

# Nature of Crime, Duration of Stay, Parafunctional Habits and Periodontal Status in Prisoners

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## ABSTRACT

**Objectives:** Oral health is an integral part of general health. It has long been recognized that preventive oral care is important in the prevention of oral diseases, which also has significant impact on general health.

**Methods:** This is a cross sectional survey, with a sample size of 1011 (826 males and 185 females) prisoners.

**Results:** Inmates belong to the age range of 18-80 years, with the mean age of  $37.3 \pm 11.8$  years. Overall about (25%) inmates had Para functional habits. Most common Para functional habit (22.6%) was bruxism.. In hard core criminals Para functional habits (bruxism) was (18.1%) significantly higher ( $p < 0.001$ ) than in pity offenders (4.5%).

**Conclusion –** It can be concluded that nature of crime and duration of stay in prison was significantly associated with the development of parafunctional habits and also with worsened periodontal condition.

**Keywords:** Nature of crime, Duration of stay, Prisoners.

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## INTRODUCTION

Oral health is an integral part of general health. It has long been recognized that preventive oral care is important in the prevention of oral diseases, which also has significant impact on general health (1-3). Despite great achievements in the oral health of populations globally, problems still remain in many communities around the world - particularly among underprivileged groups in developed and developing countries. The greatest burden of all diseases is on the disadvantaged and socially marginalized (4).

Prisoners are the one such disadvantaged, socially marginalized and underserved population needs special attention. About nine million people are detained in penal institutions around the world. Many people with mental disorders are arrested and imprisoned, causing mental problems to be imported from the outside world into the prisons. In other cases, people without mental disorders develop mental prob-

lems during their imprisonment due to the deprivation they encounter in the prisons (5,6).

The inmate population in India has increased faster over the years. This is a trend seen nationwide in the correctional field. There has been a fundamental shift toward a more punitive response to crime, resulting in longer sentences. The public outcry about this increase in violence led to harsher sentences to criminals. The sentences became longer and judges were held to sentencing guidelines. Simply put, tougher laws keep people in prison longer. That is one reason we have more crowded prison population (5,6).

There are 1260 prisons in the country. In Uttar Pradesh there are 82 prisons. The number of under trial and convicted prisoners in India in 2007 was 2, 50,727 and 1, 20,115 respectively (Total- 3, 70,842 against the capacity of about 2, 50,000 prisoners). In Uttar Pradesh there were about 80,000

under trial and convicted prisoners were serving their sentences in prisons against the capacity of about 50,000 prisoners (7).

Primary care in prisons has to deal with a very wide range of common problems. Prisoners have a higher likelihood of almost any clinical problem compared with the general population. No conditions are unique to prison, but most conditions are more prevalent in prison. Some conditions can be influenced by prison conditions, often for the worse – such as air-borne infection, shared injecting equipment, anxiety, depression and other mental health problems (5,6).

Certain types of deprivation are inevitable in prisons. For instance, prisoners are deprived of their liberty for a period that may be long or of uncertain length. Deprivation of liberty inevitably involves deprivation of choices taken for granted in the outside community. They can no longer freely decide where to live, with whom to associate and how to fill their time and must submit to discipline imposed by others. Communication with families and friends is limited and often without privacy (5,6,8).

Other factors that often apply in prisons and that could adversely affect mental health include overcrowding, dirty and depressing environments, poor food, inadequate health care, aggression (which may take many forms, such as physical, verbal, racial or sexual), lack of purposeful activity, the availability of illicit drugs and either enforced solitude or lack of privacy and time for quiet relaxation and reflection (5,6,8).

Further, prisoners may have feelings of guilt or shame about the offences they have committed, the fact that they have been imprisoned and the effects of their behaviour on other people, including their families and friends, coupled with anxiety about how much of their former lives will remain intact after release. Prisoners seeking asylum or awaiting removal to another country face additional anxiety and may feel particularly isolated.

The cumulative effect of all these factors, left unchecked, is to worsen the mental health of prisoners and to increase the likelihood of incidents damaging to the well-being of prisoners and staff, as well as to good order and security, such as displays of aggression, bullying, mobbing, suicide attempts and self-harm (5,6).

All of these problems lead to development of psychological problems which can affect general health and oral health. Psychological problems are believed to be the most common cause of development of parafunctional habits (i.e.-Bruxism, Lip biting, Nail biting, Tongue thrusting), which in turn can affect the oral health (Dentition and Periodontium etc.).

Dental caries and periodontal diseases have historically been considered the most important global oral health burdens (4). Studies conducted on prisoners clearly indicated that gingival and periodontal problems were much higher compared to the general population (1, 9-11).

Various studies have been done on the general population oral health conditions. Very few studies have been done to assess the oral health status of prisoner's worldwide. There are studies discussing psychological stress and their effect on general health but in authors limited knowledge there is scarcity of literature discussing effects of duration of stay in prison and nature of crime with parafunctional habits and periodontal health status.

Hence this study had been taken to assess the effects of Nature of Crime, Duration of Stay, Para functional Habits, Tooth Wear and Periodontal Status among Prisoners in - Lucknow”.

The objectives were to record the nature of crime of prisoners, record the duration of stay in prison, record the various parafunctional habits in prisoners (bruxism, tongue thrusting, nail biting, etc.), record the periodontal health status i.e. CPI and Loss of attachment in prisoners and to find out the relation between nature of crime, duration of stay in prison and

parafunctional habits and periodontal health status among prisoners.

## MATERIALS AND METHODS

This is a cross sectional study. There are three prisons in the Lucknow namely District jail, Model jail and Nari Bandi Niketan. The population of inmates in District jail is about 4500 prisoners both under trial and convicted, Model jail 500 male inmates and Nari Bandi Niketan has about 500 female inmates (7).

Prisoners who are in the jail for more than 3 years in jail have been included in this study. Total inmates who consented and presented on the day of examination from three prisons are - Out of 500 in district jail 460 male inmates, out of 500 prisoners in Model jail 366 male inmates, from 250 in Nari Bandi Niketan 185 female inmates consented for study. So the total sample of prisoners who consented for study was 1011 prisoners. Ethical clearance has been taken from the institutional review board. Permission from the concerned prison authorities has also been obtained prior to study. An informed oral consent prior to start of examination was obtained from the inmates.

## Method of Data Collection

The proforma has two parts; the first part was the general information, which facilitates collection of patient's identification, demographic variables, their total years of sentences, their total years been in the jail, and reason for that sentence, habits related to oral cavity. The second part consists of clinical assessment using world health organization (WHO) oral health assessment form 1997 for recording of CPI codes and loss of attachment (12).

For nature of crime Inmates were classified in to hard core criminals and pity offenders. For duration of stay inmates were divided into those in the prison from 3-5 years, from 6-10 years and >10 years.

Calibration of the examiner was done in department of preventive and community dentistry. The kappa value of the examin-

ers intra examiner reliability was >0.8. The recorder in the study was also priorly trained in the department. The survey was conducted from April 2010 to September 2010 for a period of 6 months. Single examiner interviewed and examined the subjects. The recorder was seated in front of the subject close to the examiner to confirm that the finding was accurately recorded. Autoclaved clinical examination instruments of were used for inspection. In some needed situation chemical method of disinfection was followed using cold solution.

**Data Analysis**

Data was analyzed using SPSS software version 13. Data analysis began with tabulation of the results. The values were represented in number, % and mean ±SD. “Chi square” test and student “t” tests was

used to test the significance of the association between two factors.

**RESULTS**

On the whole 1011 inmates were included in the study; belong to the age range of 18-80 years, with the mean age of 37.3±11.8 years. (Table 1)

Overall about (25%) inmates had Para functional habits. Most common Para functional habit (22.6%) was bruxism present in significantly higher proportion (p<0.001) in inmates in comparison to other Para functional habits. (Table 2)

In hard core criminals Para functional habits (bruxism) was (18.1%) significantly higher (p<0.001) than in pity offenders (4.5%). (Table 3)

Table 4 describes the association between duration of stay and periodontal health status (Mean ± S.D. CPI codes and loss of attachment) in inmates, while Table 5 describes the association between nature of crime and periodontal status (Mean± S.D. CPI codes and Loss of attachment) in inmates.

**DISCUSSION**

Prisoners belong to that group which is most neglected by government and social system in the country. They face challenges both in prison during their stay in prison and when they are out of prison.

In prison challenges faced by them are – overcrowding, neglected general and oral health, inhuman behavior of the authorities, physical and mental trauma, being distant from home, proper representation of their case are some to be acknowledged.

When they are out of prison on parole or after their completion of sentence challenge faced by them are- no rehabilitative programs by the society, lack of job (no one like them), rejection from the society and family and system. All these conditions favor to make them more mentally stressed. Psychological stress affects both general and oral health.

In this study duration of stay in prison

**Table 1: Age and gender wise distribution of inmates**

Age group	Inmates				Total	
	Male		Female		N	%
	N	%	N	%		
15-24 yrs	123	12.16	3	0.29	126	12.46
25-34yrs	298	29.47	31	3.06	329	32.54
35-44 yrs	252	24.92	59	5.83	311	30.76
45-54yrs	113	11.17	40	3.95	153	15.13
55-64yrs	31	3.06	13	1.28	44	4.35
e”65yrs	9	0.89	39	3.85	48	4.74
<b>Total</b>	<b>826</b>	<b>81.70</b>	<b>185</b>	<b>18.29</b>	<b>1011</b>	<b>100</b>
<b>Chi-square value</b>	176.04				p-value: <0.001	Statistically highly significant

**Table 2: Association between duration of stay in prison and parafunctional habits in inmates**

Duration of stay in prison	Parafunctional habit-N (%)					Total
	No habit	Tongue thrusting	Bruxism	Lip/nail/ pencil biting	Bruxism+ Lip/nail / pencil biting	
3-5 years	353 (34.9)	0	139 (13.7)	2 (0.19)	2 (0.19)	496 (49.06)
6-10 years	265 (26.2)	3 (0.29)	56 (5.5)	2 (0.19)	1 (0.09)	327 (32.3)
>10 years	140 (13.8)	0	34 (3.3)	10(0.98)	4 (0.39)	188 (18.5)
<b>Total</b>	<b>758 (74.98)</b>	<b>3 (0.29)</b>	<b>229 (22.6)</b>	<b>14 (1.38)</b>	<b>7(0.69)</b>	<b>1011 (100)</b>
<b>Chi-square value</b>	42.93		p-value: <0.001		Statistically highly significant	

**Table 3: Association of nature of crime with parafunctional habits in inmates**

Nature of crime	Parafunctional habits n̄ N (%)					Total
	No habit	Tongue thrusting	Bruxism	Lip/nail/ pencil biting	Bruxism+ Lip/ nail/pencil biting	
Hard core criminals	662(65.48)	0	183(18.10)	8(0.79)	6(0.59)	859(84.91)
Others (pitty offenders)	96(9.50)	3(0.29)	46(4.55)	6(0.59)	1(0.09)	152(15.03)
<b>Total</b>	<b>758(74.98)</b>	<b>3(0.29)</b>	<b>229(22.65)</b>	<b>14(1.38)</b>	<b>7(0.69)</b>	<b>1011(100)</b>
<b>Chi-square value</b>	33.35		p-value: <0.001		Statistically highly significant	

**Table 4: Association between duration of stay in prison and Mean±SD CPI and Loss of attachment in inmates**

Duration of stay	Number	CPI	Loss of attachment
1. 3 to 5years	496	1.89±0.83	0.26±0.53
2. 6 to 10 years	327	2.09±0.80	0.32±0.58
3. >10 years	188	2.43±0.83	0.58±0.78
it̄i (1& 2)		3.43	1.53
ip̄i		<0.01*	<0.01*
it̄i (1&3)		7.45	6.14
ip̄i		<0.001*	<0.001*
it̄i (2&3)		4.45	4.3
ip̄i		<0.001*	<0.001*

\* Statistically highly significant

**Table 5: Association between nature of crime and Mean± SD CPI and Loss of attachment in inmates**

Nature of crime	Number	CPI	Loss of attachment
Hard core criminals	859(84.91)	2.07±0.84	0.34±0.62
Others (pity offenders)	152(15.03)	1.98±0.87	0.30±0.57
“t”		1.22	0.76
“p”		0.40**	0.60**

\*\* statistically non significant

and parafunctional habits (bruxism - 22.6%) was associated significantly (p<0.001) being highest (13.7%) in the 3-5 years group of prisoners, followed by 6-10 years group of prisoners (5.5%) and >10 years group of prisoners (3.3). This trend can be explained on the basis of fact that as a new entrant in the prison (3-5 years) psychological stress being more. As time elapsed for 6-10 year group and >10 years group they compromised with the situation and get habitual to prison life.

Duration of stay in prison and periodontal status was significantly higher in (p<0.001) group in respective order- (Mean CPI: Mean Loss of attachment) being more (2.43:0.58) in >10 years group followed by 6-10 years group (2.09: 0.32) and 3-5 years group (1.89: 0.26). This could be due to increased age effects on oral health, lack of oral hygiene, and other systemic causes.

In hardcore criminals bruxism (18.1%) was significantly higher (p<0.001) than pity offenders (4.5%). There was no significant difference (p>0.05) in nature of crime and

periodontal health status in inmates. In hard core criminals periodontal health status (Mean CPI: Mean Loss of Attachment) was slight high (2.07:0.34) than in pity offenders (1.98:0.30).

In hardcore criminals level of mental stress could be more due to many reasons like – More sentence for their crime, Strict security in their cells, Being involve in gang in prison, apart from overcrowding and unhygienic conditions, and negligence to general and oral health by the prison hospital staff.

**CONCLUSION**

Duration of stay and nature of crime are associated with development of Para functional habits. Para functional habits are significantly associated with periodontal health status. Hard core criminals had slight increased periodontal status (Greater CPI codes and Loss of attachment). Nature of crime and duration of stay in prison both factors had their affect on inmates. In hard core criminals parafunctional habit (especially bruxism) was more and in prisoners of 2-5 years of stay in prison.

**RECOMMENDATIONS**

These findings suggest that planning of oral health care in prisons should also consider other factors which are important in development of parafunctional habits. The prisons should think of to create the best conditions for good health and effective health care, prisons should adopt a whole-prison approach and more recreational activities so inmates can develop some skills and relieve their stress, which in turn will have beneficial effect of oral health.

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