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NASWAR;
WHAT DO (A FORM OF SMOKELESS TOBACCO) USERS KNOW ABOUT ITS HARMFUL EFFECTS?

Dr. Sarah Ali[1], Dr. Muhammad Ali Rahman Khan Wazir[2], Dr. Samie Qadir[3]

1. BDS, MPH
Assistant Professor,
Community Dentistry
Margalla Institute of Health Sciences.
2. BDS, DPH
Lecturer, Community Dentistry
Margalla Institute of Health Sciences, Rawalpindi.
3. Associate Professor,
Dental Materials
Margalla Institute of Health Sciences.

Correspondence Address:
Dr. Sarah Ali
BDS, MPH
Assistant Professor,
Community Dentistry Margalla Institute of Health Sciences.
sarahalyz@gmail.com

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ABSTRACT… Objectives: To explore what naswar (smokeless tobacco) users know about the effects of naswar on their oral and general health. **Methods:** This cross sectional survey was undertaken in the city of Peshawar, Pakistan. Sample size of 96 participants based on 95% C.I with interval width of 10% was used for this study. Only male naswar users were included. Keeping in mind the resources and time constraints the participants were purposely sampled. All the participants were consented before being included in the sample. Survey tool which included open, closed and semi structured questions was self-administered. **Findings:** 42.7% (95% CI: 32.8-52.6%) of the respondents considered naswar, either harmless or resulting in minor side effects. There was lack of awareness of the existence of oral and lung cancer among a significant proportion (41% with 95% CI: 31.8-58.5%) of participants. In response to a question about harmful effects of naswar use, vast majority of the respondents mentioned one or the other form of oral (non serious) or tooth problems. Only 10.41% (95%CI: 4.3-16.5%) mentioned its association with cancer and none mentioned about the risk of cardiovascular disease. **Conclusion:** Our survey appears to indicate that level of awareness of naswar users in Peshawar is poor. We recommend to the government of NWFP to make an effort to educate the people about the harmful effects of naswar use.

Key words: Naswar (Smokeless tobacco)

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INTRODUCTION

Smokeless tobacco is a form of tobacco, which is placed in either oral or nasal cavity without burning, and the nicotine and other ingredients are absorbed through mucosa.[1] Smokeless tobacco is used in its different forms in many countries. It is often chewed in the form of betel quid or placed directly in oral cavity. In some European countries like Sweden, use of smokeless tobacco in form of snuff is becoming increasingly popular.[2] Different types of smokeless tobacco with their ingredients and areas of use are shown in Table-I.

Smokeless tobacco is addictive as well as harmful to health as mentioned in a 1986 report by US Surgeon General.[3] A large case-control study, INTERHEART, carried out in 52 countries established that the use of smokeless tobacco in oral and other forms is associated with high risk of cardiovascular diseases.[4] Chewing tobacco in this study was found to be independently associated with increased risk of myocardial infarction with odds ratio of 2·23 (95%CI 1·41—3·52). In addition to other tobacco related health problems, it causes oral diseases such as periodontitis, gingivitis, halitosis and reduction of taste.[5] More seriously, it causes oral cancer due to its direct contact with oral mucosa. Tobacco contains carcinogenic compounds like N-nitrosonornicotine (N-NNN) which plays an important role in transforming normal mucosal epithelium cells into squamous cell carcinoma.[6] Several studies have termed smokeless tobacco as a major risk factor for oral cancer.[7,8] International Agency for Research on Oral Cancer has declared smokeless tobacco as a definite risk factor.[6] Given that Oropharyngeal cancer is the 11th most common cancer in the world, with the incidence and mortality rates higher in men than women,[9] smokeless tobacco possesses a major threat to public health.

Naswar, a form of smokeless tobacco, consists

of tobacco, lime, indigo, cardamom, oil and menthol. It is used most commonly in Central Asia, Iran, Afghanistan and Pakistan.[10] Pakistan, a prime target of tobacco industry, has tobacco use in common in its various forms in different parts of the country. The use of naswar is widespread in North West Frontier Province (NWFP), Balochistan and northern parts of Punjab provinces. In the city of Peshawar, capital of NWFP, and its peripheries, more than 60% of the tobacco consumed is in the form of naswar.[11] Secondary, oral cancer is emerging as a public health threat and it is the 3rd commonest malignant tumour in males in NWFP.[12] Media campaigns against tobacco are just beginning to surface in Pakistan due to the efforts of national tobacco control programme. However, the anti tobacco messages in these campaigns mainly target cigarette smokers. Specific messages against smokeless tobacco such as naswar are often absent in such campaigns. Lack of awareness of risk factors for oral cancer can lead to late presentation of the disease and eventually to poor survival of patients.[13] There has been no study, to our knowledge, to assess the level of awareness about harmful effects of naswar amongst its users in Pakistan.

We carried out a survey to fill this gap and identify the need, or otherwise, for raising awareness about the harmful effects of naswar in the NWFP of Pakistan.

MATERIAL AND METHODS

We carried out this cross sectional survey as part of a Master's dissertation, in Peshawar city in NWFP. We included all males using naswar as the only form of tobacco irrespective of their profession or education level. We estimated a sample size of 96 participants based on 95% C.I with interval width of 10% for this study. The participants were purposely sampled given the time and resource constraints of this student project. We approached adult males in several public places in Peshawar city for this purpose. We explained the purpose of the survey to all participants approached and asked if they would be willing to take part. Once they consented, we clarified any queries, assured them about the confidentiality of the data and gave them the option to discontinue participation at any point during the survey, if they wished. Survey tool consisted of a self administered questionnaire which included open, closed and semi-structured questions. During designing the questionnaires, simple questions which would be easy to answer were kept at the start and leading questions were avoided. We examined the instrument for its construct and face validity. The questionnaire was administered by the Master's student who belongs to NWFP and was familiar with the local language and culture. To avoid misinterpretation in open ended questions, answers from the respondents were noted down verbatim. Before using the questionnaire on the participants it was piloted on small group of people which were not included in the actual sample. This enabled us to identify some problems with the questionnaire which were then modified before using it on the participants. We used descriptive analysis and simple cross tabulations using the SPSS 16.0 software.

RESULTS

We concluded the survey, once 96 participants fulfilling our inclusion criteria provided us with complete responses to the questionnaire; their mean age was 35 years. 66% of the participants were either not educated or had primary education.

42.7% (95% CI: 32.8-52.6%) of the respondents considered naswar, either harmless or resulting in minor side effects (Figure-1). Only 10.41% (95% CI: 4.3-16.5%) considered that naswar can cause fatal diseases. When enquired further about their knowledge of the harmful effects of naswar use, vast majority of the respondents mentioned one or the other form of oral (non serious) or tooth problems (Figure-2). Only 10.41% (95%CI: 4.3-16.5%) mentioned its association with cancer and none mentioned about the risk of cardiovascular disease. A few of the respondents even termed it harmless and one of them termed it beneficial. He said ''It kills the germs inside our mouth, and stomach. Brushing my teeth after keeping naswar in my mouth gives me fresh breath.'' One

of the striking findings of this survey was lack of awareness of the existence of oral and lung cancer among a significant proportion (41% with 95% CI: 31.8-58.5%) of participants. It appears that naswar users were more aware of blood cancer as compared to oral cancer (Figure-3).

Figure-4 and Figure-5 shows that only a minority of naswar users were aware of the association between naswar use and oral cancer. Most of the respondents who had heard about oral cancer believed that oral cancer can be due to several factors. It should be noted that 10.41% (95% CI: 4.3-16.5%) of the respondents thought that oral cancer is caused without any reason. One of them said ''Cancer is caused without any reason and it is the will of God''. Figure-6 shows a cross tabulation between starting age of naswar and the reason for starting it. 38.5% (95% CI: 28.8-48.3%) of the respondents put influence of family and friends as the factor for starting this habit.

Habit	Ingredients	Population
Pan/Betel Quid	Areca nut, betel leaf, slaked lime, catechu, condiments with/without tobacco	Indian subcontinent, Southeast Asia, Papua New Guinea, part of South America
Khaini	Tobacco and lime	Bihar(India)
Mishri	Burned tobacco	Maharashtra(India)
Zarda	Boiled tobacco	India and Arab countries
Gadakhu	Tobacco and molasses	Central India
Mawa	Tobacco, lime and areca	Bhavnagar, India
Nass	Tobacco, ash, cotton or sesame oil	Central Asia, Iran, Afghanistan, Pakistan
Naswar	Tobacco, lime, indigo, cardamom , oil, menthol etc	Central Asia, Iran, Afghanistan, Pakistan
Shammah	Tobacco, ash and lime	Saudi Arabia
Toombak	Tobacco and sodium bicarbonate	Sudan
Snuff/Snuss	Tobacco, water, salt	Sweden
Saffa	Tobacco and sodium sesqui carbonate.	Sudan

Table-I. Common forms of smokeless tobacco
Source: Modified[10]

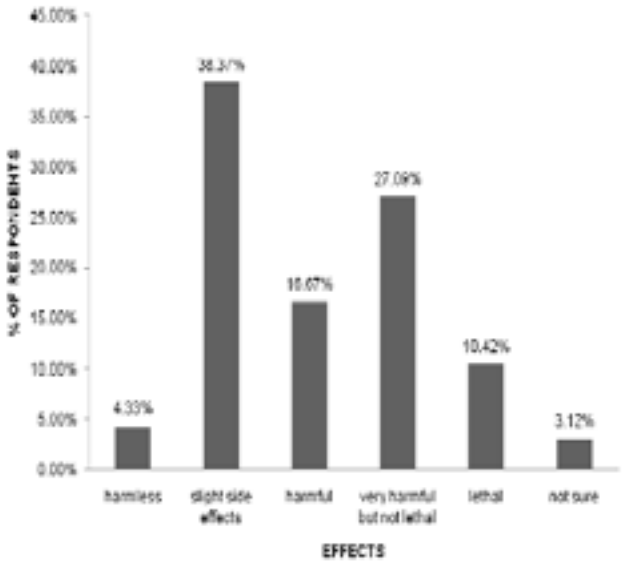

Figure-1. Perceived effects of naswar on health

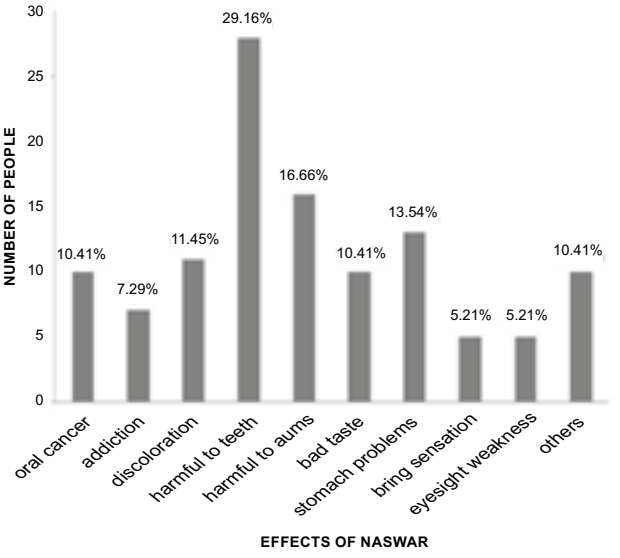

Figure-2. Perceived harmful effects of naswar

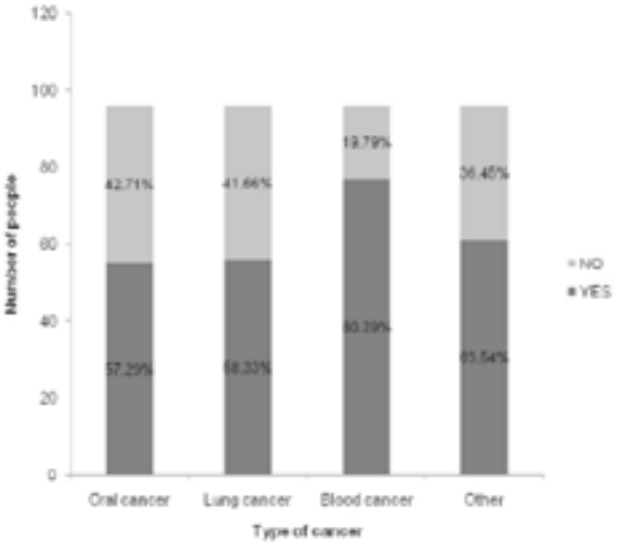

Figure-3. Respondents' awareness of different types of cancer

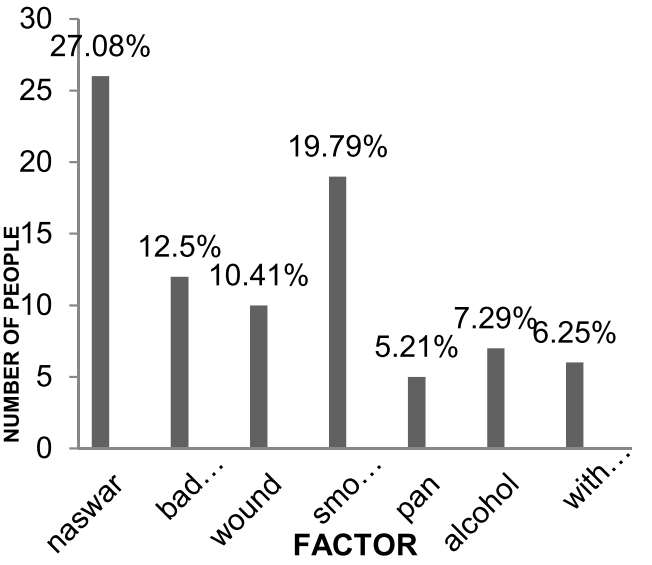

Figure-4. Respondents' Views on How People Get Oral Cancer

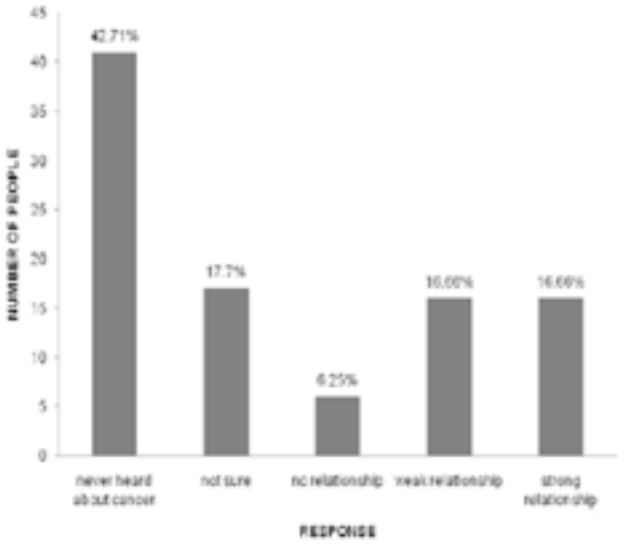

Figure-5. Respondents' views about the relationship of naswar and oral cancer

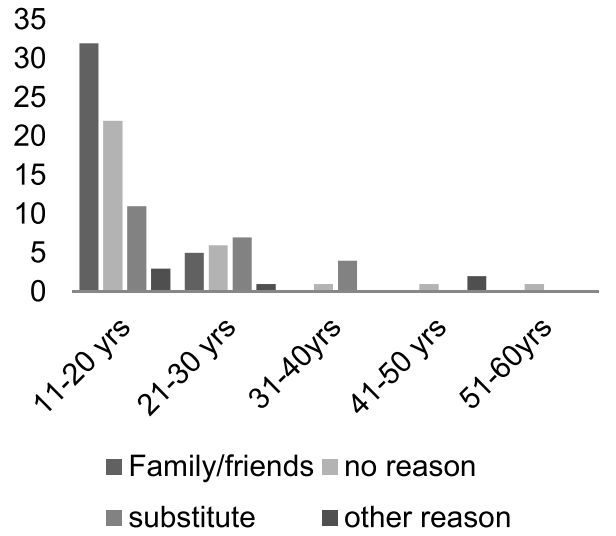

Figure-6. Relationship between reasons for starting naswar and starting age

DISCUSSION

There were a few limitations with this study, which for one reason or another could not be avoided. One of them was purposely selection of sample size. Random sampling technique is more representable of the population but unfortunately under the circumstances it was not possible. Many people after admitting to naswar use were reluctant to take part in the survey. Some of them refused because they were hiding their naswar habit from their family members and were concerned about confidentiality breach. This was overcome by considering naswar users whom I could access through a source. Sources included friends, neighbours and relatives. Involvement of these sources meant that the sample likely belongs to certain social class. Another limitation can be that the response was dependent on the way questions were asked. There were differences in their responses when question about oral cancer was inquired after asking about naswar use as many could guess that there may

be an association between the two. Due to time and resource constraints the small sample size did not allow us to carry further sub analysis which could only be possible on a large sample size.

Comparing our results to a study in Indian city of Nagpur which was aimed to examine the behaviour, attitude and beliefs related to smokeless tobacco found that 82.8% of tobacco users believed it was harmful.[14] Among these, 63.1% respondents believed that smokeless tobacco causes oral cancer. This appears to indicate that naswar users in Peshawar as compared to Nagpur were less aware about harmful effects of naswar including oral cancer. Similarly, the level of awareness of the respondents about oral cancer in our study in Peshawar is low as compared to a study in London.[15] In the study in London, more than two-third of the respondents were aware about oral cancer, whereas in our study a little more than half of the respondents had heard about oral cancer. Differences in culture and background of these study areas may be a contributing factor for the results. From the results presented in Figure 6 we can assume that influence of starting naswar is more at an early age. This has also been supported by a cross sectional study in Karachi, Pakistan which was conducted to find the knowledge and practice regarding tobacco consumption. The results showed that 89% of the sample size started using tobacco before the age of 20 and the most common reason for starting tobacco consumption was social pressure.[16]

Generally anti tobacco campaigns target cigarette smokers and smokeless tobacco users are not targeted. There has been no awareness campaign about harmful effects of naswar in this region. The government of NWFP should make an effort to educate the people about the harmful effects of naswar use. It is our recommendation to organize awareness campaigns targeting teenage population. Steps should be taken by the government to reduce ease access to naswar by the adolescents. There should also be a policy to impose tax on naswar because its cheap price has also been regarded as the reason for its use.

CONCLUSION

Our survey appears to indicate that the level of awareness of naswar users was poor in Peshawar. Steps should be taken to deal with this issue considering the high level of naswar use and the emerging threat of oral cancer in the region. It is our recommendations to the government of NWFP that they should without further delaying invest in health promotion and health education so that naswar users of the region become aware about the harmful effects of naswar.

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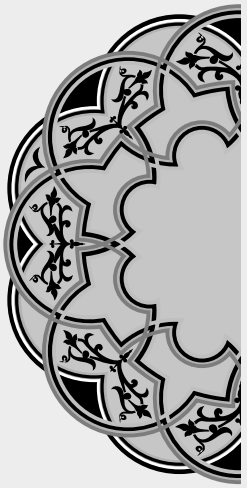

"The only disability in life is a bad attitude."

Scott Hamilton

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Dr. Sarah Ali	Data collection, References, Formating	
2	Dr. M. Ali Rahman Khan Wazir	Data collection, Data analysis	
3	Dr. Samie Qadir	Literature review	