ABSTRACT.

The objective of this study is to investigate the prevalence, risk factors and the level of public awareness of oral potentially malignant disorders (OPMD) in the Sabaragamuwa province of Sri Lanka.

In order to achieve this objective, this study was carried out in two phases. The first phase, a cross-sectional community based study interviewing 1029 subjects included on over sampling from the estate sector over 30 years of age, were randomly selected from 14 clusters from two areas of Medical Officer of Health (MOH) in the Sabaragamuwa province, over a one year period from November 2006. A multistage, stratified, clustered sampling technique was adopted for this study. The study protocol included an interviewer administered questionnaire to gather socio-demographic factors, information to assess the level of public awareness of oral cancer /OPMD and habits which include betel chewing, smoking, and alcohol consumption. The study protocol also included a three day food diary, to assess the protective effect of consumption of fruit and vegetable on OPMD. A visual oral soft tissue examination was carried out for identification of abnormalities, with reliability analysis.

The second phase was carried out to assess the strength of association between known risk factors and OPMD according to the case control fashion. The patients, identified with OPMD during the cross sectional study, were considered as 'cases' while the 'controls' were the subjects who were not having any abnormalities in the oral mucosa at the time of screening.

The chi-square test was used to test the difference in socio-demographic indicators with the level of public awareness and OPMD. A logistic regression model was applied to control possible confounding factors and to estimate the Odds Ratios (OR) for OPMD

One hundred and two Oral Potentially Malignant Disorders were detected among these 1029 subjects. When it was weighted for over sampling of the estate sector and gender, OPMD prevalence was estimated as 11.3% (95%CI:9.4-13.2). Among the OPMD, reported prevalence of leukoplakia was 8.9%(95%CI:6.3-9.7) and OSF 1.7% (95%CI:0.9-2.5).

Level of public awareness of oral cancer was 71% and it was 17% for OPMD. Mass media via TV/ radio (41%) and news papers (21.8%), plays a pivotal role in educating the public on oral cancer and OPMD in villages. However the main source of information in the estate sector was through their family members and friends (44.2%) ($p<0.001$). Seventy six percent of the subjects were not aware of the symptoms of oral cancer and OPMD. Forty six percent ($p<0.001$) were not aware that the practice of betel chewing is a risk for oral cancer/OPMD and for smoking 73.7% ($p=0.863$) and alcohol 86.6% ($p= 0.002$). Moreover, 73% of the "ever"(past and current) smokers, 91.4% of the "ever" alcohol drinkers and 53% of the betel chewers, were not aware that practicing these habits, is a risk factor for oral cancer and OPMD. Sixty four percent of the total subjects agreed that oral cancer is often fatal, but still 36.4% were not aware that early detection could save lives. As a percentage, 55% were aware of the value of early detection in controlling oral cancer and 23% were aware that the number of oral cancer patients in Sri Lanka was higher than those of lung cancer patients.

When assessing the risk factors for OPMD, it was shown that betel chewing and consumption of alcohol are significant risk factors for OPMD. However, smoking, BMI, consumption of chillie and thermal damage were not emerged as statistically significant risk factors for OPMD. The protective effects of consumption of fruits and vegetable, tea consumption were also not revealed as statistically significant factors for OPMD. Daily betel chewers were 10.6 fold (95%CI:3.6-31.0) risk of developing OPMD than non chewers. Betel chewing without tobacco was also found as a risk factor for OPMD with the 5.5 fold (95%CI:1.6-19.2) risk of occurrence of OPMD as compared to abstainers and it was 14.9 fold (95%CI:4.5-49.3) for betel chewing with tobacco. The frequency of betel chewing less than 3 quid per day ($p=0.06$) appears as a non-significant risk factor for the development of OPMD and more than 3 quid/day considered a significant risk factor. Marked increased risk of occurrence of OPMD was noticed when people chewed betel for more than three years.

Consumption of alcohol on a weekly basis, were associated with a 3.55 fold (95%CI:1.6-8.0) increased risk of OPMD. Specifically those who consumed alcohol over 11-20 years showed a 11.9 fold (95%CI:2.9-48.6)) increased risk of OPMD as compared to the teetotalers, but an increasing trend was not observed. Alcohol in this area is "Arrack" (a local drink brewed from coconut) was associated with 3.31 fold (95%CI:1.1-10.3) and "Kasippu" (another local drink brewed from coconut and sugar) drinking was associated

with 17.48 fold (95% CI:2.8-110.2)) of increased risk of occurrence of OPMD than teetotalers. Synergistic effect of betel chewing and alcohol consumption was apparent in this study. Compared to abstainers, the risk of OPMD for betel chewing was increased from 14.3(95%CI:4.3-47.3)) to 50.3(95%CI:14.8-170.6)) when they consumed alcohol. Similarly, compared to abstainers, risk of OPMD for alcohol drinking was increased from 28.7(95%CI:2.3-361.0) to 50.3 fold (95%CI:14.8-170.6)) when chewing betel.

The weighted prevalence of daily betel chewers in this study was 53.8% (95%CI: 50.7-56.8). A among them 15.7% (95%CI:13.5-17.9) do so without tobacco and 47.4%(95%CI:44.3-50.5) with tobacco. In villages, 70.2% of the males and 33% of the females chew betel daily, and in the estate sector, 82.8% among the males and 75.8% among females. It also shows that the overall betel chewing is higher in the estate sector (79.3%), as compared to villages (51.5%). In villages, 24.8% of the males consumed alcohol at least weekly. In the estate sector, it was 48.5% for males and 3% for females. The weighted prevalence of weekly consumption of alcohol was 13.4% (95%CI: 11.3-15.5) among the total population of Sabaragamuwa province. The weighted prevalence of consumption of Arrack was 14.1% (95%CI: 12.0-16.2) and it was 2.3% (95%CI: 1.4-3.2) for "Kassippu". There still is a high prevalence of consumption of "kassippu" in the estate sector (4%) as compared to the villages (2.1%), eventhough "Kassippu is now banned".

This study discloses high prevalence of OPMD and risk factors such as betel chewing, in this community. Therefore, there is a necessity to develop preventive strategies for the early detection and control of oral cancer. This study provides important information needed to prepare such strategies to combat oral cancer. The betel chewing without tobacco is also emerged as a highly significant risk factor for occurrence of OPMD and lack of knowledge on areca nut as a risk factor for OPMD, need to be addressed in future health education programmes aimed at preventing oral cancer. Legislation regarding the import and sale of areca nut should be introduced to prevent consumption of areca nut by the younger generation. It is also recommended that further studies are required to investigate the non-significant results observed in this study. Furthermore, as observed that, knowledge on OPMD is very poor among the rural and estate communities and the flow of information is different in each sector. Therefore different health education and promotion strategies are needed based on relevance.