

Predictors of Paan, Nass and Gutka (Oral Tobacco) Use among University Students

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ABSTRACT

Background: Prevalence of cancers associated with the use of oral tobacco (OT) is rising very rapidly and prevention of use is the best option to tackle this scenario. This cross-sectional study estimated the proportion of OT use and predictors associated with its initiation and determined the knowledge, attitude.

Method: A total of 354 students (15-30 years age) in five colleges were interviewed by medical students and completed a peer reviewed, pre-tested, self-administered questionnaire. Chi square test and logistic regression analyses were applied to the results.

Results: Thirty nine (11.0%) students were lifetime users of smokeless tobacco among which nineteen (5.4%) were occasional users, seven (2.0%) were current users and thirteen (3.6%) fulfilled the criterion for established users. Paan was the most commonly used form of smokeless tobacco followed by Nass. On univariate analysis, lifetime use of smokeless tobacco showed significant associations with the use of cigarettes, student gender (M > F), individual condition (native > guest) and kind of the College (Engineering > Psychology).

Conclusion: We suggest socially and culturally acceptable educational and behavioral interventions for control of OT usage and hence to prevent its associated cancers.

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► *Implication for health policy/practice/research/medical education:*

Acceptable educational and behavioral interventions for control of Oral Tobacco usage

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1. Introduction:

Smokeless tobacco' includes various forms of tobacco which "Paan" being the most common one used (1). Paan consists of a number of ingredients, including tobacco, areca nut, slaked lime, and spices and introduced in India nearly three decades ago. Paan, Nass and gutka are widely used in south and Southeast Asia and by those immigrants, and their use has spread

across to other countries (2-12). It's said that betel quid and chewable tobacco is the fourth most commonly used psycho-active substance in the world, ranking after caffeine, alcohol and nicotine (1).

Smokeless tobacco users in India and Pakistan together have been estimated to number 100 million (13). In India about 35–40% of tobacco consumption is in smokeless forms while an earlier study in Pakistan showed that 21% of men and 12% of women were users of betel quid (14). In Pakistan, a recent study among the adolescents and adults of a Karachi squatter settlement reported that 40% of the population was using at least one chewable product of betel, areca and tobacco on a daily basis (15).

Unfortunately it's reported that increasing use occurred among vulnerable groups such as children, teenagers, women, immigrants of South Asian to other countries and also adjacent countries especially boundary's states (16).

Factors that continue to encourage people to use smokeless tobacco include its affordability, ease of purchase or production and the widely held misconception that it has medicinal value for improvement in tooth ache, headache and stomach ache (16). Furthermore, in contrast to cigarettes, there is no taboo against using smokeless tobacco and the government efforts have also focused more on eliminating cigarette use than tobacco as a whole (16,17). All these, coupled with peer pressure and the belief that smokeless tobacco is less hazardous than cigarette smoking, mean that these forms continue to be used by vast numbers of people (17).

Chewing betel, areca and oral tobacco products lead to discoloration of teeth, development of chronic debilitating diseases involving gingival and oral mucosa, and higher mortality among users. These diseases include oral sub mucous fibrosis, oral leukoplakia, oral cavity and other head and neck cancers (18, 19).

There is also evidence that oral tobacco is a risk factor for hypertension and dyslipidemia (16). Chewing of tobacco by

pregnant mothers has been found to cause an increased incidence of still births and low birth weight deliveries (16). In addition, chewing of betel quid, with or without tobacco can aggravate asthma and predispose the users to diabetes mellitus (16). Regular use of Paan and gutka leads to oral cancer and precancerous conditions (20,24).

Iran is a neighbor of Pakistan where smokeless tobacco is easily available. Until recent years, smokeless tobacco was very rare in Iran, but now its use is spreading slowly in these parts of the country. The purpose of this study is to explore the patterns of Paan and Nass consumption in the eastern states such as Sistan-Balouchestan. These types of studies have important implications for future oral tobacco investigations and interventions in these large, growing communities.

2. Materials and Methods:

This was a multi-center cross sectional study carried out on students of five colleges of Sistan-Baluchestan University during April-July 2011. The colleges (Engineering, Psychology, Management, Science and Literature) were selected in order to compare the patterns of tobacco use in students with different conditions. We chose all students of those colleges, nearly 381 cases out of which 354 subjects filled the questionnaire (48.0% males and 52.0% females, mean age 21.57, SD: 1.90). A peer reviewed, pilot tested, anonymous self-administered questionnaire was used. Questions were asked regarding occasional, current, and established use of smokeless tobacco. Occasional users were defined as having used smokeless tobacco at least once or twice in their life. Current users were defined as having used smokeless tobacco at least once in the last 30 days while established users were defined as having used smokeless tobacco on more than 100 occasions in their lifetime.

Ethical approval for the study was obtained from the Ethical Committee of

Sistan-Baluchestan University. The nameless questionnaires were collected back in an unmarked envelope to ensure complete confidentiality. The study was conducted in compliance with the 'Ethical Principles for Medical Research involving Human Subjects' of Helsinki Declaration (25). Verbal informed consent was obtained from all subjects and documented in the presence of a witness. Data was entered and analyzed with Statistical Package for Social Sciences (SPSS), version 18. Descriptive statistics of socio-demographic information and use of chewable tobacco products were obtained. univariate and multivariate odds ratio with 95 percent confidence interval were obtained using Chi square and logistic regression analyses, respectively. For all purposes, a p value of < 0.05 was considered to be significant.

3. Results:

One hundred and forty six (41.24 %) students had used tobacco in some form (smoked or smokeless) in their lifetime. Thirty nine (11.01 %) students were lifetime users of smokeless tobacco among

which seven (1.97 %) were current users while 13 (3.67 %) fulfilled the criterion for established users and nineteen (5.36 %) students were occasional users of smokeless tobacco. The frequency and form of smokeless tobacco use is shown in Table 1.

Paan (7.63 %) was the most commonly used form of smokeless tobacco followed by Nass (3.38 %). About 21 (%78) individuals of Paan users belonged to the Engineering College while 7 (%52) of Nass users studied in Psychology College.

About 30 (%77) of lifetime users also smoked cigarettes while among people who had never used smokeless tobacco, only 12(%30.5) were smokers (p value: < 0.001). The mean age at which the students began smoking, was 17.94 (SD=1.64) years while the mean age at which they began using smokeless tobacco was 18.14 (SD=1.49) years (It was not significant; p value: 0.29). Lifetime use of smokeless tobacco was also found to have significant associations with student gender (M > F, p value: < 0.000), student habitat (native > guest, p value: 0.07) and kind of College (Engineering >

Table 2: Demographic data in lifetime user of smokeless tobacco

		Frequency	Percent
Gender	Male	36	10.17
	Female	3	0.84
College	Engineering	16	4.52
	Psychology	11	3.11
	Management	3	0.84
	Science	5	1.41
Habitat	Literature	4	1.13
	Native	29	8.19
	Guest	10	2.82

Table 1: Pattern of use of smokeless tobacco among colleges' students

		Frequency	Percent
Situation	Occasional	19	5.36
	Daily	7	1.98
	Established	13	3.67
Kind	Paan	27	7.63
	Nass	12	3.38
Non user	Smokeless	315	88.99
Total		354	100.00

Table 3: Predictors of lifetime use of smokeless tobacco on multivariate analysis

	O.R.	C.I.	p-value
Gender	2.198	1.77 – 4.102	0.002
Location of College	2.155	1.250 – 3.716	0.008
Cigarette smoking	4.203	2.279 – 7.751	0.000

Psychology, $p < 0.001$). The frequency of demographic data in smokeless tobacco lifetime users is shown in Table 2.

Multivariate analysis showed that there was a higher prevalence of smoking among students who were lifetime users versus those who had not used smokeless tobacco (O.R: 4.203 [2.279–7.751], p value: < 0.000). This association was independent of age, gender, habitat (being native) and kind of college.

Gender was also found to be independently associated with lifetime use of smokeless Tobacco. Male students were more likely to be lifetime users than female students. (O.R: 2.198 [1.177–4.102], p value: 0.002).

An independent association was also found between lifetime use of smokeless tobacco and the kind of college. There was a higher prevalence of lifetime users among students from the Engineering College compared to Psychology. (O.R: 2.155 [1.250–3.716], p value: < 0.008). Results of multivariate analysis are shown in Table 3.

4. Discussion:

To the best of our knowledge, this pilot study was the first evaluation of Paan and Nass use in Iran. Almost all studies carried out in Iran, have been focused on the patterns of cigarette smoking alone and not the use of smokeless tobacco. Although some studies have been carried out, especially in India and Pakistan about smokeless tobacco, because of its common use in those countries, regarding its role in head and neck cancers especially oral cavity and pharynx (15, 19, 26-7) oral mucosal lesion (27), bladder carcinoma and (28) peptic ulcer disease (29). In the studies carried out in India and Pakistan, the range of lifetime smokeless tobacco users was in the range of 23 to 47 percent (28-31). Understandably, our figure of 11

percent prevalence is much lower compared to the rates among patients with conditions likely to be the result of long term use of smokeless tobacco.

It's reported that in 1982, 21 percent of Karachi people used Paan , and in the recent study (15) 40 percent used smokeless tobacco. Various studies (16,31-2) have shown that the use of smokeless tobacco is inversely associated with the level of education and this might explain the lower prevalence reported by our study because our population was comprised of guest students who were also likely to be more aware of the hazards of smokeless tobacco than others, but it should be mentioned that Sistan-Baluchestan is a boundary state.

Most studies have reported that Paan is the most common form of smokeless tobacco use in India but in Pakistan Nass or Naswar were the more popular choices. Our study reports Paan to be the most commonly used among students. More significantly, it was seen that 52 percent of Paan users belonged to Engineering College. In Sistan-Baluchestan, despite neighboring Pakistan, Paan is a new drug and it's more popular than Nass, especially among educated people and guests. It's well known that most guest students are in Engineering College and the highest mean score of examination was observed in that college. On the other hand, industrially prepared Paan marketed in bright, attractive sachets with appealing brand names like 'Sir', 'Shahi (royal)', are gaining popularity, especially among the guest students. We also reported an independent association between the use of smokeless tobacco and the kind of college, with students from Engineering College being more likely to be lifetime users. One explanation of this is the high tendency of those students toward courageous and risky behaviors. Our study also shows a

significantly higher prevalence of smoking among users of smokeless tobacco. This could be because the same risk factors probably encourage people to take up smoking as well as the use of smokeless tobacco. In our study, the mean age at which the students started smoking was similar to that at which the students began using smokeless tobacco. This means that both habits are acquired at an equal age, again signifying possible similar reasons behind the use of smoked and smokeless tobacco. Our finding that the use of smokeless tobacco was more common among the male gender is in line with what was found by Imam *et al* (5) and Mazahir *et al* (6). We feel this is because the use of tobacco (smoke and or chewable) remains socially more acceptable for males than females.

On univariate analysis, we found an association between native students and using smokeless tobacco and multivariate analysis showed that this was an independent association. In the other hand, common use of smokeless tobacco in native people in boundary states widely spreads among educated classes.

5. Conclusion:

Use of smokeless tobacco by college students, should not be ignored, considering their future role in communities. Adding the goal of eliminating the use of smokeless tobacco to the existing law against cigarette smoking, may help. This is because similar factors seem to promote the use of cigarettes as well as smokeless tobacco. Also, colleges should consider providing greater education about the myths and hazards of smokeless tobacco. Furthermore, boundary states preferences for the smokeless tobacco use should be kept in mind while planning preventive programs. Law in boundary states has to focus more on eliminating Paan and Nass usage. Further community-based studies are required to highlight the health burden due to smokeless tobacco and to better plan anti-tobacco law in the existing

resources of a developing country such as Iran.

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