

Prevalence of Smokeless Tobacco Among the School Going Children Aged 8-17 Years of Gandhinagar City

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ABSTRACT

Background: In South Asia, the use of smokeless tobacco is common. India has the second highest tobacco production only next to China. Smoking and tobacco use is a major public health issue in developing countries. Tobacco use has been recognized as a major killer and behavioural interventions are being implemented for changing habits especially among the adolescents. The developing countries are unlikely to be lagging far behind in the magnitude of the problem and should act now, to prevent future catastrophe. In developing countries, the habit usually starts in the pre adolescent in both boys and girls and stabilizes to adult levels by the late teens. We will be performing a study to determine the prevalence of smokeless tobacco use among school going children. Students will be selected from the schools located in Gandhinagar city of the age group 8-17 years after the institutional ethical committee approval. Data will be tabulated and the results thus obtained would be statistically evaluated for the prevalence separately for males and females. Inter-group differences would be analyzed for probable significance using appropriate test.

Keywords: Smokeless tobacco, Children, Gandhinagar.

INTRODUCTION

Global use of tobacco is on the rise and more so in South East Asia. Europeans introduced tobacco in 1600s in the form of pipe smoking and also as a snuff. The chewing of betel quid which is a mixture of leaf of piper betle vine, aqueous calcium hydroxide paste (slaked lime), piece of arecanut (sopari) and frequently some spices, was a popular habit that had already been integrated into social and cultural life, in this region for over a millennium. Believed to have originated in prehistoric times this practice extends eastwards as far as south pacific islands. After its introduction tobacco soon became a new ingredient in betel quid (pan), which has become the most commonly used

form of smokeless tobacco although its use varies in different parts of the world. In south Asia, India has the second highest raw tobacco production only next to China.¹

An estimate of the no of betel quid users is 600 million.² Smokeless tobacco users in India and Pakistan together have been estimated to no 100 millions.³ About 35-40% tobacco consumptions in India is in the smokeless form, mostly species nicotina rustica, while most smoking tobacco is an tabacum.⁴ According to the NFHS III in India, 55.8% male, 10.8% females in the age group of 12-60 years have been found to be consuming tobacco. Among males, 32.7% smoking tobacco while 36.5% smokeless tobacco are reported, while among

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females it is reported to be 1.4 and 8.4% respectively.⁵

Increasing use of tobacco has been reported not only among men, but also among such vulnerable groups as children, teenagers and even women of reproductive age and by immigrants of south Asian origin wherever they have settled. In India per capita smokeless tobacco consumption has increased among the poor between 1961 and 2000 in both rural and urban areas.⁶

The prevalence of smoking and tobacco use in India has been reported by Gajalaxmi et al.⁷ summarize the Indian data and reported a variable prevalence of tobacco use in the country depending upon local customs and religion. In adults aged >15 years prevalence was reported as 21% as cigarette smoking and 21% for bidi. In Rajasthan, Gupta et al.^{8,9} reported prevalence of smoking or tobacco use of 51% in rural men, 5% in rural women, 39% in urban men and 19% in urban women. While Venket Narayan et al.¹⁰ reported smoking prevalence of 45% in men and 7% in women in Delhi. In Mumbai, Gupta et al.¹¹ reported current tobacco use in 69% men and 57% women.

Smoking and tobacco use among children has not been extensively reported from India although small studies exist. Vaidya et al.¹² reported tobacco use in 13.5% boys and 9.5% girls in Goa. In Goa smokeless tobacco use (2.8%) and smoking (3.0%). Smokeless tobacco among boys was 3.5% and girls 2.2%.¹³ Jayant et al.¹⁴ reported tobacco use of 6.9% to 22.5% among 1278 boys and 353 girls belonging to different types of schools in Mumbai. And George et al.¹⁵ studied 146 children in Kerala and reported tobacco use in 29% and smoking in 2%. In National Capital Territory (NCT) of Delhi users of tobacco products was 5.4% (boys 4.6%, girls 0.8%).¹⁶ In Jaipur prevalence of tobacco use in boys 2.1% and girls 1.7%.¹⁷

Tobacco has always been a menace in developing countries like India and chewing tobacco apparently is widely prevalent in state of Gujarat but not much data are available pertaining to prevalence and quitting patterns for chewing form of tobacco in Gujarat. Awareness towards hazardous health effects of tobacco has increased with time but its role alone towards attainment of tobacco cessation is questionable. In order to

effective formulation of quitting strategies, knowledge regarding quitting behavior is necessary to study and hence an epidemiological study was carried out in quitters and quitting behavior in consumers and associated factors.

MATERIALS AND METHODS

750 individuals were selected by cluster sampling method from total 15 different schools by dividing Gandhinagar city into 5 zones. The study was carried out from May 2014 to July 2014. Information of schools was collected from district education office Gandhinagar. First, a list of all private and government aided schools having grades 5 to 12 was prepared. In the second stage, the schools were selected randomly from each cluster. The classes were randomly selected and from each selected class, all students of every alternate section were included. The classes were randomly selected and from each selected class all students of every alternate section were included.

The study was approved by institutional ethics committee. The principals of schools were informed about importance of survey. Students were told to participate in the study voluntarily and informed consent from students and school authorities was obtained. Children were explained about how to fill up questionnaires and to provide authentic information. They were assured that all information would be kept confidential. This questionnaire about tobacco use was prepared and validated. The questionnaire was provided in English language to English medium school students and was translated in Gujarati language for Gujarati medium. Tobacco consumption was broadly classified into 2 categories smoking and chewing (smokeless tobacco) which includes gutka, sada, khaini, mishri, pan masala, zarda and tobacco snuff.

The target sample size calculated was 750 keeping in mind the least prevalence of tobacco use as 25% relative precision of 10% and confidence interval of 95%. A total of 10 questionnaires were distributed to all eligible students in 15 schools of Gandhinagar. Students who refused to participate were asked to remain in class and not to interfere with the participants. The statistical analysis was done on proportional percentage basis, study variables being Tobacco chewing, chewing forms,

daily frequency, knowledge regarding health hazards of tobacco, successful and unsuccessful attempt of quitting.

RESULTS

A total of 750 students (509 Male, 241Female) filled the questionnaire.

Table 1: tobacco usage among the males and females

Sex	Percentage		Total
	Yes	No	
Male	9.0	91.0	100
Female	2.1	97.9	100
Total	6.8	93.2	100

The overall percentage of tobacco consumption was found in males 9.0 % and in females it was 2.1%. Overall prevalence among both the genders was 6.8%. (Table 1).

Table 2: Type of tobacco consumption among males and females

Sex	Percentage		Total
	Smokeless	Smoke	
Male	69.6	30.4	100
Female	60	40	100
Total	68.6	31.4	100

It was found that smokeless tobacco usage in males was 69.6% and in females 60% and smoke tobacco was 30.4% and 40% in males and females respectively. In general for both males and females 68.6% was noted (Table 2).

Table 3: Distribution of consumption of smokeless tobacco among the males and females.

Sex	Percentage					Total
	Gutka	Sada	Pan Masala	Zarda	Tobacco Snuff	
Male	40	37.8	15.6	4.4	2.2	100
Female	60	20	0.0	20	0.0	100
Total	42	36	14	6	2	100

Gutkha consumption was 40% in males and 60.0% in females, whereas Sada was 37.8% in males and 20.0% in females. Pan masala was 15.6% in males and 0% in females. Zarda eating was 4.4% in males and 20.0% in females. Tobacco snuff intake was 2.2% in males and 0% in females. Largely for

males and females the individual smokeless tobacco the findings were Gutkha 42.0%, Sada 36.0%, Pan masala 14.0%, Zarda 6.0% and Tobacco snuff 2.0%. (Table 3).

Table 4: Frequency of tobacco consumption per day.

Sex	Percentage			Total
	1 to 5 per day	5 to 10 per day	More than 10	
Male	80.4	15.2	4.3	100
Female	60	20	20	100
Total	78.4	15.7	5.9	100

Among the males 1 to 5 packets per day consumed was 80.4%, 5 to 10 packets per day was 15.2% and more than 10 packets per day was 4.3% and in females 1 to 5 Packets per day was 60.0%, 5 to 10 packets was 20.0% and more than 10 packets per day was 20.0%. Totally among males and females 1 to 5 packets per day was 78.4%, 5 to 10 Packets per day was 15.7% and more than 10 packets per day was 5.9%.

DISCUSSION

Majority of the tobacco related deaths occurs in developing countries where problem of tobacco is assuming alarming proportions. A study done by Bala DV in Gujarat State, India, showed a downward shift in age of initiation of this habit which is a matter of serious concern.¹⁸ The prevalence of tobacco use among school students in different States of India has been reported to vary from 1.9 per cent in Delhi^{19,20} to 75.3 per cent in Mizoram.^{7,16,19} Our study demonstrates that among the 8 to 17-year old school going children (corresponding to grades 8 to 10) in Gandhinagar city, the current tobacco use was 6.8 per cent (boys: 9.0, girls: 2.1%) which is much lower than the 37.2 percent (boys: 39.2%, girls: 31.9%) reported by GYTS performed in Uttar Pradesh.²¹ The probable fact behind the low prevalence in Gujarat could be the prohibition of tobacco. A study done by Nilesh Thakor and co-workers²² showed overall 5.2% tobacco prevalence which is similar to our study.

The use of smokeless tobacco products was found to be more common in government school boys in comparison to private school boys. Low socio-economic status of government school

students may be responsible for this, since being relatively inexpensive and readily available, these children often see tobacco as an alternative to food^{10,21}. Also chewing of these products is considered less harmful than smoking. Increasing practice of tobacco use in private schools may be attributed to peer pressure, rising influence of western culture, rapid urbanization, increased disposable income in the affluent families, tobacco use by their role models, parental habits, media promotion and best friends.

In the present study, tobacco chewers in males was 69.6% and in females 60%. The mean age of initiation in our study is 10 year. Among the Indian studies, the age of initiation of tobacco use has been found to vary from 8 to 15 yr^{4,10,15}. Our survey reflects a recent downward shift in age at uptake of tobacco habit among children of aged group 8-17 years.

Moreover, In this present study the use of Gutkha was much more common than the other form of smokeless tobacco and that is 40% in males and 60% in females. Study done by Nilesh Thakor and co-workers²² showed reverse scenario, Gutkha consumption is higher in males than females.

Gutkha is a manufactured smokeless tobacco product (MSTP), a mixture of areca nut, tobacco and some condiments, marketed in different flavours in colourful pouches.^{23,24} Gutkha is cheaper and easily available than all other form of smokeless tobacco. Gutkha is even far more convenient as compare to other. After Gutkha the prevalence of other form of smokeless tobacco in descending manner are sada, pan masala, zarda and Tobacco snuff. There is no prevalence of pan masala and Tobacco snuff among female in our study. Initially habit starts with 1 to 5 packet per day which is gradually increase with the time but more financial recourses require to buy more packets to suffice the increase in need. So majority the consumption is limited to 1 to 5 packets per day among children. In our study 1 to 5 packet frequency of smokeless tobacco consumption was 78.4 %, whereas more than 10 packets per day was only 5.9%.

Schools teach values and the benefits of learning. It is a place where a child grows up in all aspects. This is where several lifestyle habits are

inculcated. Tobacco use prevention education should have a place along with other important subjects taught in the school environment. In summary, our findings indicate that considerable experimentation with Smokeless tobacco products occurs among school going children. Many students using it regularly. Smokeless tobacco interventions targeting this population represent an important opportunity to stop the transition from experimental smokeless tobacco use to tobacco dependence, especially in rural areas.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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