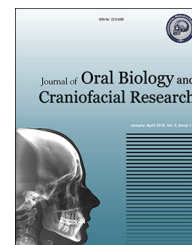


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## Original Article

## Epidemiology of substance abuse in the population of Lucknow



Sumit Kumar<sup>a</sup>, Divya Mehrotra<sup>a,\*</sup>, Shambhavi Mishra<sup>b</sup>, M.M. Goel<sup>a</sup>,  
Sandeep Kumar<sup>c</sup>, Prashant Mathur<sup>d</sup>, Kishore Choudhary<sup>c</sup>, C.M. Pandey<sup>b</sup>

<sup>a</sup> Department of Oral and Maxillofacial Surgery, King George's Medical University, Lucknow, India

<sup>b</sup> Department of Biostatistics and Health Informatics, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India

<sup>c</sup> All India Institute of Medical Sciences, Bhopal, India

<sup>d</sup> Indian Council of Medical Sciences, New Delhi, India

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## ABSTRACT

**Background:** Habit of consuming tobacco and areca-nut containing substances is in vogue in Lucknow as a part of the *Nawabi* culture. Hence, this study was planned with an aim to generate evidence for the prevalence of habits of substance abuse by the population of Lucknow and know their socio-demographic profile.

**Methodology:** Population based cross-sectional study was conducted by organizing oral health check-up camps in randomly selected rural and urban parts of Lucknow, the capital city of Uttar Pradesh, which is the most populated state of India. Patients were enrolled after obtaining informed consent. A structured and validated questionnaire based tool was administered by a team of trained dental surgeons for collecting the desired information through interview and their oral cavity examination.

**Results:** A total of 3437 subjects were enrolled in the study, out of which 82.9% were male and 17.1% were female. Among them, 64.6% subjects belonged to rural domiciliary status, by religion, 80.6% and 18.5% of the subjects were Hindu and Muslims respectively. The most prevalent habit was consumption of smokeless tobacco substances, of which *pan masala* with tobacco (*gutkha*) was the most prevalent substance of abuse.

**Conclusion:** Smokeless tobacco consumption was highly prevalent in the population surveyed. It is recommended to formulate and implement strong preventive strategies. Also, steps should be taken to increase the awareness of the harmful consequences of these habits.

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## 1. Introduction

India is the third largest producer and consumer of tobacco.<sup>1,2</sup> The habit of consuming tobacco and areca-nut containing

substances is in vogue among the population in Lucknow as a part of the *Nawabi* culture and tradition.<sup>3</sup> Apart from these, various other substances such as alcohol, *ganja*, *bhang* and *afeem* are also used by some sections of the population. As per the World Health Organization (WHO), substance abuse

\* Corresponding author.

E-mail address: [divyamehrotra@hotmail.com](mailto:divyamehrotra@hotmail.com) (D. Mehrotra).

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is the habit of consuming harmful or hazardous use of psychoactive substances ([http://www.who.int/substance\\_abuse/terminology/abuse/en/](http://www.who.int/substance_abuse/terminology/abuse/en/)). Tobacco, areca-nut, alcohol, *ganja*, *bhanga*, *afeem* and other illicit drugs can be included under these substances, as they lead to a dependence syndrome, which can be described as a cluster of behavioural, cognitive and physiological phenomena. Subjects addicted to the use of such substances develop a strong desire for repeated use, despite their harmful consequences.<sup>4–6</sup> The habit of chewing tobacco and areca-nut has been associated with an increase in the incidence of oral potentially malignant disorders such as oral sub-mucous fibrosis, leukoplakia and cancer.<sup>7,8</sup>

Various substances can be grouped into three broad categories as tobacco containing substances, tobaccoless substances and substances that include alcohol, *ganja*, *bhanga* and *afeem*. The tobacco containing substances<sup>9</sup> are further categorized as smoking and smokeless substances. Smokeless substances may have tobacco alone and/or along with areca-nut, catechu, slaked lime and some flavouring agents. Commercially available tobaccoless substances include *sada pan*, *sada pan masala*, sweet *pan masala*, *supari* and have areca-nut as the chief component.<sup>10,11</sup> In India, increased consumption of tobacco and areca-nut substances has led to an increase in the incidence of oral potentially malignant disorders and oral cancer.<sup>7,8,11,12</sup> Various studies conducted in this respect have shown prevalence of tobacco among the Indian population. However, these studies did not throw light on the type of substances used and the description of demographic factors such as age, sex, marital status, education and socio-economic status with the habit of substance abuse. Therefore, this study was planned to be conducted in the rural and urban parts of Lucknow district, with an aim to generate evidence for the prevalence of habits of substance abuse by the population of Lucknow and know their socio-demographic profile.

## 2. Methods

Population based cross-sectional study was carried out in Lucknow by organizing oral health check-up camps in the community. These camps were organized in various randomly selected areas in the rural and urban parts of Lucknow district. Lucknow is a capital city of state of Uttar Pradesh, the most densely populated state of India. In Lucknow, tobacco and areca-nut use are part of the tradition and *Nawabi* culture.<sup>3</sup> Institutional ethical approval was obtained before starting the study.

All subjects visiting the oral health check-up camp and consenting to be part of the study were enrolled in the study. A structured and validated questionnaire<sup>13</sup> based tool was administered to the subjects enrolled. It had four sections: the first section included questions on the basic demography of the subject, the second section had questions about the habit of substance abuse, the third section included questions based on the social and cultural factors of the habit of substance abuse and the fourth section was based on the oral health examination. The questionnaires were filled by trained dental surgeons, and they thoroughly examined oral cavity of the subjects.

## 3. Results

A total of 3437 subjects were enrolled in the study. Approximately 30% of them used smokeless tobacco products, 9% were smokers, another 9% tobaccoless products users, 4% consumed alcohol, while 61% were non-users (Table 1).

The demographic and socio-economic characteristics of the respondents were analysed (Fig. 1). It was observed that male and female population were 80% and 17% respectively. By religion, eight in ten respondents were Hindu while the remaining were mostly Muslim. Majority (65%) lived in rural areas, while 35% resided in urban areas. Approximately three fourth of the population were married. One-third participants belonged to the age group 25–35 years, 23% were in age group 36–45 years, 20% of them were below 25 years and only 3% were above 65 years. About three fourth of the participants (72%) belonged to upper middle socio-economic class.

The habit of substance abuse was tabulated to find the prevalence of various substances (Table 2). Of all the respondents, only 39% consumed one or more substances. Likewise, among male respondents, 43% and among females only 23% used one or more substances. The highest percentage of users were in the age-group 25–35 years, where 44% of respondents used one or more substances. Among various age-groups, the substance most commonly used was *pan masala* with tobacco (*gutkha*), followed by tobacco *pan* among users up to 65 years of age. However, among older users, the second most commonly used product was cigarette followed by *bidi*. Among the male users, the most used product was tobacco *pan masala* followed by tobacco *pan*, cigarette, *khaini/mainpuri/surti*, *bidi* and alcohol. Tobacco *pan masala* was also most commonly used substance for females; however, this was followed by *sada pan masala*, *khaini/mainpuri/surti*, *sada pan* and tobacco *pan*.

Among male respondents, 22% chewed smokeless tobacco products (Table 3). However, among females it was 13%. Proportions of multiple users were 12% among males and 3% among females. Across all the age-groups, highest percentage of respondents used smokeless tobacco products followed by tobaccoless areca-nut products. For users residing in both rural and urban areas, smokeless tobacco products were commonly used, followed by tobaccoless and smoking products. Around one-tenth of users belonging to urban and rural areas were users of multiple products. For both married and unmarried respondents, commonly used products were smokeless tobacco products. Across all the socio-economic classes,

**Table 1 – Description of enrolled subjects in the study.**

Habit <sup>a</sup>	Frequency (n = 3437)	%
Smokeless tobacco	1037	30.2
Smoking tobacco	313	9.1
Tobaccoless products	311	9.0
<i>Ganja</i> , <i>bhanga</i> , <i>afeem</i>	42	1.2
Alcohol	145	4.2
Non users	2085	60.7

<sup>a</sup> Multiple responses.

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