

RESEARCH COMMUNICATION

Predictors of Oral Tobacco Use Among Young Adult Patients Visiting Family Medicine Clinics in Karachi, Pakistan

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Abstract

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 and practices of OT users. A total of 231 young adult patients (15-30 years age) were interviewed by medical students in family practice clinics in Karachi, Pakistan. OT use was considered as usage of any of the following: betel quid (paan) with tobacco, betel nuts with tobacco (guthka), and snuff (naswar). Overall, 49.8% (95% CI=43.3-56.2) subjects had used OT at least in one form. Multivariable analysis demonstrated independent association of OT users with secondary education level (adjusted OR=3.6; 95% CI=1.6-8.1) and use of OT by a family member (OR=2.3; 95% CI=1.3-4.0). Among OT users, 37.4% started after being inspired by friends/peer pressure, 60% using for more than 5 years, 53.2% users reported getting physical/mental comfort from the use of OT while 31.6% tried to quit this habit but failed. We suggest socially and culturally acceptable educational and behavioral interventions for control of OT usage and hence to prevent its associated cancers.

Keywords: Oral tobacco - cancer prevention - young adults - Pakistan

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Introduction

Approximately 5 million people die each year in the world due to tobacco, a trend which is expected to increase each year if tobacco control policies are not implemented (World Health Organization, 2006). Although, smoking contributes the most to this epidemic, the incidence of alternative forms of tobacco use is on the rise (Prignot, Sasco et al., 2008). One important form is that of non-combusted "oral" or "smokeless" tobacco, which has a wider prevalence in certain areas of the world, particularly in South Asia and Pacific region (Gupta and Ray, 2003). This is specifically the concern among adolescents and youth. According to a recent global survey, use of oral tobacco (OT) surpasses the use of smoking in younger age groups (Warren, Jones et al., 2008).

A large number of tobacco products are made in and available, which contain tobacco and are intended to be chewed, sucked or applied on teeth or gums (Gupta and Ray, 2003). These include, but are not limited to, Pan, Guthka and Niswar. Pan consists of betel leaf and betel quid with or without tobacco in the addition of number of spices varying with local custom (Roth, Aitsi-Selmi et al., 2009). Guthka is a relatively newer form of OT, which is a dried mixture of areca nut, catechu, slaked

lime, tobacco and additional condiments and spices, available commercially in brightly packaged foil, and is particularly appealing to the younger age groups (Gupta and Ray, 2003; World Health Organization, 2006). Niswar is a mixture of powdered tobacco and slaked lime, more prevalent in Pakistan and neighboring countries (Gupta and Ray, 2003).

OT and its ingredients mainly betel nut and slaked lime are widely known for its adverse effects, particularly in relation to causing leukoplakia, erythroplakia, submucosal fibrosis, and oral cavity, esophageal, hypo-pharyngeal and head and neck cancers, with relative risk in some studies reported as high as 10 (IARC, 2007). Unfortunately, misperceptions are widely prevalent regarding OT use as health remedy and of its soothing effects (Nichter and Van Sickle, 2004; Ali, Khuwaja et al., 2009).

Hence, the need to estimate the prevalence and predictors of OT use cannot be overstated. This is particularly important for the younger age groups, where intervention strategies need to be targeted to decrease its consumption. Hence, this study was designed to estimate the proportion of OT users, to determine significant predictors of its use and to assess the knowledge, attitude and practices of the users amongst young adults visiting Family Practice clinics in Karachi, Pakistan.

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Table 1. Demographic and Health Perception Related Characteristics and Univariate Analysis of OT Users Among Study Participants

Characteristic	Users	Non-users	Odds ratio (95% CI)	P-value
Mean age (SD)	23 (5.0)	23 (4.7)	1.00 (0.95, 1.06)	0.967
Gender- Female	68 (59.1)	74 (63.8)	0.82 (0.48, 1.40)	0.467
Married	49 (43)	44 (37.9)	1.23 (0.73, 2.09)	0.435
Joint Family System	68 (59.1)	62 (53.4)	1.26 (0.75, 2.12)	0.384
Education				0.014
Illiterate	29 (25.2)	36 (31.0)	1	
Primary	12 (10.4)	11 (9.5)	1.35 (0.52, 3.51)	
Secondary	36 (31.3)	15 (12.9)	2.98 (1.37, 6.47)	
Higher Secondary	20 (17.4)	30 (25.9)	0.83 (0.39, 1.75)	
Graduate/Post Graduate	18 (15.7)	24 (20.7)	0.93 (0.43, 2.04)	
Family member using OT	75 (65.88)	52 (46.4)	2.22 (1.30, 3.80)	0.004
OT gives medical relief to body	20 (32.8)	7 (12.1)	3.55 (1.37, 9.23)	0.009
OT use injurious to health	76 (66.1)	72 (62.1)	1.19 (0.70, 2.04)	0.525

Materials and Methods

A cross sectional study was conducted in Family Practice clinics associated with a large private sector teaching hospital in Karachi, the largest city and socioeconomic hub of Pakistan with a population of almost 16 million. Family Practice clinics serve as the first point of contact between the patient and the health care provider. Five clinics were included from total of 10 through balloting. Every 10th adult patient (age 15 to 30 years) was approached and interviewed by medical students on the format of a pretested, pre-coded, structured questionnaire till the required sample size (231) achieved. However, women who came for antenatal checkups were not approached for the interview. Even though, no harm was expected to occur to any of the study participant, the study protocol and questionnaire was reviewed and approved by the Research Committee of the department of Family Medicine, Aga Khan University, Karachi, Pakistan.

The questionnaire consisted of basic demographic information, including age, gender and education status. Participants were then interviewed about their use of different form of OT (*pan* with tobacco, *guthka*, or *naswar*.) Those who were reported as users were further interviewed regarding their attitude and practices towards OT use. All the participants were also interviewed about their perception about harmful effects obtained by the use of OT, with an open ended question, prompting the users to identify disease conditions, which according to them, would be caused by OT use. Perceptions regarding any beneficial effects of OT use were also enquired. On an average, each interview took almost 15 minutes with an average of 10 interviews being carried out per day.

The data was double entered using Epi-Info 6 software (World Health Organization and Centre of Disease Control, Stone Mountain, GA, USA) and validated to minimize data entry errors. Data was analyzed through Statistical Package for Social Sciences (SPSS) Version 17 (SPSS Inc., Chicago, IL.) Basic analysis of data was done using frequencies and percentages. Univariate analysis using simple logistic regression was then carried out for OT use with different predictor variables. Variables showing significant associations were then entered into a multivariable analysis using multiple logistic regression,

to construct a model which best predicted OT use in our study population. The final results are described in adjusted odds ratios (AOR) and with their 95% confidence intervals (95% CI).

Results

About half of the respondents (49.8%; 95% CI = 43.3-56.2) had used OT in one form or the other. Mean age of the respondents was 23.05 years, with preponderance (61.5%) of the respondents being female. A little more than half of them (64.1%) had stated that use of OT is injurious to the body, however; some also (11.7%) believed that its use gives medical relief to the human body. Proportion of OT users in different groups along with their simple odds ratios and 95% CI are given in Table 1.

Variables included in multivariable analysis were education level, OT use by family member and perception that OT use gives medical relief to the body. The variable of perception that OT use gives medical relief to the body was excluded to generate a viable final model (Table 2). This model was able to predict 63.3 % of the variability observed. Accordingly, the odds of OT users among participants having secondary level education was significantly higher (AOR = 3.61; 95% CI = 1.60-8.10). Reporting of family member using OT was independently associated with OT use by study participants (AOR = 2.27; 95% CI = 1.29-4.01).

Assessment of knowledge of the study participants revealed that 84.5% of those considering OT use injurious to health could correctly identify a disease condition associated with its use while 25.7 % could not correctly identify such a disease condition. Of the users, 37.4 % reported that friends inspired them to take up OT use.

Table 2. Multivariable Analysis for the Predictors of OT Users Among Study Participants

Characteristic	Adjusted OR	95 % CI	P-value
Education			.024
Illiterate	1	-	
Primary	1.31	0.49, 3.52	
Secondary	3.61	1.60, 8.10	
Higher Secondary	1.13	0.52, 2.48	
Graduate/ Post Graduate	1.17	0.52, 2.65	
Family member using OT	2.27	1.29, 4.01	.005

Table 3. Knowledge and Attitude of Study Participants Regarding OT

Characteristic	Number (%)
Proportion of those believing OT use as injurious to health correctly identifying disease condition associated with OT use	125 (84.5)
Proportion of those believing OT use as injurious to health incorrectly identifying disease condition associated with OT use	38 (25.7)
Proportion of OT users inspired by friends	34 (37.4)
Proportion of users associating use with physical/mental comfort	41 (53.2)
Proportion of users associating use with social status	15 (26.8)
Proportion of users planning to quit	33 (33.7)
Proportion of users who have tried but failed to quit	30 (31.6)
Proportion of users reporting use for > 5years	69 (60.0)

Over half of the users (53.2 %) reported getting physical/mental comfort from the use of OT, while only 26.8 % of users associated OT use with social status. A third (33.7 %) had plans to quit the habit with 31.6 % reporting prior failure of a tries to quit the habit. About 60% of users had used OT for more than 5 years (Table 3).

Discussion

Smokeless tobacco use is part of the socio-cultural milieu of the world particularly in South and Southeast Asia (World Health Organization, 2006). Its various forms and products are uniformly approved of, and even favored in most strata of the society, with almost no legal or social bar to their use (Gupta and Ray, 2003). Hence, the fact that about half of the respondents report using OT should come as no surprise, even though the result is higher than previously reported results from similar populations (Imam, Nawaz et al., 2007; Rozi and Akhtar, 2007). These may be explained by the relative differences in population characters (school and college students, respectively) and study designs of those researches from this study; however, this higher prevalence, doubtless, merits interventions.

Education Level is a significant predictor of OT use in our study. While education level has previously been seen to be associated with OT use, with those having no or low education more predisposed to OT use, as opposed those with higher education level (Daniel et al., 2008). Interestingly, in this study, those who had completed secondary level education had a higher predisposition to OT use. This agrees with previous findings from a study in Nepal, which showed that most people started tobacco use at a mean age of 16 years (Sreeramareddy et al., 2008). This finding was also replicated in another study on the Pakistani population assessing smoking patterns, which identified high school education as a risk factor for smoking (Khuwaja and Kadir, 2004), because it is known that OT use serves as a gateway to smoking (Haddock, Weg et al., 2001). We believe that this may be related to the ease of availability and accessibility of these products to this age group.

Use of OT by a family member is another significant

predictor of use in this study, consistent with a number of previous studies. In one conducted by Goebel in West Virginia, two important factors mentioned which could lead the youth to initiate or continue OT use include firstly having a family member who uses OT, even if the family member did not live in the user's home, secondly, if the family grows tobacco on their lands (Goebel et al., 2000). However, these results are also substantiated by literature from our part of the world, both for smoking and OT use (Khuwaja and Kadir, 2004; Khawaja et al., 2006; Sreeramareddy et al., 2008). This signifies the role of the family itself in order to curb the number of family members who use OT which in turn would prevent making future OT users. Since parents set the norms in the family and are usually seen as icons, hence elders in the family should understand that such behaviors could risk not just their lives but the lives of the future generations.

Another risk factor reported for South Asian populations' use of OT is the level of misconception in the minds of the people, who believe in myths created about the medicinal properties of paan, containing tobacco as one of its ingredients (Gupta and Ray, 2003); hence, they remain oblivious of serious harmful effects. Studies conducted in Pakistan and UK to determine the perception of individuals regarding OT as a medicinal agent reveal prevalent perception that using OT can help relieve headache, stomach ache, bloating, constipation and strengthen gums, 'give a feeling of well-being', 'aid in digestion of food', and 'give fresh breath'. Moreover, OT is also thought to provide mental relaxation and reduce frustration, anger and boredom (Nichter and Van Sickle, 2004; Oakley et al., 2005; Ali et al., 2009). However, using this in our multivariable regression analysis, significantly affected the association of the other two variables.

Knowledge about the injurious effects of OT use remains just as important, and has been reported in a previous Pakistani study to be generally poor in that study population (Khawaja et al., 2006). Similarly, in our study, about one-third of individuals did not consider OT use as being important to health. Although a majority of the users could correctly identify a disease condition caused by OT use, while anemia, gall stones or kidney stones are also reported along with the diseases caused by OT use. These results are parallel to those of a qualitative research from India, in which study participants interviewed were unable to identify specific health hazards of OT use (Sorensen et al., 2005).

In our study, almost a third of the users said that they were inspired from their friends. This mirrors findings of previous studies, according to one of which, users had 11 times the odds of having at least one best friend who used OT compared to non-users (Goebel, Crespo et al., 2000). Similar results were also reported from India (Singh, Sinha et al., 2005). These support our results that peers remain an important factor for OT use amongst youth. Today's youth remains excessively cautious of its image among friends and people around them. Self-prestige and the macho figure have taken their effect on the youngsters, as everyone wishes to be as cool and suave like the models in many advertisements or movies using OT. The youth does agree to be using OT to reach out to the people in

their social circles as individuals with cool self image (Goebel et al., 2000). This is mostly portrayed by media, which does have a role in initiation in the lives of OT users in the young (Singh et al., 2005; Sreeramareddy et al., 2008). It is well-reported that prolonged exposure of tobacco increases the risk of its hazards. In our study, the majority of OT users taking tobacco for more than five years which also reflect that they have started this habit even at more younger ages.

On an encouraging note, a third of the users plan to quit, which still forming a small group, should, nevertheless, be helped to find ways and means to give up this habit. Most of these had tried to quit but failed to do so on their own. This is supported by findings from a previous study in our region (Sreeramareddy et al., 2008); and remains a noteworthy finding in the sense that even with the resolve; people do need all the help they can get from the health care sector to give up tobacco use. This perhaps may be explained by the fact that OT users exhibit dependence with withdrawal effects (Colilla, 2010). This, coupled with the environmental factors encouraging OT use discussed above, clearly emphasizes the need of the active intervention by health care and allied professionals.

Limitations of this study include it being conducted in family practice clinics of private sector in an urban city, which limits its generalization to the national population. Secondly, smoking status determination of the respondents would have helped better understand the relation of OT use and smoking in this population. However, the study clearly demonstrated the very high burden of OT use amongst adults aged 15-30 years, who visited family practice clinics in Karachi. Education level and family member use of OT were demonstrated as significant predictors of OT use by this population, with users also reporting a perception about medical relief to the boy obtained through its use. Most of the people demonstrated knowledge about disease conditions associated with its use. A third of the users were inspired by friend, while a third also planned to quit this habit.

The results of this study thus call for comprehensive and integrated interventions and preventive strategies. Knowledge about the health hazards of tobacco should be increased in the general population by appropriate awareness programs. In this regards, Family Physicians being a first contact health care providers and media, as it reaches even those people who do not have access to education can play an important role. Intervention programs should also be formed, which especially target those individuals who want to quit OT use. Finally, laws currently in place to check the sale of tobacco products to underage users should be enforced. These should particularly be employed to environment outside schools and educational institutions, to ensure that children do not have easy access to these products. In this way, we can go one step forward to prevent a large number of cancers.

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