.9%)
Total	257 (100%)	93 (100%)	350 (100%)

Table 3: shows the distribution of the study subjects according to the Frequency of Tooth Brushing

Frequency of Tooth Brushing	Male	Female	Total
Once a day	167 (65%)	40 (43.01%)	207 (59.2%)
Twice daily	0	0	0
More than twice per day	0	0	0
Occasionally	24 (9.3%)	16 (17.20%)	40 (11.4%)
Do not brush at all	66 (25.7%)	37 (39.79%)	103 (29.4%)
Total	257 (100%)	93 (100%)	350 (100%)

Table 4: shows the distribution of the study subjects according to the Method of Tooth Brushing

Method of Tooth Brushing	Male	Female	Total
Horizontal	55 (28.8%)	23 (41%)	79 (32%)
Vertical	18 (9.5%)	11 (20%)	29 (11.7%)
Circular	52 (27.2%)	16 (28.5%)	67 (27.2%)
Combination of above	66 (34.5%)	6 (10.5%)	72 (29.1%)
Total	191 (100%)	56 (100%)	247 (100%)

Discussion

There are numerous factors contributing to oral disease in substance abusers that include dry mouth and preference for sweet food induced by opiates, cannabinoids and stimulants suggested by Robinson *et al* [6]. Poor oral hygiene practices due to neglect of overall personal hygiene may also be a contributing factor.

Studies have also reported poor oral health among drug users (Rooban *et al.* Hosain *et al.*) [7, 8] A study by Rooban and colleagues [7] throws light on the oral health status of drug abusers in Chennai, South India and indicates a large gap in oral health status between drug abusers and general population. The paucity of data on routine oral health practices in the de addition centre led us to conduct the study to determine the impact on oral health status of the abusers.

Oral hygiene practices of the drug users were alarming in the present study. Fifty-nine-point two percent of the subjects brush their teeth once a day while 29.4% of the subjects don't brush at all. No cleaning aid for oral hygiene was reported in 29.4% of the subjects. Toothbrush was used by 53.7% of the study population. Similar results were reported by T. Gupta *et al.* [9] in 2012 and Hossain KMS et.al[8], in 2018. This might be due to the fact that poor oral hygiene practices may be due to the lack of concern for overall personal hygiene, resulting from drug dependents, consumption and withdrawal. Use of dental services was inhibited by low priority for oral health, low self-esteem, addiction state, needle phobia, ability to self-medicate and organizational factors in their lifestyles. Similarly, Robinson PG *et al.* [9] reported that a number of participants said that they frequently ended up in hospital casualty departments because of accidents.

Conclusion

The deteriorated oral health status among the substance abusers could be highly contributed by the poor oral hygiene practices followed by the abusers. The quality of life of the substance abusers become deteriorated because of multiple oral health conditions and diseases they suffer from. The motivation to the patients and creating awareness among the patients could be beneficial in improvising the oral health status among the abusers fighting to be a better citizen in the de addiction centre.

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