

Health Consequences of Smokeless Tobacco Substance Abuse among High School Adolescents

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ABSTRACT

Background: People currently reside in a smokeless tobacco -oriented society, and the threat of illicit substances is visible in every part of the world, including Pakistan. Moreover, Substance abuse has become a big problem in our society now days, therefore current study conducted on health consequences and prevalence of smokeless tobacco substance abuse among high school adolescents at taluka Qasimabad, Hyderabad, Sindh, Pakistan.

Methodology: A cross sectional study conducted through predesigned survey form, in which 308 respondents were selected at random level from the full targeted sample of ninth and tenth grade pupils..

Results: the researcher revealed 22.9% of smokeless tobacco abuse among high school adolescents, in which male participants showed high prevalence as compare female. Furthermore, Areca nuts (57.1%), Safina sachet smokeless tobacco (19.2%), betel (14.6%), and Tara chewing smokeless tobacco (13.3%) had the highest percentage of smokeless tobacco used. In addition, data showed significant 0.05 association with smokeless tobacco abuse with health-related problem, i.e., throat pain, cough, mouth ulcer and headache, abdominal pain, loss of appetite and sleeping pattern disturb problem.

Conclusion: It is revealed that High school adolescents abused smokeless tobacco substances and suffered worst health consequences.

Keywords:

Smokeless Tobacco, Abused, Adolescents

INTRODUCTION

Tobacco is characterized by two dominant ingredients: Nicotiana tabacum and Nicotiana rustic and a volatile peganum harmala alkaloid, is the most important component of these plants' leaves.¹ Nicotine is one of the most addictive and stimulating substance and Nicotine effects on multiple organs of body, it binds to a receptor in the central nervous system and raises dopamine levels in the brain.² In addition, tobacco substances modify the structure or function of a living organism by its chemical composition.³ In smokeless Tobacco included betel masala, tobacco with Chun (lime-calcium carbonate), and tobacco with betel quid commonly used.⁴ In addition, It has a negative impact not only on physical health but also on mental health and social roles.⁵ Moreover, chewing tobacco leaves and various forms of smokeless tobaccos are being abused in Pakistan and all over the world. In the Indian subcontinent, use of smokeless tobacco is more common than smoking tobacco.⁶ Many people initiated

the tobacco substances abuse without realizing the negative consequences, and used as time pass, after that they developed a completely physical dependency on it.⁷ Adolescents also wrongly assume that smokeless tobacco use is less harmful than cigarette smoking, and snuff use is less visible than smoking, which can be used in places where smoking is not permitted, such as the classroom or the workplace.⁸ Smokeless tobacco users are more likely to develop gingival recession, mucosal lesions, and oral cancer.⁹ In relation a study shown there was a very strong link between smokeless tobacco abuse and leukoplakia in professional baseball players.¹⁰ According to study that conducted in India that found 65.7% of Gingival recession and 16.42% of mucosal lesions at the placement site among adolescents who abused smokeless tobacco.¹¹ Another study revealed that clinical oral leukoplakia was diagnosed in 27 (8.5%) of the 317 people who were screened at the placement site of smokeless tobacco.¹² Another research revealed throughout the complete range of tobacco products used by American adolescents, correlated with a high risk mental health problems concerns.¹³ Furthermore, in the United States, 16% of White high school adolescents were currently using Smokeless tobacco.¹⁴ A cohort study conducted in united states revealed the risk of heart diseases 1.17% and 1.28% stroke among

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smokeless tobacco users.¹⁵ A World Health Organization study revealed that 9 percent of the family members evaluated had at least one of eight smokeless tobacco-related infections.¹⁶ Smokeless tobacco causes cancer as well as a variety of non-cancerous oral disorders that can lead to a nicotine addiction comparable to that caused by cigarette smoking. Moreover, smokeless tobacco usage is also causing an increase in morbidity and mortality. Tobacco users in Pakistan are up to 54% of adolescents aged 13–15 years, with current use estimates of 6.4% in men and 3.7% in females, respectively.¹⁷ Therefore, a current study was conducted to determine the health consequences and frequency of smokeless tobacco substance abuse among high school adolescents.

SUBJECTS AND METHODS

It was a cross-sectional study. The Participants of the study included 1880 students, both boys and girls, in grades 9 and 10 from four public school taluka Qasimabad, District Hyderabad, Sindh, Pakistan.

The study indicated a sample size of 308, which was calculated using the open EPI: software calculator with a 95% confidence level and a 5 percent error acceptable,¹⁸ related to a prior study that revealed a prevalence rate of 64%.¹⁹ 9th and 10th grade male and female students age between 13 and 16 years, from selected high schools in the Taluka Qasimabad District of Hyderabad.

All other classes of pupils from Taluka Qasimabad who did not attend the ninth and tenth grades at the designated high schools and who were younger than 16 years and little than 13 years old were excluded. Using a predesigned questionnaire, researchers collected their data.²⁰ The prior authorization had been obtained prior to administering the questionnaire from district Education officer Hyderabad, Principals of Concern public schools and their parents or guardians. The questionnaire was then dispersed at random among the high school students in the room. They were also given the option of answering the questions in English, Urdu, or Sindhi, depending on their preference. The time limit of 30–45 minutes was allotted.

SPSS version 23 was utilized for the descriptive statistical analysis. Frequency and percentage used for categorical variables. Moreover, chi-square applied for checked associations between smokeless tobacco abuse and its health consequences among high school adolescents.

The study was carried out with approval of advanced studies and research council of Liaquat

University of Medical & Health Sciences Jamshoro. Additionally, the Hyderabad District Education Officer provided Written Permission for the four public high schools under jurisdiction. Furthermore, Participants received assurances regarding their confidentiality and anonymity during the study.

RESULTS

Table no 01: According to the demographic data, male participants were 65.9% higher than female participants and 34.1% lower. Participants in this age group had the highest level 74.4% between the ages of 15 and 16 years. Furthermore, participation in the study class of 10th grade students was significantly higher than that of ninth grade students.

Table 1: Demographic data

Variables	Categories	Frequency (%)
Gender:	Male	203 (65.9%)
	Female	105 (34.1%)
Age	13 years less than 14 years	13 (4.2%)
	14 Years less than 15 years	66 (21.4)
	15 years less than 16 years	229 (74.4%)
Study class	9th Class	96 (31.2%)
	10th Class	212(68.8%)
Total	N=308	100%

Table 2: Have you ever used following smokeless tobacco?

Smokeless Tobacco	Yes	No	Male	Female
Safina sachet	67 (21.8%)	241 (78.2%)	65 (97. %)	02 (3%)
Gutka	25 (8.1%)	283 (91.9%)	25 (100%)	0%
Betel	45 (14.6%)	263 (85.4%)	35 (77.7%)	10 (22.3%)
Areca nuts	176 (57.1%)	132 (42.9%)	130 (73.8%)	46 (26.2%)
Tara chewing tobacco	41 (13.3%)	267 (86.7%)	37 (90.2%)	04 (9.8%)
Total percentage of participants Answered	354 (22.9%)	1186 (87.1%)	292 (18.9%)	62 (3%)

According to the data collected from participants, areca nuts were used the most (57.1%), followed by Safina sachet smokeless tobacco (19.2%). Moreover, data showed 14.6% of betel and 13.3% of Tara chewing tobacco were abused among high school adolescents. It was discovered that 22.9% of participants abuse smokeless tobacco, in addition, male participants abusing it at a higher rate (18.9%) than females at 0.3% among high school adolescents (Table 2).

The data reported the most common problems related to health were throat pain 48.4%, mouth ulcers 28.6% and headaches 20.1% accordingly. Furthermore, 19.2% of participants had a cough problem and 15.9% of participants had abdominal pain and loss of appetites. However, sleeping pattern disturbance reported decline among high school adolescents. Additionally, chi square test shown positive significantly association with health-

related problems with smokeless tobacco abuse accordingly (Table 3).

Table 3: Did you have any health-related problem whenever you have been taken smokeless tobacco?

Health related problems	Yes	No	Association with smokeless tobacco
CATEGORY	f (%)	f (%)	P-value
Headache	62 (20.1%)	246 (79.9%)	0.001
Abdominal pain	49 (15.9%)	259 (83.8%)	0.001
Mouth ulcer	88 (28.6%)	220 (71.4%)	0.001
Gingivitis	40 (13%)	268 (87%)	0.002
Throat pain	149 (48.4%)	159 (51.6%)	0.000
Cough	59 (19.2%)	249 (80.8%)	0.004
Sleeping pattern disturb	30 (9.7%)	278 (90.3%)	0.005
Loss of appetites	49 (15.9)	259 (84.1%)	0.001

DISCUSSION

This cross-sectional study was conducted at district-level Hyderabad taluka Qasimabad public high schools, where male students at the highest level and the age group of 15 to 16 years were heavily represented. However, a study conducted in India discovered a high prevalence and participation rate of males under the age of 18.²¹

In this study data found through the Chi Square test that male participants revealed 18.9% high smokeless tobacco abuse as compared female 3% found, in supported to this study, A research conducted in India that found 29.1% of male and 8.2% of female smokeless tobacco abuse among high school children, similarly study showed in India 22.30% of the female participants abused smokeless tobacco.²² therefore, In relation this study found low prevalence among female gender. Furthermore, this study showed 57.1% of areca nuts that was highest number of smokeless tobaccos abused, and 9.2% of Safina sachet, 13.3% of Tara chewing tobacco, and 14.6% of betel abused revealed among high school adolescents. Similarly a study consistent on 7831 individuals that revealed 7.7% of smokeless tobacco abuse among adult in Pakistan, according to a global survey of tobacco abuse.²³ Moreover, a study conducted in city Chabahar Iran that found betel 24.8%, gutka 8.6% and Biti 4.8% of smokeless tobacco consumers among school going adolescents.²⁴ in addition a study found 53.51% of individual smokers also using the other form of smokeless tobacco.²⁵ thus current study showed low prevalence of smokeless tobacco abused but condition could be worse if initiative measures would not be taken.

The data showed the most probably problem related to health consequences that throat pain, cough, mouth ulcer and headache problem, furthermore,

participants were also suffered in abdominal pain and loss of appetite, and sleeping pattern disturb. In relation, according to studies Areca nuts are widely utilized and contain both narcotic and stimulating properties. areca nut reduces appetite, improves digestion, alters attention, and relaxes the body, as well as increasing alertness.⁹ In addition, Gutkha has been demonstrated to be genotoxic and clastogenic.²⁶ Followed by study in Bangladesh, a study revealed that the consumption of smokeless tobacco associated (P<0.05) with high risk of blood pressure in adult and chewing betel quid associated with obesity, oral cancer cardiovascular diseases, and stroke.²² The International Agency for Research on Cancer (IARC) has confirmed that smokeless tobacco is carcinogenic to humans, with the primary target organ being the oral cavity, where the products are administered locally.¹⁰ In supporting the current participants of study and the same age group of adolescents are in high risk and in vulnerable condition to develop fatal disease and problem related to physical health deterioration.

CONCLUSION

It is revealed that high school adolescents used and suffered in worst effects of smokeless tobacco related to health, in addition, Male participants found high prevalence of smokeless tobacco abuse as compare female. Therefore, guardians of adolescents and school administration authority should be taken preventive measures to cease smokeless tobacco abuse among high school adolescents. This study only included high school students; thus, college and university students could be the subject of future research. Additionally, the reasons and influences of the study's limitations were left open for future study of the same population group.

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