

## RESEARCH ARTICLE

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# Pattern of Smokeless Tobacco Initiation and Use among School Going Adolescents in Delhi, India: A Mixed Method Study

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### Abstract

**Introduction:** With growing trends in tobacco consumption, it has been observed that the age of initiation is gradually decreasing. To combat the deep-rooted problem of the Society, we need to target the adolescents at the time of their first consumption of tobacco forms. Hence, this study was conducted to assess the pattern of smokeless tobacco use among school going adolescents in senior secondary schools with the assessment of the sociodemographic factors responsible for initiation of smokeless tobacco use by adolescents. **Methods:** A cross-sectional survey of total sample of 714 students across 9-11 standards in 3 schools of Delhi was done using a self-administered questionnaire after obtaining approval from Institutional Ethics Committee and School Health Scheme, Delhi. **Result:** Consumption of tobacco was found to be 27.9% at a frequency of 6-9 days in a period of one month and a majority of 31 (39.2%) students initiated the use in the age group of 10-11 years. Among the different SLT products, pan masala combined with zarda with 56 (70.8%) users, was found to be the most commonly consumed SLT product. Grocery shops were preferred POS among the students as (67%) of students obtained the SLT product from this POS. 56 (70.8%) of the students wanted to quit the habit of SLT use whereas 49 (62%) students tried to quit the habit and 43 (54.4%) students sought help in order to quit the habit. **Discussion:** Such alarming results in terms of low age of initiation in Delhi is an emerging health problem. Adequate cessation programmes and schemes must be developed and strict implementation of laws and policies to achieve a tobacco free youth is the need of hour.

**Keywords:** Smokeless tobacco- adolescents- school- India- One health- mixed method study

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### Introduction

Smokeless tobacco (SLT) is defined as any kind of tobacco product that (a) is wholly/ entirely or partly/ partially made of tobacco/ tobacco plant/ tobacco leaf/ tobacco extract; or (b) Contains tobacco and is intended for human consumption in any manner or (c) Is used in any other way, in any manner or any other form other than smoking (Sinha and Yadav, 2017).

Tobacco uses among youth is expanding in epidemic extents over the world. It is estimated that the vast share of tobacco users begins to use tobacco items well before the age of 18 years. Globally, 1 in each 10 girls and 1 in each 5 boys, aged 13 to 15 years, utilize tobacco (WHO, 2020). It is further anticipated that current patterns of tobacco use would result within the deaths of 250 million children and young individuals over time, most of them in developing countries (WHO, 2020).

The South East Asian region accounts for 81 percent of the world's smokeless tobacco users. It is also the largest producer and consumer of tobacco products (WHO, 2020). India comes under the top five tobacco product producers

of the world. The average rate of use of tobacco by young people (15-24 years) globally was 17% in 2015 (GYTS Fact sheet, 2009). More than one third of the world's children aged 13 to 15 years (34% or 14.8 million) that consume different forms of tobacco belong to this region (Global burden of disease, 2016).

A wide variety of SLT products are available worldwide, varying in their composition of nicotine content, methods of preparation and form of consumption (Siddiqi et al., 2015). Apart from nicotine which is responsible for addictive nature of tobacco, SLT products contain over 30 known carcinogens such as tobacco-specific nitrosamines (TSNA), arsenic, beryllium, cadmium, nickel, chromium, nitrite, and nitrate. There is a huge variation in the levels of nicotine and carcinogens between products. For example, nicotine content among SLT products varies between 0.2 and 40.1 mg/g, compared to commercial filtered cigarettes which contain 16.3 mg/g of nicotine. There is also disparity in the level of pH among the products, which plays an important role in the level of retention of nicotine and carcinogens and in determining the toxicity of the product. the higher the pH, the higher

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the absorption and, consequently, higher the toxicity. It is thus critical not to consider SLT as a single item, but as group of items with contrasts in their toxicity and addictiveness depending upon their carcinogen, nicotine, pH levels and level of risk posed to human health (Siddiqi et al., 2015). The paucity of data on smokeless tobacco consumption in India among the adolescents was the basis of this study. Thus, it was conducted to assess the pattern of smokeless tobacco use among school going adolescents in senior secondary schools with the assessment of the sociodemographic factors responsible for initiation of smokeless tobacco use by adolescents.

## Materials and Methods

This was a cross sectional study conducted over a period of one year in the catchment areas within 10 km from rural health training centre of Department of Community Medicine, Maulana Azad Medical College New Delhi which is located in Barwala village in North West district of Delhi. The study population consisted of all the students of class 9th -12th enrolled in schools present in the study area and point of sales (POS) vendors in the area of 1 km surrounding these schools. Sample size was calculated using the formula ( $n = Z_{\alpha/2} p q / L^2$ ) taking the prevalence to be 11 % at 95% confidence level with relative error of 20% and considering 10% non- respondents and which comes to be 860 (Kumar, 2014). After obtaining clearance from institutional ethics committee and permission from School Health Scheme, Delhi, a total of 3 schools were selected purposively to take part in the study. The principals and class teachers of the school were approached and explained the nature and purpose of the study after which the permission to conduct study in the school was obtained. On the first visit to school the study subjects were addressed by the principal investigator for a period of 10-15 minutes in which the procedure and context of the study was explained to them and any queries regarding their involvement in the study were addressed at that time. Using the random sampling technique, the study participants were enrolled. The study subjects were distributed participant information sheets and consent forms. On the day of study, an assent form was distributed amongst study subjects following which they were presented with a self- administered questionnaire in Hindi. Any queries regarding the filling of questionnaire study subjects were solved at that instance. The study subjects of not more than 1 class and 1 section were included in the study on a single visit. On the subsequent visit those who were unable to participate in the study were presented with the opportunity to take part in the study. After the data collection, a brief health talk on the adverse health impacts of tobacco with the help of interns posted in RHTC, Barwala was given in the school on a suitable day provided by the school principal. Of the 860 study subjects approached for the study 714 gave consent and assent to participate in the study. The data collected was entered in Ms Excel and analysed using SPSS version 25. Descriptive analysis was done and a test of significance was applied to find the association between variables, and a p value < 0.05 was considered to be statistically

significant.

The Point of Sales (POS) vendors situated and operating in the area of 1 kilometre surrounding the schools were identified and mapped. The POS were identified as outlets selling any forms of tobacco (smoked/ smokeless). For mapping the POS, phone application of the google maps was used. The GPS of the phone was enabled and in google maps a pin was dropped in the application which was saved by creating a list in the phone. All the possible POS were mapped and saved in the list. Using the purposive sampling methodology, the vendors were enrolled in the study.

A total of 8 in depth interviews were conducted using the topic guide mentioned below. The principal investigator explained the nature and procedure of the study to the vendors and any questions regarding their involvement in the study were answered at that instance. A suitable time was determined in accordance with the vendors for conducting the interview. The in-depth interview was conducted at the POS on the agreed time with the help of topic outline guide which had open ended questions on the following themes:

1. Questions regarding sale of tobacco products to minors.

2. The perception of vendors regarding the Framework convention on tobacco control (FCTC) laws and its implementation.

The interviews were conducted in the local language which was Hindi by the principal investigator fluent in both Hindi and English. The instrument SONY ICD-PX240 voice recorder was used to record the in-depth interviews and then subsequently translated into English for analysis and reporting purposes.

## Results

The study population comprised 714 students out of which 79 (11%) students consumed SLT. It was observed that among the 79 SLT users, 22 (27.9%) of students consumed SLT at a frequency of 6-9 days in a period of one month and a majority of 31 (4.34%) students initiated the use in the age group of 10-11 years. Among the different SLT products pan masala combined with zarda with 56 (7.8%) users, was found to be the most commonly consumed SLT product and chewing was observed as the main form of consumption in 55 (7.7%) students. Grocery shops were preferred POS among the students as (7.42%) of students obtained the SLT product from this POS. 56 (7.84%) of the students wanted to quit the habit of SLT use whereas 49 (6.86%) students tried to quit the habit and 43 (6.02%) students sought help in order to quit the habit (Table 1).

Table 2 shows that out of 79 students who were SLT users, 51 (64.5%) of the students initiated the consumption when they were less than 11 years, followed by 16 (20.3%) of students at the age of 12-15 years and then 12 (15.2%) students who initiated at the age of 16 years and above. A higher proportion of 41 (66. 1%) male students initiated SLT use at an age of less than 11 years followed by 14 (22.6 %) students in the age group of 12- 15 years and only 7 (11.3%) students were found to have started at 16

Table 1. Smokeless Tobacco Consumption Pattern of the Users (N =714)

	no (%) (n =714)
Frequency of tobacco use (in last 30 days)	
1-2	21 (2.94)
3-5	16 (2.24)
6-9	22 (3.08)
10-19	14 (1.96)
20-29	5 (0.7)
30	1 (0.14)
Age of initiation of use	
≤7 years	4 (0.56)
8-9 years	16 (2.25)
10-11 years	31 (4.34)
12-13 years	11 (1.54)
14-15 years	5 (0.7)
16-17 years	10 (1.4)
≥18 years	2 (0.28)
Type of tobacco product	
Pan masala+ zarda	56 (7.8)
Zarda	10 (1.4)
Khaini	09 (1.26)
Others	04 (5.1)
Form of consumption	
Chewing	55 (7.7)
Between gums	15 (2.1)
Tobacco with betel quid	07 (0.98)
Snuffing	02 (0.28)
Type of Point of Sale (POS)	
Grocery store	53 (7.42)
Tea stall	17 (2.3)
Mobile/ stationary cart	09 (1.26)
Want to Quit	
Yes	56 (7.84)
No	23 (3.22)
Tried to quit	
Yes	49 (6.86)
No	30 (4.2)
Sought help to quit	
Yes	43 (6.02)
No	36 (5.04)

years and above. Out of 18, 9th standard students, a high proportion of 15 (83.3 %) students initiated SLT use at less than 11 years of age, and the remainder of 3 (16.7%) of students in the age group of 12-15 years.

It was observed, among the 32 students of High Socioeconomic status as per the modified B.G Prasad Scale (Pandey, 2018), 23 (71.9%) students initiated the consumption of SLT at the age of 11 years or less, followed by 6 (18.8%) students in the age group of 12-15 years and 3 (9.3%) students at the age of 16 years and above. Among the students belonging to Upper Middle

class 10 (52.6%) students started the SLT use at the age of 11 years or less., and only 2 (10.5%) students in the age group of 12-15 years and 7 (36.3%) students at the age of 16 years and above. This relationship between the higher socioeconomic status and early age of initiation of SLT use was found to be statistically significant ( $p=0,03$ ).

A total of 51 students who were exposed to tobacco (smoked or smokeless) at School, a trend of early initiation was observed as 40 (78.4%) students belonged to the age group of 11 years or less, followed by 6 (11.8%) students and 5 (9.8%) students belonging in the age groups of 12-15 years and 16 years and above respectively. This relationship between the exposure to tobacco at school premise and early age of initiation among the SLT users was found to be statistically significant ( $p=0.02$ ).

Table 3 describes the thematic analysis of interviews conducted with POS vendors and has been described under various themes and sub-themes. The various themes recognized were:

Reasons for consumption of tobacco among children, purchase of tobacco products by minors and tobacco legislation and warnings which were further sub-divided into 13 sub-themes and described in Table 3.

## Discussion

In the present study, out of 79 students who were SLT users, 51 (64.5%) of them initiated the consumption when they were less than 11 years, followed by 16 (20.3%) of students at the age of 12-15 years and then 12 (15.2%) students who initiated at the age of 16 years and above. This is slightly higher than the cross-sectional study conducted by Kulkarni et al., (2022) conducted on 39,282 school-going students from 914 schools of Udupi district in Karnataka which reported that among SLT ever users, age at initiation was 10 or lower for 29.6% of students. Also, in congruency when compared to the similar studies (Kumar, 2014; Shama, 2021).

Also, it was revealed in our study that a higher proportion of 41(66. 1%) male students initiated SLT use at an age of less than 11 years which is consistent with other studies conducted in similar setting revealed that the mean age of SLT initiation was 16.6 and 17.7 years for male and female, respectively, but in another, they found that higher proportion of girls initiated the use of tobacco at age <11 years (Janeswar, 2017; Aryal, 2015; Narain, 2011). This difference in results can be explained due to different age categories, different study duration and bigger sample size used in the Noida study.

In the present study it was observed, that 23 (71.9%) students of high socioeconomic status started consumption before even reaching 12 years of age however the difference between the socioeconomic status and age of initiation of smokeless tobacco use among the study subjects was not found to be statistically significant.

In our previous study factors such as exposure to tobacco at home, public places, school and school teacher using SLT, and exposure of tobacco advertisement and promotion via different modes of media were found to be associated with the use of SLT in the school-going students (Narain, 2011). On subsequent analysis of the SLT user

Table 2. Relationship between Sociodemographic Factors and the Age of Initiation of SLT Consumption in the Users (N=79)

Factors	Age of initiation of SLT				p value
	≤ 11 years (n= 51)	12-15 years (n=16)	≥ 16 years (n=12)	Total	
Gender					0.152
Male	41 (66.1)	14 (22.6)	07 (11.3)	62 (100)	
Female	10 (58.8)	02 (11.8)	05 (29.4)	17 (100)	
Total	51 (64.6)	16 (20.3)	12 (15.1)	79 (100)	
Class					0.084
9th	15 (83.3)	03 (16.7)	0 (0)	18 (100)	
10th	10 (55.6)	06 (33.3)	02 (11.1)	18 (100)	
11th	12 (60)	05 (20)	03 (15)	20 (100)	
12th	14 (60.9)	02 (8.7)	07 (30.4)	23 (100)	
Total	51 (64.6)	16 (20.3)	12 (15.2)	79 (100)	
Socioeconomic Status					0.065
High	23 (71.9)	6 (18.8)	3 (9.4)	32 (100)	
Upper Middle	10 (52.6)	2 (10.5)	7 (36.7)	19 (100)	
Lower Middle	18 (64.3)	8 (28.6)	2 (7.1)	28 (100)	
Total	51 (64.6)	16 (20.3)	12 (15.1)	79 (100)	
Exposure to SLT in school premises					0.002
Present	40 (78.4)	06 (11.8)	05 (9.8)	51 (100)	
Absent	11 (39.3)	10 (35.7)	07 (25)	28 (100)	
Total	51 (64.6)	16 (20.3)	12 (15.1)	79 (100)	
Exposure to tobacco advertisement and promotion					0.092
o exposure	5 (50)	01 (10)	04 (40)	10 (100)	
Television advertisement	23 (74.2)	05 (16.1)	03 (9.7)	31 (100)	
Social media	13 (68.4)	03 (15.8)	03 (15.8)	19 (100)	
Print media	07 (43.8)	07 (43.8)	02 (12.5)	16 (100)	
Radio	03 (0)	00 (0)	00 (0)	3 (100)	
Total	51 (64.6)	16 (20.3)	12 (15.1)	79 (100)	

in our current study we found out of the above factors exposure to tobacco at school is a significant contributor to the early initiation of smokeless tobacco use in adolescents going to school (Janeswar, 2019; Sharma, 2021; Syamsuiansyah, 2022). In a total of 51 students who were exposed to tobacco at School, a trend of early initiation was observed as 40 (78.4%) students belonged to the age group of 11 years or less, followed by 6 (11.8%) students and 5 (9.8%) students belonging in the age groups of 12-15 years and 16 years and above respectively ( $p=0.02$ ). This reveals a very deep-rooted and multifaceted problem of tobacco use among the youth there is an interconnecting play between teachers, students, parents, and exposure to tobacco which creates a noxious ecosystem in which this impressionable vulnerable age group is failed by its role models and inadequate policies

In the present study all 8 of the point of sales (POS) replied that smokeless tobacco (SLT) was the most commonly sold tobacco product to minors out of which pan masala with zarda (earlier known as gutka) and khaini were the most common smokeless tobacco products followed by cigarettes, bidis. The results of the present study were similar to a qualitative study conducted amongst 60 school-going adolescents from six local government schools in Mumbai which reported that areca-

nut and SLT products were the common products used by the participants (Gupte, 2020).

#### *Reasons for consumption of tobacco according to sellers*

In the present study, most of the respondents were of the opinion that the consumption of tobacco is harmful to the health and gave various reasons for the tobacco consumption such as showing off among peers, affordable addiction, lack of understanding among minors about the harms of tobacco, undermining the addictive nature of tobacco, and being influenced by fancy advertisements of tobacco products. According to 6 (75%) respondents showing off among peers was the main reason for minors consuming tobacco.

“They consider using tobacco as a cool thing” (interviewee 4).

In another qualitative study from six municipal schools in Mumbai easy access to tobacco products, and another study reported affordability to be major factors for encouraging the use of tobacco among adolescents (Patil, 2023; Singh, 2007).

#### *Opinion on the purchase of tobacco products by minors*

In the present study, it was observed that all 8 POS were of the opinion that those who consume tobacco

Table 3. Thematic Analysis of POS Vendors

Theme	Sub-themes	No. of respondents	Verbatim in English translation
Reasons for consumption of tobacco among children	Show off among the peers	6	<p>"Most of children I see these days who consume tobacco, I see a trend of impressing among themselves" (interviewee 2)</p> <p>"If one friend is using khani or 'kama pasand' the others join him because they want to fit in the group" (interviewee 7)</p> <p>"They consider using tobacco as a cool thing" (interviewee 4)</p>
	Affordable addiction	5	<p>"Cigarette costs from 12 to 20 rupees, alcohol costs in hundreds, ganja much more but they can buy a packet of tumbakoo for 5-7 rupees and can use it for a longer period of time" (interviewee 6)</p> <p>"When you have change in your pocket and you are addicted to tobacco you can't go past the shop without having it. When you are in school you can afford only these type of addiction" (interviewee 8)</p>
Purchase of tobacco products by minors	Lack of understanding among the minors about what is right and wrong	4	<p>"Children are young and they don't have the knowledge about the long-term effects of consuming tobacco" (interviewee 1)</p> <p>"Children who start using 'tambakoo' and khani doesn't understand what they are getting themselves into as they are unaware of the dark side of habit of tobacco Consumption" (interviewee 3)</p>
	Addiction of tobacco	2	<p>"In my opinion, this whole thing (minors consuming tobacco) is bad, these small kids start with 'meethi supari' and 'pan', which ultimately makes them habitual of consuming tobacco in the future". - (interviewee 1)</p>
	Fancy advertisements	2	<p>"In my observation consuming tobacco in today's time is a trend by youngsters, nowadays movies, media show hero using tumbakoo so frequently, this is considered cool by children and they are influenced by such media" (interviewee 3)</p>
	Failed Parenting	6	<p>"It is usually labour class are the ones who tell their children to fetch tumbakoo and beedis for them" (interviewee 5)</p> <p>"This is absolutely the fault of parents who are showing their kids the way to this place to buy tobacco" (interviewee 2)</p> <p>"It is parents' job; they should protect their kids from these places" (interviewee 4)</p>
Tobacco legislation and warnings	Behaviour changes in minors who buy tobacco products.	8	<p>"I have seen children who used to buy 'tambakoo' for their fathers 10 years back, now they buy it for themselves". (Interviewee 6)</p> <p>"If I consume tobacco and ask my kid to get it for me, naturally my kid will think that it is okay to taste it a little bit" (interviewee 4)</p>
	Curiosity to try new products	3	<p>"Kids want to try new suparis (betel nut) when they like packaging." (interviewee 1)</p> <p>"For them it's like strong Pass -Pass (mouth sweetener)" (Interviewee 5)</p> <p>"TV ads creates a hunger in mind to try what you see on TV" (interviewee 2)</p>
	Role models and advertisement	3	<p>"All big stars do advertisement of Pan Bahar on TV" (interviewee 4)</p> <p>"They employ action hero like singham, tiger Shroff to sell their products" (interviewee 7)</p> <p>"They are very smart by showing it as kesar and elachi people think its harmful" (interviewee 8)</p>
Tobacco legislation and warnings	Sale to minors	8	<p>"Yes, I know it's illegal to sell tumbakoo (tobacco) to children less than 18 years of age" (interviewee 3)</p> <p>"I know we shouldn't sell tobacco to children but nobody is bothered to check" (interviewee 4)</p> <p>"It's okay to have rules and laws but to implement them is another story on a day-to-day basis" (Interviewee 7)</p>
	Pictorial warnings on tobacco products	6	<p>"I think it's good to put scary pictures on all of tobacco products like cigarettes at least people will think once before taking it" (interviewee 4)</p> <p>"People consume less by seeing such scary cancer pictures, it's a good thing" (interviewee 5)</p> <p>"It doesn't matter much whatever you put on packet those who want to consume will do it" (Interviewee 8)</p>
Tobacco legislation and warnings	Ban on advertisement and promotion of tobacco products	5	<p>"I don't put any posters by myself, company people do it" (interviewee 2)</p> <p>"It's a business company gets new product in market so at that time gives posters and other things like samples for trying" (interviewee 7)</p> <p>"It shouldn't be done as it is harmful for children but I also want to make a living" (interviewee 8)</p>
	Sale of tobacco near educational institutes	7	<p>"I know about the rule of not selling in 100-meter area of school, hospital but I pay monthly to MCD" (interviewee 4)</p> <p>"Whoever sells near schools shouldn't do it, the distance should be made 1 km at least and police should fine such sellers" (interviewee 5)</p> <p>I am aware of such laws but my sale happens here, if not here then where? Also, nobody is going to check " (Interviewee 8)</p>

shouldn't send minors to buy tobacco for them as the act is associated with behavior changes in such a young impressionable age. Other perceptions like failure in parenting, curiosity to try new products and influence of role models and advertisements were the emerged sub themes.

"It is parents' job; they should protect their kids from these places" (interviewee 4)

"I have seen children who used to buy 'tambakoo' for their fathers 10 years back, now they buy it for themselves." (Interviewee 6)

The results of the present study are similar to the findings of other studies reporting parents' habits impact the initiation of tobacco consumption among children at a lower age and becomes easy to buy in the name of their parents (Sinha, 2003; Ghose, 2019).

#### *Awareness and perception of point of sale (vendors) regarding the laws related to sale of tobacco*

In the present study it was observed All of the POS vendors were aware of the ban on sale of tobacco products to minors and 5 (62.5%) of them were aware of the correct legal age of 18 years. 7 of the respondents had awareness regarding the ban on sale of tobacco near educational institutions and 6 (75%) of them were of the opinion that law is good and should be in place but lacks implementation in reality. The awareness among study subjects relating to laws regarding the display of tobacco products and ban on direct and indirect advertisement was found to be minimum as only 4 of the sellers were aware about these laws.) but also explained how tobacco companies incentivized them for displaying their products and lack of checks on these things by the authorities leads to very few complying with such laws. When questioned about the effect on minors seeing such advertisements, 5 (62.5%) of respondents agreed that such advertisements do have an impact on the young mind of the child and is generally done to attract them.

"I know we shouldn't sell tobacco to children but nobody is bothered to check" (interviewee 4)

"People consume less by seeing such scary cancer pictures, it's a good thing" (interviewee 5)

"It's a business company gets new product in market so at that time gives posters and other things like samples for trying" (interviewee 7)

"I don't put any posters by myself, company people do it" (interviewee 2)

The findings of the present study are in line with study by Patil et al which revealed that three out of seven parents knew about the COTPA act, parents were thinking it will be helpful for children to control tobacco use in nearby schools and institutional areas (Patil, 2023).

The findings of the present study are similar to a qualitative study conducted among university students aged > 18 years in Kolkata (Ghose, 2019). The results of this study pointed out that a majority of study subjects strongly felt that the pictorial warnings may be scary and disgusting to look at, but they have no effect whatsoever on the smokers.

The results of the present study are in accordance with other studies where lack of awareness among the shop

vendors along with weak regulatory and enforcement infrastructure in implementing the ban has raised the prevalence and emphasis has been laid on adolescent focused laws enforcement with implementation of creative policies (Patil, 2023; Shakya, 2021). The studies on behaviour pathways provide the basis for formulation of specific policies related to advertisement, sale, packaging, graphic warning labels and health promotion messages directed towards the adolescents to prevent the uptake of areca-nut or tobacco (Shimray, 2016; Geleta, 2021).

This study provides a basic framework in understanding how the adolescents initiate their tobacco use and the various factors associated with it. Additionally, it brings how the laxity in implementation of laws and policies preventing the tobacco use has provided access to tobacco among our young population. Lack of political will and other socio-cultural factors has indirectly promoted smokeless tobacco which has seeped rigorously in our ecosystem directly impacting our adolescent health in general. oral health emerges to be one of the key determinants for overall physical well-being of individual to a larger number of adolescents and to bring behaviour change at a young age. Apart from that, homes and schools create an important part of such ecosystems and there is a need to include tobacco-cessation sessions both for the children and their parents. As none of the studies above reported higher use in schools than homes, the family environment becomes a potential target to work upon and educate the parents, the elders on how their tobacco consumption habit is impacting their off springs.

In conclusion, the existing policies and framework in National Tobacco Control Programme is based around the prevention and cessation of tobacco use in schools. However, the current situation warrants focussing more on the pathways of initiation than on the cessation. The reducing age of initiation of smokeless tobacco consumption as per the study results has to be taken care of appropriately with immediate action in terms of health education and stronger implementation of legislations. By adopting the One Health approach which is a collaborative, multisectoral, and transdisciplinary approach the policy makers and stakeholders need to recognize and take into consideration the interconnection between adolescents, and their shared environment" and to incorporate the whole ecosystem in place of just school environment. Focus should be made to increasing the awareness and sensitizing the young population using strategies such as family and community-based programmes and must be treated as a social, public health concern rather than a business issue.

#### *Limitations*

The study has its own limitations in form of small sample size and can be elaborated on a larger sample for better generalisability.

#### **Author Contribution Statement**

AS, SG, and MS contributed to conception and design of the study. AS organized the database and performed the statistical analysis. AS wrote the first draft of the

manuscript. AB, CD, AM, and VS wrote sections of the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.; First authorship: AS and CD; Senior authorship and equal contribution: SG, MS and AB; Last authorship: AM and VS.

## Acknowledgements

### Ethics approval

Obtained from the Institutional Ethics Committee, Maulana Azad Medical College. Since the tobacco consumption is illegal in the study age group, the students found to have consumed SLT were given appropriate health education for quitting tobacco.

### Permissions

Permissions were taken from the school authorities for the conduct of the study, Although, none were required for the publication.

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