Tobacco Using Behavior among Youth Residing in Urban Slum Areas in Sri Lanka

Manori Dhanapriyanka¹, Kanthi Fransisku²

¹*Institute of Oral Health, Ministry of Health, Sri Lanka, ghanapriyankahm@gmail.com*

²*Retired, Ministry of Health, Sri Lanka, kanthi.rdfc@gmail.com*

TOBACCO USING BEHAVIOUR AMONG YOUTH RESIDING IN URBAN SLUM AREAS IN SRI LANKA

Abstract: Tobacco usage among underprivileged youth has an increasing trend, not been researched adequately. Objective: To assess the prevalence of tobacco using behavior among youth (15-24 years old) residing in the Colombo district urban slum areas, Sri Lanka. Methods: A descriptive cross-sectional study was conducted among a sample of 1435 youths using a cluster sampling technique combined with probability proportionate to size technique, using an interviewer-administered questionnaire. A current user was defined by usage during the past 30 days. Results: Mean age of initiation was 15.44 years (95% CI 15.29 - 15.58). Thirty percent of the sample did not have any type of tobacco using behaviors, 50.7% were current users. The current smokers, betel chewers, and tobacco and areca nut packet chewers were found as 20% (95% CI 18.6-22.2), 21.6% (95% CI 19.5-23.8), and 32.9% (95% CI 30.5-35.3) respectively. Among them, 48.8%, 47.9%, and 40.3% were daily users, respectively. Commonly used products were cigarettes (92.4%), quid with betel leaves, tobacco, areca nut, and lime (63.6%), and mawa (71.9%). Conclusions & recommendations: The youth residing in urban slums should be identified as a high-risk and priority group. Targeted programs should be conducted to them to direct quitting and initiation of tobacco behaviors.

Keywords: Youth, Urban Slums, Tobacco, Smoking, Smokeless type

Introduction

Tobacco kills half of its users and according to World Health Organization (WHO) estimates in the year 2020, it kills more than 8 million people throughout the world every year. The habit of using tobacco is becoming a common behavior among youth. Globally nearly 20% of youth use some tobacco products, and most of them initiate the habit before the age of 10, mainly in the developing world. (Sreeramareddy *et al.* 2014).

World health organization defined the youth as the persons belonging to the age group of 15-24 years. This period is called a period of transition from childhood to adulthood. In this period, they become more mature physically and mainly psychologically. They try to do many tryouts, inculcate many habits, and change their lives during this period. This will be strengthened by many other determinants such as life skills, parental influence, socioeconomic environment, living conditions, and community networks.

According to a survey done in 2018 by Alcohol and Drug Information Center Sri Lanka (ADIC), the current smoking was 21.5% among the 15-24 year old youth group. Among current users, 63.6% were daily users. According to the Global Youth Tobacco Survey conducted in Sri Lanka, the current usage of Smokeless Tobacco (SLT) was 2.4% in 2015 in the age group of 13-15 years (WHO, 2016).

The people living in urban slums are commonly neglected and underprivileged without basic facilities and services. They are more prone to practice risk behaviors because of poor housing and

neighborhood environment, risky lifestyles, lack of health knowledge, and poor physical and psychosocial health. (Kabir et al. 2013) A study done among Youth living in urban slums in Bangladesh has revealed that about 42% of young adults aged between 15-24 years were tobacco smokers, and this prevalence was much higher than the youth living in other areas. (Kabir *et al.*, 2013).

According to the literature, youth living in urban slum areas have a higher risk of using tobacco. A study done in India among youth living in urban slums has shown that a community-based multi-component intervention model was effective. The intervention group had shown a significant decline in current use and ever used (Arora *et al.* 2010). The youth living in urban slum areas in Sri Lanka has not been researched adequately. This study will help to identify the prevalence of tobacco using behaviors and its associated factors of youth living in urban slum areas in the district of Colombo, which are very specific to them and this basic information need to development of targeted intervention strategies related to reduce the initiation and increase the quitting of tobacco using behaviors. Therefore, present study was undertaken to determine the prevalence of tobacco using behavior among youth aged between 15-24 years of age living in urban slum areas in the district of Colombo, Sri Lanka

Methods

The present community-based descriptive cross-sectional study was carried out in selected urban slum areas in the district of Colombo from February 2016 to August 2016. Considering the prevalence of tobacco use as 23% (ADIC -Trend survey, December 2014), absolute precision as 5%, design effect of 0.2, and non-response rate of 10%, required sample size was calculated to be 1435. Cluster size was placed as 20. All youth, including males and females between the ages of 15-24 years, were eligible to participate in the study.

Sampling technique and data collection

Two divisional secretariat areas of the district of Colombo, which had a sample frame of slums, were selected as the study setting. One cluster was defined as a slum. Cluster sampling technique combined with probability proportionate to size technique was adopted to select the required number of slums. Every consecutive house was visited starting from the first house physically situated at the right side of the entrance of the slums, and data were collected till the required sample size was achieved.

Ethical clearance was obtained from the Ethics Review Committee, Faculty of Medicine, University of Colombo, and written informed consent was obtained from the subjects above 18 years and parents of the study participants below the age of 18 years. Permission was obtained to conduct the study by Provincial Director Health Services- Western Province, Regional Director Health Services – Colombo District, District Secretariat- Colombo.

Data was gathered by personal interviews using a pretested interviewer-administered questionnaire which was assured for face, content, and consensual validity. The questionnaire was designed for the main survey. This analysis was done using 2 parts: part A, information on socio-demographic characteristics, and part D, information on Patterns of tobacco using behavior. Cronbach's alpha was 0.8, and it indicates high internal consistency. Data collection was done by trained 3 investigators,

including the principal investigator. All the measures were taken to ensure data quality during the development of the study instrument, the data collection, and analysis.

Statistical analysis was done using Statistical Package for Social Sciences (SPSS) version 15, comprising of calculating proportion, mean and standard deviation. Association was determined using the chi-square test with Yates correction or Fisher's exact test, as appropriate. P-value <0.05 was considered significant for all tests. Risk factor analysis was done using odds ratios (OR) and their respective 95% confidence intervals (CI).

Operational definition

- Current user was defined as “having used tobacco even one or two puff anytime during past 30 days preceding the survey.”
- Ever user was defined as “having used tobacco even one or two puffs during their lifetime.”
- Non- current user was defined as “having used tobacco even one or two puffs during their lifetime but not during past 30 days preceding the survey.”
- Daily user was defined as “having used tobacco every day.”
- Tobacco using behavior was defined as a collection of behaviors of smoking and using smokeless tobacco in the forms of betel chewing and commercially prepared tobacco and areca nut packet chewing (packet chewing)

Results

Out of the total sample of 1435, 1431 youth were eligible for analysis with a 99.7% response rate. Sixty-five-point six percent of the sample belonged to the age group of 15-19 years and 34.4% in 20-24 years age group; with a mean age of 17.53 ± 2.33 years. Fifty-seven percent of the study participants were males and 43% were females. The mean age was almost similar in males and females (17.64 ± 1.9 years for males and 17.38 ± 2.7 years for females). The majority were Sinhalese (67.9%), followed by Muslims (17.1%) and Tamils (15%). Twenty-nine-point nine percent of the sample were in the group currently engaged in school education, and others not engaged in school education activities (school leavers). From the study, participants who were not engaged in school education, 46.5% were employed youth, and others were unemployed. Twenty-four percent of the school leavers had school education up to grade 5, followed by 21% up to grade 10, 12.8% had sat for the ordinary level exam, 0.2% had sat for the advanced level exam, 1.7% had vocational training after leaving the school and 10.5% never had school education. From the school leavers, 84.1% were unmarried, and 15.9% were married.

Out of the total study participants, 996 (69.6%) reported that they had ever used a tobacco product. Of them, 78.3% were males, and 21.7% were females. It was also observed that 726 (50.7%) of study participants used the tobacco product within the past 30 days preceding the survey, and they were the current users of tobacco, and of them, 91.3% were males and 8.7% were females. Table 1 explains the frequency distribution of study participants according to the consuming pattern of tobacco. The

current smokers, betel chewers, and packet chewers were found as 20% (95% CI 18.6-22.2), 21.6% (95% CI 19.5-23.8), and 32.9% (95% CI 30.5-35.3), respectively.

Table1: Frequency distribution of study participants according to the consuming pattern of tobacco

Type of behavior	Current user	Non-current user	Never user
Tobacco using behavior	726 (50.7%)	270(18.9%)	435(30.4%)
Smoking	287 (20.1%)	250 (17.5%)	894(62.5%)
Betel Chewing	309(21.6%)	582(40.7%)	540(37.7%)
Packet Chewing	471(32.9%)	195(13.6%)	765(53.5%)

Table 2 shows the pattern of tobacco using behavior. Among the current tobacco users, the majority used smokeless tobacco (SLT) (60.5%), followed by smoking (11.6%). Twenty eighty percent of the current users consumed both smoking and SLT.

Table 2: Pattern of tobacco using behavior

Type of tobacco	Current users		Total N=726 N (%)	P-Value
	Male N=663(91.3%) N (%)	Female N=63(8.7%) N (%)		
SLT (B+P)	376 (56.7%)	63 (100%)	439 (60.5%)	0.000
Betel Quid (B)	83 (12.5%)	63 (100%)	146(20.1%)	0.000
Packet Chewing (P)	172 (25.9%)	0	172(23.7%)	0.000
Smoking (S)	84 (12.7%)	0	84(11.6%)	0.001
Smoking and Betel chewing	25 (3.8%)	0	25(3.4%)	0.156
Smoking and packet chewing	161 (24.3%)	0	161 (22.2%)	0.000
Smoking and SLT (B or P or both)	203 (30.6%)	0	203(28%)	0.000
Having all three behaviors	17 (2.6%)	0	17(2.3%)	0.387

Among the current male users, the majority (56.7%) used smokeless tobacco products, 12.7% had smoking, and 30.6% % used both smoking and smokeless form of tobacco. Two-point six percent of the males had all three behaviors: smoking, betel chewing, and packet chewing. Among the current female users, they used only smokeless tobacco products, and it was betel quid. Overall, there was a significant difference in the prevalence of smokeless tobacco use among boys and girls ($p=0.000$).

Figure 1 Types of products used by current tobacco users
B=betel leaf, A=areca nut, T=tobacco, L=lime

Figure 1 shows the types of products used by current tobacco users. Among the current smokers, the majority (92.4%) smoked cigarettes, followed by beedi (7.9%). Betel quid with all 4 ingredients (betel (B), tobacco (T), areca nut (A), and lime (L)) was used by most betel chewers (63.6%), followed by betel quid without tobacco (35.9%) and betel with other ingredients (0.4%). Mawa was used by most packet chewers (71.9%), followed by babul (17.6%), pamparagh (6.6%).

In the present study, most tobacco users initiated tobacco at the age of 15 years (39.8%), followed by 17 years (16.5%) and 10.2% at 14 years old. Around 5.2% of them had initiated using tobacco at the age of 10. The mean age of initiation is 15.44 ± 2.2 . The mean age of initiation is more or less similar among males and females (15.27 ± 2.2 and 15.99 ± 2.3 , respectively). The most common reasons for initiation of tobacco were influenced by friends (57.6%) and usage by family members (22%), followed by fun (12.8%), and others (7.6%). The reason for initiation is significantly associated with the current tobacco usage ($p=0.000$).

The majority of the current smokers were daily users (48.8%), followed by 27.9% used several times a week and 12.9% used occasionally. The majority of current betel chewers were also daily chewers (47.9%) followed by used several times per week (25.6%) and occasionally (18.4%). The majority of packet chewers were daily chewers (40.3%), followed by 28.2% chewing several times per week and occasionally (17%). Money for tobacco consumption was obtained from their regular pocket money (21.8%), whereas 70.1% of participants obtain money via the salary. Six-point five percent of them used by sharing with friends.

Table 3 explains the socio-demographic factors associated with current tobacco usage. Socio-demographic characteristics of sex, current education status, employment status, and marital status are significantly associated with the current tobacco usage, which was more common among males, school leavers, and employed unmarried youth (OR of 38.28, 8.88, 35.8 and 0.20 respectively). The age group does not show any significant association with current tobacco usage.

Table 3: Sociodemographic factors associated with the current tobacco usage

Characteristics		Current tobacco users	P-value	OR (95% CI)
Age group N=726	15-19 years	466 (64.2%)	0.266	0.879 (0.707-1.094)
	20-24 years	260 (35.8%)		
Sex N=726	Male	663 (91.3%)	0.000	38.28 (27.9-52.4)
	Female	63 (8.7%)		
Current status of the education N=726	Currently schooling	74 (10.2%)	0.000	8.88(6.7-11.7)
	School leavers	652 (89.8%)		
Employment status N=652	Employed	446 (68.4%)	0.000	35.8 (22.1-57.9)
	Unemployed	206 (31.6%)		
Marital Status N=652	Married	140 (21.5%)	0.000	.209 (.127-.345)
	Unmarried	512 (78.5%)		

Discussion

Usage of tobacco among youth is an emerging threat to the whole world, and this is a major challenge for any country's health system. Public health specialists are trying many interventions to control this issue. The findings of the present study will help to plan targeted interventions to control the problem of tobacco.

The present study has defined tobacco using behavior as a collection of smoking behaviors and usage of SLT in the forms of betel chewing and commercially prepared tobacco and areca nut packet chewing. Many studies globally and locally have defined the current user as having the behavior during the past 30 days, which was the same in this study.

The present study has found that 50.7% of youth living in urban slum areas in the district of Colombo had used tobacco products during the past 30 days preceding the survey. World Health Organization (WHO) STEP survey conducted in 2015 among the Sri Lankan population aged 18 to 69 years of age has found that current tobacco usage is 25.9%, which was much less than the present study's value. The higher value for prevalence of tobacco using behavior than the national figure could be due to the factor that the present study had conducted among a high-risk population. Current tobacco use behavior is much common among male participants with an odds ratio of 38.28 (95% CI 27.9-52.4) than female participants, which was the same trend in the STEP survey. This pattern could be due to the cultural factors established in Sri Lanka.

According to the present study's findings, there were 20.1% current smokers, which was more or less comparable with the findings of other studies. A national survey done by the alcohol and drug information center has found that current smoking behavior among youth aged between 15-24 years old was 29% in 2016 and 18.7% in 2017. According to the National Youth Health Survey, conducted

by Family Health Bureau in 2012/2013 in Sri Lanka, the current smoking prevalence is 17.6%, and it was quite less than the present study finding. This survey has defined a current user as a participant who has used the product during the past week, but the present survey has used the definition of using the product during the past 30 days.

The prevalence of current betel chewers and current packet chewers is 21.6% and 32.9%, respectively. According to the National Youth Health Survey in Sri Lanka, the current betel chewing prevalence was 6.3%. It has been found that betel chewing is significantly higher among non-school-going people—the present study comprised more school leavers that could be a reason for higher values.

The present study has explained the tobacco using behavior further. According to the findings using SLT is the commonest behavior (60.5%), followed by having both behaviors (28%) and smoking behavior (11.6%). All the females were SLT users, and it was chewing betel quid. A study done among Sri Lankan adults over 18 years has found a very low prevalence (1.6%) of betel chewing among urban adults (De Silva et al., 2009). But the present study was restricted to a group in urban slums areas. In these communities, betel chewing is more common among adults, especially women; hence the products could be freely available inside the homes. Since this is a culturally accepted practice; adults do not put restrictions on betel chewing like smoking. These could be the reasons for the high prevalence in the present study.

The mean age of initiation is 15.44 ± 2.2 . According to the survey conducted in 2016 and 2017 by the alcohol and drug information center, more than 50% of tobacco users have initiated their habits in the age group of 16 – 20 years. GYTS in 2015 for Sri Lanka country report explained that most users tried their first initiation in the age group between 13-15 years. The most common reasons for initiation of tobacco were influenced by friends (52.1%) and usage by family members (22%), followed by fun (12.8%), and others (7.6%). This pattern is common to the male and vice versa among female respondents. Most of the time, male participants spend their time outside the homes with friends; hence it could be the main reason for initiation for risk behaviors in this community. In females most common factor for initiation of risk behaviors was family may be due to spending their free time mostly in the house, and the products related to risk behaviors are freely available in these houses. When compared these findings with the survey done in 2015 by the alcohol and drug information center, the most common reason for initiation of tobacco was to socialize with friends, followed by fun and happiness.

Conclusion

The youth residing in urban slums should be identified as a high-risk and priority group. The high prevalence of tobacco (smoking and smokeless) using behavior among youth in urban slum areas should be identified as an important public health issue. Targeted programs should be conducted to them directing quitting and initiation of tobacco behaviors. Well-planned specified health promotional activities with multi sectors should be conducted among these communities (Arora et al. 2010). Further research should be conducted among urban slums covering up the whole of Sri Lanka.

Acknowledgements

All community leaders and the study participants of the study sample, Chief health education officer of the Colombo municipal council, should be acknowledged for their kind support.

Funding – none

Conflict of Interest - none declared

References

- Alcohol and Drug information centre Sri Lanka. Trend survey on Tobacco and Alcohol Sri Lanka. [online];2014. Available from <http://www.adicsrilanka.org/publication>
- Alcohol and Drug information centre Sri Lanka. Trend survey on Tobacco and Alcohol Sri Lanka. [online];2016. Available from <http://www.adicsrilanka.org/publication>
- Alcohol and Drug information centre Sri Lanka. Trend survey on Tobacco and Alcohol Sri Lanka. [online];2017. Available from <http://www.adicsrilanka.org/publication>
- Alcohol and Drug information centre Sri Lanka. Trend survey on Tobacco and Alcohol Sri Lanka. [online];2018. Available from <http://www.adicsrilanka.org/publication>
- Amarasinghe, H.K., Johnson, N.W., Laloo, R., Kumaraarachchi, M. and Warnakulasuriya, S., 2010. Derivation and validation of a risk-factor model for detection of oral potentially malignant disorders in populations with high prevalence. *British journal of cancer*, 103(3), pp.303-309.
- Amarasinghe, H.K., Usgodaarachchi, U.S., Johnson, N.W., Laloo, R. and Warnakulasuriya, S., 2010. Public awareness of oral cancer, of oral potentially malignant disorders, and of their risk factors in some rural populations in Sri Lanka. *Community dentistry and oral epidemiology*, 38(6), pp.540-548
- Anand, K., Shah, B., Yadav, K., Singh, R., Mathur, P., Paul, E., and Kapoor, S.K., 2007. Are the urban poor vulnerable to non-communicable diseases? A survey of risk factors for non-communicable diseases in urban slums of Faridabad. *National Medical Journal of India*, 20(3), p.115.
- Arora, M., Tewari, A., Tripathy, V., Nazar, G.P., Juneja, N.S., Ramakrishnan, L. and Reddy, K.S., 2010. Community-based model for preventing tobacco use among disadvantaged adolescents in urban slums of India. *Health promotion international*, 25(2), pp.143-152.
- Chockalingam, K., Vedhachalam, C., Rangasamy, S., Sekar, G., Adinarayanan, S., Swaminathan, S. and Menon, P.A., 2013. Prevalence of tobacco use in urban, semi-urban, and rural areas in and around Chennai City, India. *PLoS One*, 8(10), p.e76005.
- Das, N., Tasa, A.S. and Medhi, A.H., 2017. Pattern of tobacco use among adolescents in urban slums of Jorhat Assam. *International Journal of Community Medicine and Public Health*, 4, pp.4232-7.
- De Silva, V.A., Hanwella, D.R.C. and Gunawardena, N., 2009. Prevalence of betel chewing among males in Colombo and Polonnaruwa districts. *Journal of the College of Community Physicians of Sri Lanka*, 14, pp.2-23.
- Family Health Bureau, National Youth Health Survey 2012/2013 Sri Lanka, Family Health Bureau, 2015.
- Gupta, V., Yadav, K. and Anand, K., 2010. Patterns of tobacco use across rural, urban, and urban-slum populations in a north Indian community. *Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine*, 35(2), p.245.
- Kabir, M.A., Goh, K.L., Kamal, S.M.M. and Khan, M.M.H., 2013. Tobacco smoking and its association with illicit drug use among young men aged 15-24 years living in Urban Slums of Bangladesh. *PLoS One*, 8(7), p.e68728...
- Khan, M.M.H., Khan, A., Kraemer, A. and Mori, M., 2009. Prevalence and correlates of smoking among urban adult men in Bangladesh: slum versus non-slum comparison. *BMC Public Health*, 9(1), pp.1-12.

Khandker, N.N., Biswas, T., Khan, A.N.S., Hasib, E. and Rawal, L.B., 2017. Socio-demographic characteristics and tobacco use among the adults in urban slums of Dhaka, Bangladesh. *Tobacco induced diseases*, 15(1), pp.1-8.

Ministry of Health, Nutrition and Indigenous Medicine Sri Lanka and World Health Organization. Noncommunicable disease risk factor survey Sri Lanka. [Online]; 2015. Available from: <http://www.who.int/chp/steps/STEPS-report-2015-SriLanka.pdf?ua=1>.

Somatunga, L.C., Sinha, D.N., Sumanasekera, P., Galapatti, K., Rinchen, S., Kahandaliyanage, A., Mehta, F.R. and Jayasuriya-Dissanayake, N.L., 2012. Smokeless tobacco use in Sri Lanka. *Indian Journal of Cancer*, 49(4), p.357.

Sreeramareddy, C.T., Pradhan, P.M.S., Mir, I.A. and Sin, S., 2014. Smoking and smokeless tobacco use in nine South and Southeast Asian countries: prevalence estimates and social determinants from Demographic and Health Surveys. *Population health metrics*, 12(1), pp.1-16.

World Health Organization, Global Youth Tobacco Survey (GYTS) Sri Lanka 2015 Country Report, World Health Organization, Sri Lanka, 2016, http://www.searo.who.int/tobacco/data/gyts_sri_lanka_2015_report.pdf?ua=1

Appendix

Table1: Frequency distribution of study participants according to the consuming pattern of tobacco

Type of behavior	Current user	Non-current user	Never user
Tobacco using behavior	726 (50.7%)	270(18.9%)	435(30.4%)
Smoking	287 (20.1%)	250 (17.5%)	894(62.5%)
Betel Chewing	309(21.6%)	582(40.7%)	540(37.7%)
Packet Chewing	471(32.9%)	195(13.6%)	765(53.5%)

Table 2: Pattern of tobacco using behavior

Type of tobacco	Current users		Total N=726 N (%)	P-Value
	Male N=663(91.3%) N (%)	Female N=63(8.7%) N (%)		
SLT (B+P)	376 (56.7%)	63 (100%)	439 (60.5%)	0.000
Betel Quid (B)	83 (12.5%)	63 (100%)	146(20.1%)	0.000
Packet Chewing (P)	172 (25.9%)	0	172(23.7%)	0.000
Smoking (S)	84 (12.7%)	0	84(11.6%)	0.001
Smoking and Betel chewing	25 (3.8%)	0	25(3.4%)	0.156
Smoking and packet chewing	161 (24.3%)	0	161 (22.2%)	0.000

Smoking and SLT (B or P or both)	203 (30.6%)	0	203(28%)	0.000
Having all three behaviors	17 (2.6%)	0	17(2.3%)	0.387

Table 3: Sociodemographic factors associated with the current tobacco usage

Characteristics		Current tobacco users	P-value	OR (95% CI)
Age group N=726	15-19 years	466 (64.2%)	0.266	0.879 (0.707-1.094)
	20-24 years	260 (35.8%)		
Sex N=726	Male	663 (91.3%)	0.000	38.28 (27.9-52.4)
	Female	63 (8.7%)		
Current status of the education N=726	Currently schooling	74 (10.2%)	0.000	8.88(6.7-11.7)
	School leavers	652 (89.8%)		
Employment status N=652	Employed	446 (68.4%)	0.000	35.8 (22.1-57.9)
	Unemployed	206 (31.6%)		
Marital Status N=652	Married	140 (21.5%)	0.000	.209 (.127-.345)
	Unmarried	512 (78.5%)

Figure 1 Types of products used by current tobacco users
B=betel leaf, A=areca nut, T=tobacco, L=lime