

Full Length Research Paper

# Oral cancer awareness and Prevalence of Betel nuts, pan and ghutka in school children of rural areas of Sindh, Pakistan

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This study aimed to investigate the prevalence of betel nuts, pan and ghutka in the school children of rural areas and suburbs of Sindh, Pakistan and whether they have awareness for oral cancer and its risk factors. Spreading awareness in school going children can potentially reduce the incidence of oral cancer in our society. Through the use of a questionnaire we assessed 462 school children in three districts of Sindh: Thatta, Jamshoro and Hyderabad, on their consumption of betel nuts, pan and ghutka; oral behaviors; their knowledge of oral cancer and their understanding of common risk factors for oral cancer. Out of 462 students questioned, 66% of them answered positive for eating at least one of the risk factors studied in this study. However knowledge of the side effects of these substances was poor and even erroneous and only 44% had awareness in general. Regarding brushing teeth daily, 92% of students brushed at least once daily. In response to being aware of the word Oral cancer, only 34% answered that they have heard about Oral cancer. 29% of all the students could mention betel nuts, pan or ghutka as the risk factor for oral cancer. Awareness of the risk factors and clinical features of oral cancer provides an opportunity to reduce the incidence of new addicts among the young population, application of that knowledge seems, however, to be poor. This highlights a need for improved education of school going children and introduction of special teaching and interactive programs to communicate the message in a more persuasive manner.

**Keywords:** Oral cancer, mouth ulcers, tooth brushing, awareness, betel nuts, school children.

## INTRODUCTION

Oral cancer is one of the key public health issues worldwide (Warnakulasuriya, 2009). It is the Eighth most common cancer in the world (Petersen, 2005). Although with a worldwide prevalence, the South Asia takes the brunt of the disease with oral cancer among the top three cancers in the region (Petersen, 2005) and among all the cases of Oral cancer worldwide, 58% of them occur in South and south East Asia. Situation in Pakistan, however, is far more mortifying. Oral cancer is the second most common cancer in Pakistan with an estimated 101.6 thousand deaths occurring in Pakistan annually (Ferlay, Shin et al., 2010). Even what's more appalling is the alarming rate at which the incidence of Oral cancer is

Rising. According to the estimates of IARC-WHO, rate of oral cancer is expected to increase from 10 million new Cases globally in 2000, to 15 million in 2020.

Squamous cell carcinoma (SCC) accounts for more than 90% of all the oral cancers (Moore, Johnson et al. 2000). The principal risk factors for oral cancer are Tobacco chewing (Castellsagué, Quintana et al. 2004), Areca nuts, pan masala, poor oral hygiene and alcohol (Bagnardi, Blangiardo et al., 2001; Balaram, Sridhar et al., 2002). Pakistan being a developing country faces a large poor community with lack of adequate nutrition thus deficiency of fruits and vegetables are additional contributory factors for the development of oral cancer (Pavia, Pileggi et al., 2006). Despite recent advancement in diagnosis and management of Oral cancer, and improvement in scientific knowledge about its risk factors, survival rate remains low (50%) (B.W. Stewart

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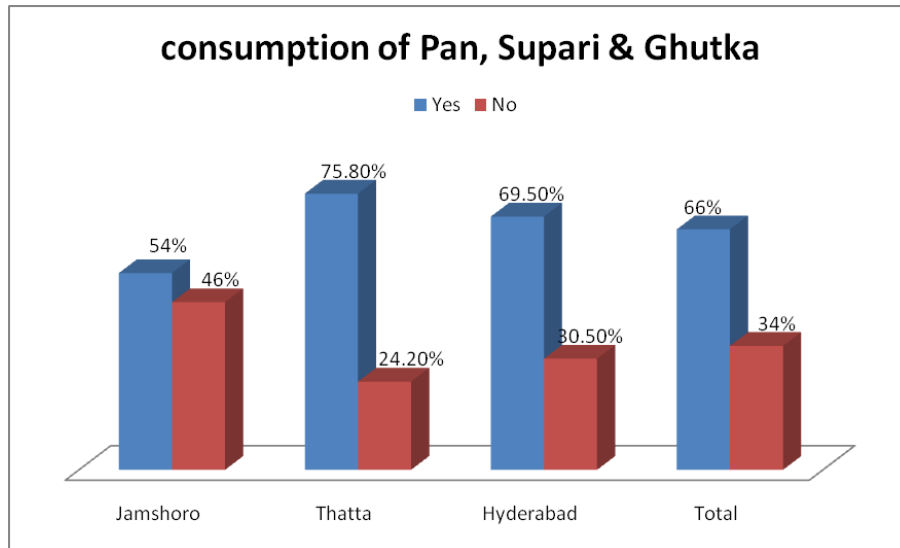


Figure 1.

2003). Diagnosing it at an earlier stage has been shown to improve morbidity and mortality associated with oral Cancer (Johnson and Warnakulasuriya, 1993; Speight and Morgan, 1993).

The common clinical features of oral cancer are Mouth ulcers, persistent oral swelling, difficulty in chewing, trismus, swollen lymph nodes and unexplained tooth mobility. There may be a precancerous lesion in the mouth like Oral sub mucous fibrosis, Leukoplakia, erythroplakia and oral lichen planus among others. Lack of public awareness is considered to be a major cause of delay in the timely consultation and thus the treatment of oral cancer (Hollows, MacAndrew et al., 2000; McLeod, Saeed et al., 2005). It is also a matter of concern that although the majority of patients with oral cancer are elderly, it is being increasingly diagnosed in a much younger population (Hindle and Nally, 1991).

Despite oral cancer being a major public health problem of Pakistan, there is scarcity of data available on incidence and prevalence of oral cancer among different regions of Pakistan. This study is therefore aimed at finding the prevalence of Betel nuts and pan, and awareness of oral cancer in school going children in rural areas and suburbs of Pakistan.

## METHODOLOGY

With the help of a questionnaire, a cross-sectional study was conducted in the school children from areas of Thatta, Jamshoro and suburbs of Hyderabad. The questionnaire was delivered during the routine lectures to students of class 6<sup>th</sup> till 10<sup>th</sup>. All the students present in the class on that day were selected and they were asked five questions investigating: habit of eating pan and betel nuts; knowledge of the side effects of these substances; their oral behaviors pertaining to brushing teeth;

awareness of oral cancer; and awareness of the risk factors for oral cancer. 46% of all participants were females and 54% were males. 496 students returned their forms and among them, 34 forms were deemed incomplete and therefore excluded from study to prevent potential bias. Hence a response rate of 93% was achieved. The study was undertaken in the month of March, 2013. All the participants were consented and made aware that the questionnaire is for research purposes. The data was analyzed by using Microsoft Excel 2013 version.

## RESULTS AND DISCUSSION

In results we focused on the consumption of betel nuts, pan and ghutka in school children and, out of 462 students questioned, 66% of them answered positive for eating at least one of the risk factors studied in this study; 54% students taking such substances in Jamshoro, 76% in Thatta and 69.5% in Hyderabad. Among those positive answers, 100% of students ate Betel nuts, 53% ate pan and 19% ate ghutka as well (figure 1 and 2). However knowledge of the side effects of these substances was poor and even erroneous with overall awareness among 462 students being mere 44% and individually 40%, 25% and 72% in Jamshoro, Thatta and Hyderabad respectively. Most commonly reported side effects were dental caries 38%, mouth ulcer 23%, teeth staining 21%, and sore throat 16%, (figure 3 and 4). Regarding brushing teeth daily, 92% of students brushed at least once daily, with Thatta having relatively lower percentage of tooth brushing in comparison with Hyderabad and Jamshoro (figure 5).

In response to being aware of the word Oral cancer, only 34% answered that they have heard the word Oral cancer (in Sindhi language) clearly indicating Lack of aware-

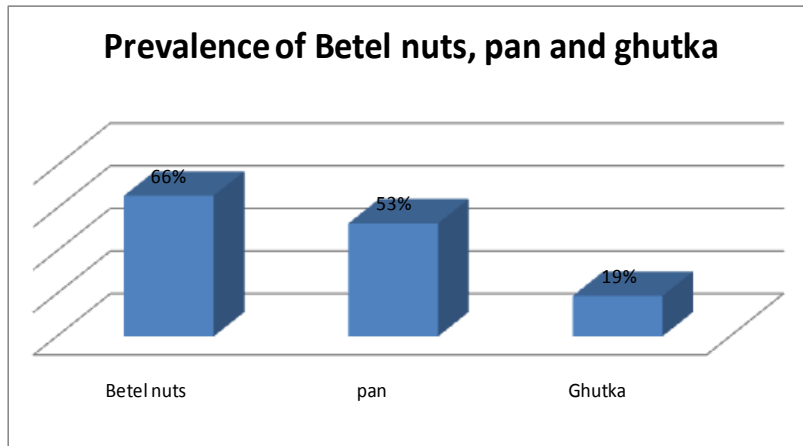


Figure 2

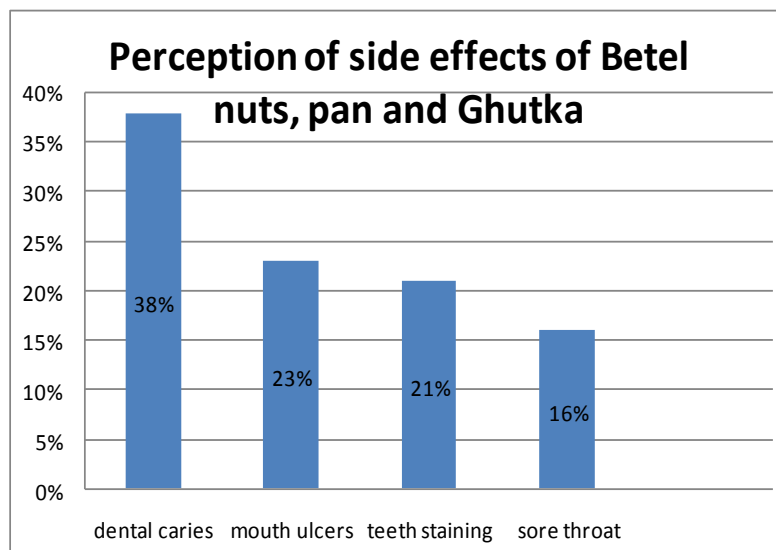


Figure 3

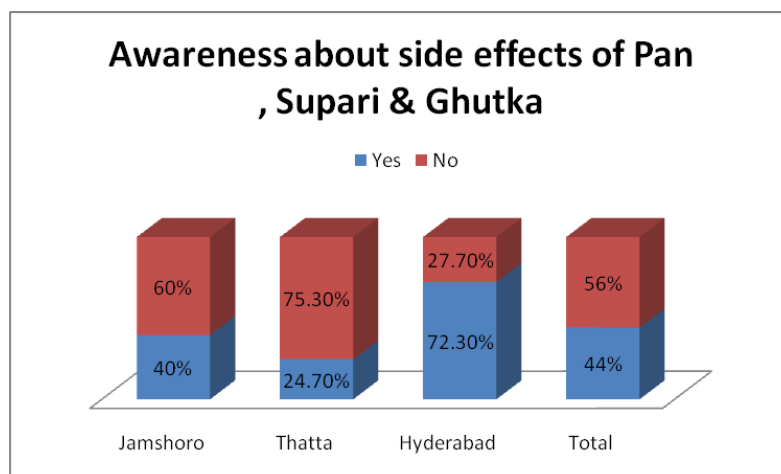


Figure 4.

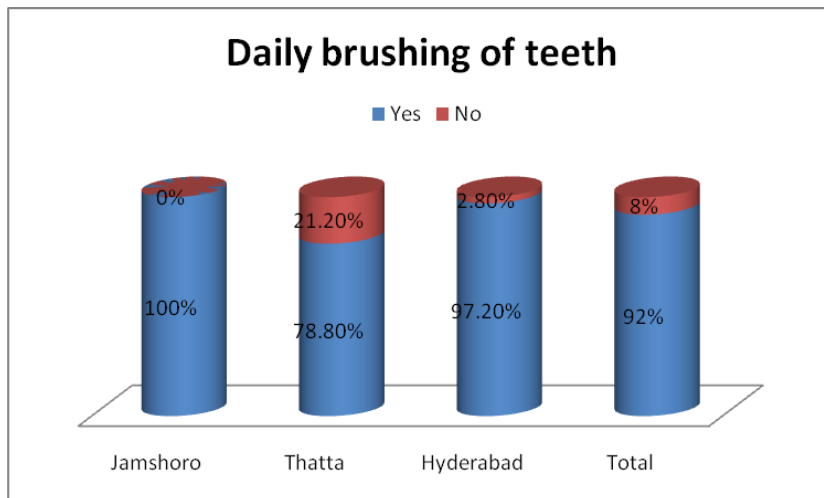


Figure 5

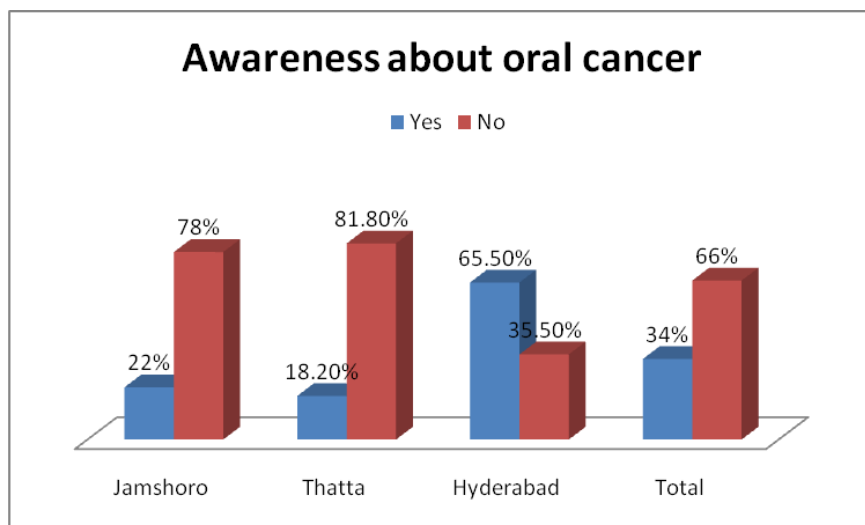


Figure 6

Nessof this dreadful disease of our society. (Figure 6). As far as awareness of risk factors of oral cancer were concerned, 29% of all the students could mention betel nuts, pan or ghutka as the risk factor for oral cancer. Individually Jamshoro showed awareness of around 24%, Thatta 21% and Hyderabad 46% (figure 7).

Awareness on Oral cancer is a very important health issue of Subcontinent but unfortunately very little work if at all is being done at present to mitigate this social evil.

Study revealed that 66% of school children ate betel nuts. This finding is in support with the earlier findings that Betel nut is the fourth most commonly used addictive substance after tobacco, alcohol and caffeine(Sullivan and Hagen, 2002) with approximately 600 million consumers worldwide(Pankaj, 2010).And in Subcontinent it is second most consumed carcinogen after

tobacco(Nitin J and M, 2010).This is not only because of its addictive potential but also due to its wide availability and very cheap price, so even the poorpopulation can also afford it. One way of reducing its consumption could be by implementing a higher tax on its sale.

Attitude towards brushing teeth was positive as 89% of students brushed teeth at least once daily. This is similar to previous studies conducted on school children in Mexico and Europe (Kuusela, Honkala et al., 1997; Casanova-Rosado, Vallejos-Sanchez et al., 2013). This has been possible due to diligent and regular school programs conducted by toothpaste manufacturing companies and other health regulatory authorities.

In this study, 24% of students were aware of the word oral cancer, this is in agreement with the M a Lennon's study done in Great Britain highlighting the improvement

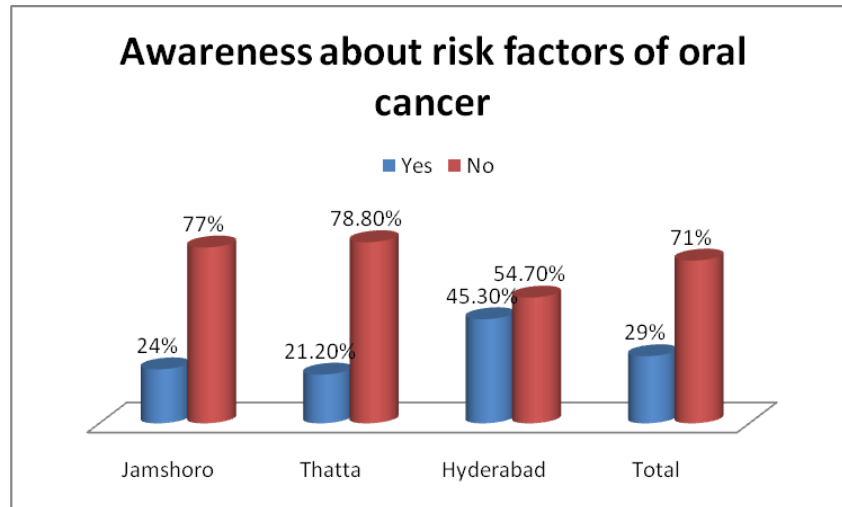


Figure 7

In oral cancer awareness (Warnakulasuriya, Harris et al., 1999). While the studies of Warnakulasuriya and Rogers showed that very less number of people are aware of the word oral cancer. (Warnakulasuriya, Harris et al., 1999; Rogers, Hunter et al., 2011). Regarding the risk factors for oral cancer, only 9% of students considered eating betel nuts and pan as a risk factor. While no other risk factor was mentioned by any of the student.

A significant finding in this study was the misconception among children regarding the side effects of betel nut and pan chewing and a lack of awareness of the actual side effects of those substances. Dental caries was the most commonly answered side effect while scientific evidence regarding this is lacking. Even some studies have shown that betel nuts might have cariostatic properties. (Reena R, Nelson Anthikat, 2009; Ashok Lingappa and S, 2011). Mouth ulcer and sore throat may be caused by betel nuts, however the scientific studies have shown that betel nuts can cause acute exacerbation of asthma (Taylor, al-Jarad et al., 1992), hypertension (Tseng, 2008) gingivitis, leukoplakia and staining of teeth and gums (Norton 1998). This discrepancy between the known side effects and the perceived effects by students may be attributed to the lack of understanding of teachers themselves.

## CONCLUSION

This study was first of its kind in Sindh, Pakistan. It has highlighted the appalling situation of high prevalence of Betel nuts, pan and ghutka accompanied by lack of awareness of the side effects of these substances. Moreover, although the awareness of Oral cancer seemed to be higher than other studies, it's still very low considering that majority of oral cancer patients reside in Subcontinent. This study aimed at school going students

because addiction to betel nuts, pan and ghutka; which are the major risk factors for developing oral cancer, is acquired in childhood therefore any strategy to combat this horrible disease needs to direct its attention towards the high prevalence of these noxious substances in young children. Following steps are recommended which may improve awareness and reduce the overall oral cancer burden in long term.

- Mass media campaign similar to anti-tobacco efforts to educate population regarding health hazards of betel nuts, pan and ghutka.
- Lectures delivered to school students by trained professionals and advice on good feeding practices.
- Initiation of National school nutritional program. This has already been shown to improve health of children and reduce their satiety, which will eventually lead to decreased consumption of such harmful substances.
- Imposing taxes on the production and sale will hike the prices and will help to reduce buying capacity of people.

Reducing the prevalence of betel nuts, pan and ghutka among children can potentially reduce the incidence of new cases in future therefore it's high time that steps are taken by authorities to target the young children and decrease the oral cancer burden from grassroots level.

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