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Original Research Article

Tobacco and betel nut use among school going adolescents of government high school of Himmatnagar city, Gujarat, India: a cross sectional study

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ABSTRACT

Background: Adolescence period is very crucial in the life of an individual, when major physical, psychological and behavioral changes take place. Tobacco and areca nut use among school going adolescent is becoming a major public health problem. The aim was to determine the prevalence and pattern of smokeless tobacco and betel nut use among school going adolescents.
Methods: The study was a cross sectional study. After taking the permission of principal of Government high school and consent of the parents of adolescents, 546 adolescents were interviewed during February-March 2016. A self-administered questionnaire was used for data collection. Thus collected data was analyzed using SPSS 17 (Trial Version).
Results: Age of the study students (total 546) ranged from 10-19 years. (Mean age=14.60 ± 2.84 years). Out of 546 children 166 (30.4%) children had addiction. Prevalence of any type of addiction in girls and boys was 13.4% and 17.0% respectively. Tobacco prevalence was 12.3% and betel nut prevalence was 18.1%. Type of addiction and its association with gender was highly significant. All children addicted to tobacco using chewing form (gutkha) of tobacco. The mean age group of children who consume tobacco and betel nut was 16.14±1.33 years and 16.13±1.51 years respectively. Most common reasons among adolescents for starting addiction of tobacco and betel nut was to look mature (88.0%) followed by to look good (73.5%) and to refresh breathe (56.0%).
Conclusions: High prevalence of tobacco and betel nut use among adolescents needs attention of parents, teachers and health officials.

Keywords: Age at initiation, Adolescent, Betel nut, Prevalence, Substance abuse, Tobacco

INTRODUCTION

Adolescence more broadly refers to the phase of human development which encompasses the transition from childhood to adulthood. This period is very crucial, since these are the formative years in the life of an individual, when major physical, psychological and behavioral changes take place.[1] Many adult health problems e.g.

hypertension, diabetes have their early origins in early adulthood, because this is the time when lifestyles are formed. In primordial prevention, efforts are directed towards encouraging adults to adopt healthy lifestyles. The main intervention in primordial prevention is through individual and mass education.[2]

During adolescent period, people become increasingly independent. Adolescent health behavior habits are influenced by the school setting and often track into adulthood. They have their own choices in areas such as diet, substance use, sexuality, physical activity and use of health care services. Health of the adolescents should be promoted in a school, as school is a key location for educating them about health, hygiene and nutrition, and for putting in place interventions.[3] The fact is that the most of these conditions are preventable or avoidable and curable especially in early stages by promotion of hygienic practices among school children through proper health education by teachers, who are the first contacts.[4]

Tobacco and areca nut use among school children is becoming a serious problem in developing countries. The early age of initiation underscores the urgent need to intervene and protect this vulnerable group from falling prey to this addiction.[5] With this background in mind, the present study was undertaken to determine the prevalence and pattern of smokeless tobacco and betel nut use among adolescent students of Government High school.

METHODS

The study was a cross sectional study. Government high school of Himmatnagar city of Gujarat, India was selected by purposive sampling. After taking the permission of principal of school and informed written consent of the parents of children, 546 Adolescent students of 10-19 years age groups were interviewed during February-March 2016. A self-administered questionnaire was used for data collection. Questionnaire was converted in vernacular language for assessment. Data were analysed using SPSS version 17 (trial version). Parameters such as rate, ratio and percentages were calculated. In order to have valid interpretation of rates, 95% confidence intervals (CI) were calculated. To test the significance of the difference among the statistical parameters in different subsets of population, suitable statistical tests were applied.

RESULTS

Age of the study children ranges from 10-19 years. Mean age of the study children was 14.60±2.84 years. Maximum numbers of the children were in the age group of 15-19 years (52.6%). Mean age of female and male children was 14.88±2.29 years and 14.92±2.02 years respectively (Table 1).

Out of 546 children 166 (30.4%) children had addiction. Prevalence of any type of addiction in girls and boys was 13.4% and 17.0% respectively. Tobacco prevalence was 12.3% and betel nut prevalence was 18.1%. Type of addiction and its association with gender was highly significant.

Out of 546 adolescents, 166 (30.4%) had addiction. Out of 311 adolescents 93 (56.0%) were males and 73 (44.0%) were females. Prevalence of any type of addiction in girls and boys was 13.4% and 17.0% respectively. All adolescents addicted to tobacco using chewing form (gutkha) of tobacco. The mean age group of adolescents who consume tobacco and betel nut was 16.14±1.33 years and 16.13±1.51 years respectively (Table 2).

Table 1: Gender wise distribution of adolescents according age groups.

Age groups	Female (%)	Male (%)	Total (%)
10-14	145 (26.5)	114 (20.8)	259 (47.4)
15-19	139 (25.4)	148 (27.1)	287 (52.6)
Total	**284 (52.0)**	**262 (48.0)**	**546 (100)**

Out of 93 male adolescents who had addiction majority of adolescents (63.4%) consume tobacco in the form of gutkha and 76.3% male adolescents had addiction since 1 to 3 years. Among the tobacco users, the mean age at the start of any tobacco use was 11.3 years with an SD of 2.52 years. Out of 73 female adolescents who had addiction majority of adolescents (89%) consume betel nut and 64.3 % female adolescents had addiction since 1 to 3 years (Table 3).

Table 2: Gender wise distribution of adolescents according to their type of addiction.

Addiction type	Gender		Total
	Female	Male	
Tobacco	8 (1.5)	59 (10.8)	67 (12.3)
Betel nut	65 (11.9)	34 (6.2)	99 (18.1)
Total	**73 (13.4)**	**93 (17.0)**	**166 (30.4)**

Chi-square: 46.7; Degrees of freedom: 1; $p < 0.0001$

Most common reasons among adolescents for starting addiction of tobacco and betel nut was to look mature (88.0%) followed by to look good (73.5%) and to refresh breathe (56.0%) (Table 4).

Table 3: Gender wise distribution of adolescents according to duration of their addiction.

Duration of addiction	Gender	
	Male	Female
1 to 3 years	71 (76.3)	47 (64.3)
4 to 9 years	22 (23.7)	26 (35.7)
Total	**93 (100)**	**73 (100)**

Table 4: Distribution of children according to reasons for starting tobacco and betel nut use.

Reason	Number of children	Percentage
Look mature	146	88.0
Look good	122	73.5
Refresh breathe	93	56.0
When unhappy	86	51.8
postpone hunger	75	45.2
Custom	68	41.0
Aid to concentration	52	31.3
Taste	46	27.7
Boredom	44	26.5
Craving	36	21.7
Snack	33	19.9
Pleasure	31	18.7
No replies	20	12.0

*Multiple responses were recorded.

DISCUSSION

In our study out of total adolescents 30.4% had addiction. Prevalence of any type of addiction in girls and boys was 13.4% and 17.0% respectively. Tobacco prevalence was 12.3% and betel nut prevalence was 18.1%. In a study done by Thakor N et al 35.9% children had addiction. Prevalence of any type of addiction in girls and boys was 22.8% and 48.8% respectively.[5] Tobacco prevalence was 18.6% and areca nut prevalence was 17.3%. In Nitin J et al the prevalence of betel nut usage among boys and girls was 27.3% and 6.1% while it was 2.4% for tobacco (gutkha) amongst boys in 10-16 years age group.[6]

In Muttapppallymyalil J et al tobacco prevalence was 8.5% in 13-17 years age group and it was 15.9% among male students in the same age group.[7] In Raj N et al tobacco prevalence was 11.2% in 11-19 years age group.[9] In Pal R et al tobacco prevalence was 18.15% in 11-18 years age group and in 13-15 years age group tobacco prevalence was 14.00% and 6.34% among males and females respectively.[9] Male students were easily succumbed to peer pressure leading to addiction. School age particularly adolescence is a critical time for the health and future development of boys and girls. Experience and behavior during these formative years can influence lifelong health, as well as put current health at risk.

In our study, tobacco use among male adolescents were significantly high than among female adolescents. In Majara J P et al prevalence of tobacco use among males was found to be significantly high (42.1%) than among females (17.0%) in the age group of 13-15 years.[10]

In our study majority of adolescents (63.4%) consume tobacco in the form of gutkha and 76.3% male adolescent had addiction since 1 to 3 years. Among the tobacco users, the mean age at the start of any tobacco use was 11.3 years with an SD of 2.52 years. Out of 73 female adolescents who had addiction majority of adolescents (89%) consume betel nut and 64.3% female adolescents had addiction since 1 to 3 years. In Thakor N et al 70.3% adolescents consume tobacco in the form of gutkha and 85.2% male children consume tobacco since 1 to 3 years and 14.8% children since 4 to 9 years.[5] Among the tobacco users, the mean age at the start of any tobacco use was 12.8 years with an SD of 1.1 years. Out of 99 female children who had addiction majority of children (87.9%) consume areca nut and 85.1% female children consume areca nut since 1 to 3 years and 13 (14.9%) children since 4 to 9 years.

In Singh V et al tobacco prevalence in 10-18 years age group was 5.4 % (boys: 4.6%, girls: 0.8%) while 27% and 6% of children were consuming tobacco since last 2 and 5 years.[11] In Naresh M et al 33.12% of the adolescents were addicted with one or other type of tobacco chewing, majority of addicted adolescents were in the age group of 17- 19 years (36.26%).[12] Tobacco chewing is the most frequent form of using tobacco by adolescents than smoking. Majority of the adolescents were addicted for more than 12 months (57.47%).

In our study the mean age group of children who consume tobacco and betel nut was 16.14±1.33 years and 16.13±1.51 years respectively. In Thakor N et al the mean age group of children who consume tobacco and betel nut was 14.34±1.83 years and 14.03±1.41 years respectively.[5]

High prevalence of tobacco and betel nut in children indicate that more emphasis should be given to increasing their awareness regarding hazards of these substances through health education campaign with active involvement of teachers and parents. There should be strict rules, regulations and punishment regarding tobacco consumption by children of boarding school. There should be no vendors who sell tobacco in any forms within the radius of 5 kilometres of the schools. There should be strict implementation of COTPA Act (Cigarettes and Other tobacco products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003) with the help of District Officials.

However, study done in only one school of Himmatnagar city limits us to generalize the results. There is definitely a need for well-planned, large-scale studies using standardized methodologies to estimate prevalence of tobacco and betel nut use among adolescents. When planning these studies it is necessary to ensure that importance is given to representation of the different regions of India. A comprehensive study including anthropometric data, biochemical data, clinical signs of hazards of tobacco and betel nut use and dietary intake data among the same group of adolescents will give a better insight into the situation.

CONCLUSION

High prevalence of tobacco and betel nut among these adolescents needs awareness regarding hazards of these substances through health education campaign with active involvement of teachers and parents.

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