THE AWARENESS AND KNOWLEDGE ON ORAL CANCER AND ITS RELATION TOWARDS SMOKING HABIT IN INDUSTRIAL TRAINING INSTITUTE, KEPALA BATAS

By

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The awareness and knowledge on oral cancer and its relation towards smoking habit in Industrial Training Institute, Kepala Batas

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LIST OF ABBREVIATION

- ASR: Age Standardized Rate
- CR: Crude Rate
- ILP: Institut Latihan Perindustrian
- IQR: Interquartile Range
- NHMS: National Health and Morbidity Survey
- RM: Malaysian Ringgit
- SD: Standard Deviation
- SPSS: Statistical Package for Social Science
- UK: United Kingdom
- USM: Universiti Sains Malaysia

ABSTRACT

Background: Oral cancer is a worldwide health issue with increasing incidence annually as shown by a number of studies. In Malaysia, the prevalence of smoking and tobacco consuming is considerably high which unfortunately linked to fetal illness. Lack of oral cancer awareness and knowledge among the general population is well documented. Early detection and mouth self-examination play significant role in reducing morbidity and mortality. Our approach was to determine the level of awareness and knowledge regarding oral cancer among students with non-medical background in Industrial Training Institute in Kepala Batas, Pulau Pinang.

Methodology: A cross sectional study by adopting questionnaires with 21 items were conducted among 275 students of Industrial Training Institute aged 18 years old and above. Data was analysed and calculated using T-test and ANOVA to measure the association of sociodemographic factors with oral cancer knowledge, while the association of smoking habit with oral cancer awareness and knowledge was evaluated using Chi square test.

Result: Oral cancer awareness level was high among the student (85%). However, there was general lack of knowledge regarding early signs of oral cancer, while smoking was observed as the most recognisable etiology of oral cancer (82%). The prevalence of tobacco consuming was relatively high (53.1%) and cigarettes was identified as the most tobacco used product. Only age and gender had significant relation with oral cancer knowledge among the sociodemographic factors. The smoker in this study had

slightly low awareness and knowledge regarding oral cancer compared to the non-smoker.

Conclusion: There was satisfactory level of awareness among the student and the knowledge regarding oral cancer risk factors and early signs of cancer was undeniably low. Through that we conclude the importance of attractive educational programmes to the younger generation about oral cancer which linked them to smoking habits, hence, encouraging them to attend the health educational programme in a regular basis.

ABSTRAK

Latar Belakang: Oral kanser adalah isu kesihatan di seluruh dunia dengan peningkatan insiden setiap tahun yang telah ditunjukkan oleh beberapa kajian. Di Malaysia, kelaziman tabiat merokok dan pengambilan tembakau agak tinggi yang malangnya ia berkaitan dengan perkembangan janin. Kurangnya kesedaran kanser mulut dan pengetahuan dalam kalangan penduduk umum telah didokumenkan. Pengesanan awal dan pemeriksaan sendiri mulut boleh memainkan peranan penting dalam mengurangkan morbiditi dan mortaliti. Pendekatan kami adalah untuk menentukan tahap kesedaran dan pengetahuan mengenai kanser mulut dalam kalangan pelajar berlatar belakang bukan perubatan di Institut Latihan Perindustrian di Kepala Batas, Pulau Pinang.

Metodologi: Kajian keratan rentas menggunakan borang soal selidik dengan 21 item telah dijalankan dalam kalangan 275 pelajar Institut Latihan Perindustrian yang berumur 18 tahun ke atas. Data dianalisis dan dikira menggunakan ujian -T dan ANOVA untuk mengukur perhubungan di antara faktor sosiodemografi dengan pengetahuan tentang kanser mulut, dan seterusnya menggunakan Ujian *Chi Square* untuk menilai perhubungan tabiat merokok dengan pengetahuan dan kesedaran tentang kanser mulut.

Keputusan: Tahap kesedaran terhadap kanser oral adalah tinggi dalam kalangan pelajar (85%). Walau bagaimanapun, secara amnya, terdapat kekurangan pengetahuan mengenai tanda-tanda awal kanser mulut, dan didapati merokok merupakan penyebab

utama kanser mulut (82%). Kadar penggunaan tembakau adalah agak tinggi (53.1%) dan rokok dikenal pasti sebagai produk tembakau yang sering digunakan. Hanya umur dan jantina dari faktor sosiodemografi yang mempunyai hubungan yang signifikan dengan pengetahuan tentang kanser mulut. Perokok dalam kajian ini mempunyai kesedaran dan pengetahuan yang agak rendah mengenai kanser mulut berbanding dengan pelajar bukan perokok.

Kesimpulan: Tahap kesedaran tentang kanser mulut adalah memuaskan dalam kalangan pelajar tetapi pengetahuan mengenai faktor risiko kanser mulut dan tanda-tanda awal adalah tidak dapat dinafikan rendah. Dengan ini, kami berpendapat betapa pentingnya program pendidikan yang disampaikan dalam bentuk yang menarik dapat memberi kesan positif kepada generasi muda terutamanya mengenai kanser mulut yang dikaitkan dengan tabiat merokok, dan seterusnya dapat menggalakkan mereka untuk menghadiri program pendidikan kesihatan secara berterusan.

CHAPTER ONE

1. Introduction

Oral cancer is a worldwide health issue with multifactorial origin and fetal consequences. It is ranked as the sixth common type of cancer in the world with annual incidence of approximately 275,000 in the developing countries, by showing high prevalence in challenging area such as South and Southeast Asia (Warnakulasuriya, 2009).

In Malaysia, the oral cancer incidence is related to several factors such as habit and ethnic group. It was shown that the highest prevalence was observed among the Indians (Ghani et al., 2013). According to the Malaysian Cancer Statistics 2006 oral neoplasm contributed about 10.6% death at government hospitals (National, 2007).

Tobacco use is a well-established and primary risk factor for oral cancer besides alcohol abuse, betel nut chewing and poor oral hygiene. However, the smokers were less aware that smoking is one of the inducing factors for oral cancer (West et al., 2006). Tobacco use and alcohol intake are most avoidable etiology of oropharyngeal cancer (Petersen, 2009), since this habit is a choice made by them.

It is a worrying situation to know that oral cancer awareness is low among the general population and not well documented in Malaysia (Ghani et al., 2013). Being an asymptomatic illness in early stages and having high morbidity in an advance stage, this makes an early identification of oral cancer significant (McGurk et al., 2005b). Knowing the relationship between the predisposing factors and early detection of oral cancer signs can be crucial for saving life (Ghani et al., 2013). Most of the early sign of oral cancer presented as painless white or red patches and persistent ulcer which are commonly ignored by the patient hence leading to delayed diagnosis (Ghani et al.,

2013). A study showed that the patient believes the symptom can be resolved without intervention (Rogers et al., 2007).

The significant consequences of delaying referral and poor prognosis of oral cancer has been reported due to the lack of knowledge among public (McLeod et al., 2005), the stage of presentation is critical in oral cancer prognosis (McGurk et al., 2005b). Primary analysis showed that about 67.1 % of oral cancer cases were detected in the advanced stage (Doss et al., 2011). Factors enact in delaying referral are complex (Rogers et al., 2007) However, primary delay can defined as the patient takes about three weeks to seek professional intervention and these delay factors are affected by sociodemographic and educational status of the patient (Llewellyn et al., 2004). Seventy-eight percent of the patient in UK takes 21 days to be referred from the primary health care to maxillofacial department. Unfortunately, the patient with asymptomatic lesion consume longer time to be referred (Rogers et al., 2007).

Many researchers in oral cancer areas believed that early diagnosis of oral cancer can reduce the complication and deformity and improve the ability to cure and increase the survival rate (Ghani et al., 2013). These could be achieved if awareness programme regarding the accessibility in clinical examination, early sign and symptom of oral cancer and self-examination of the mouth by the individuals through visual inspection are implemented.

The aim of our study was to determine the level of awareness and knowledge regarding oral cancer among students with non-medical background in Industrial Training Institute in Kepala Batas. Previous oral cancer awareness studies in Malaysia (Ghani et al., 2013) were conducted among the medical and dental student whom already have

basic science and medical knowledge while another study was done on random population (Dubai et al., 2012).

1.1. Objectives

1.1.1 General Objective

To determine the level of awareness and knowledge regarding oral cancer among students with non-medical background in Industrial Training Institute, Kepala Batas.

1.1.2 Specific Objectives

1. To determine the prevalence of smoking among the students.
2. To determine the level of awareness regarding oral cancer among the students in Industrial Training Institute.
3. To determine the level of knowledge regarding oral cancer among the students in Industrial Training Institute.
4. To determine the association of sociodemographic factors with oral cancer knowledge.
5. To determine the association of smoking habit with oral cancer awareness and knowledge.

1.1.3 Hypothesis

1. There is association of sociodemographic factors with oral cancer knowledge.
2. There is association of smoking habit with oral cancer awareness and knowledge.

CHAPTER TWO

2. Literature Review

2.1. Definition and Incidence of Oral Cancer

Cancer can be defined as abnormal rapid transformation of normal cell and grow beyond their boundaries with the ability to invade nearby structure and spread to other part of body in a process known as metastasis (Al-Kaabi et al., 2016). However, oral cancer from the clinicopathological concept is defined as a growth of malignant cells in any part of the oral cavity, which includes the lips, tongue, hard and soft palates, salivary glands, lining of the cheeks, floor of the mouth or under the tongue, gums, and teeth (Neville and Day, 2002). Oral cancer is often discussed under the oropharyngeal cancer which include cancer in the middle part of the throat, tonsil, soft palate and pharynx (Cancer, 2009). On the other hand, oral cancer can be identified as malignant neoplasm arising from the lining mucosae of the lips and mouth (oral cavity), including the anterior two thirds of the tongue (Gupta and Johnson, 2014).

Squamous cell carcinoma is considered as the commonest type of oral cancer specially in South Asia compared to North America and Europe, with the observation of high death rate in South Asia region (Ferlay et al., 2010).

The incidence of oral cancer is a growing problem and has a huge impact on the society. Globally, the highest incidence has been observed in South and Southeast Asia for example India, Sri Lanka, Taiwan and Pakistan which reported to be at the top rank in Asia. However, Japan showed the lowest oral cancer prevalence in the Asia region (Warnakulasuriya, 2009). Meanwhile in other part of the world, Brazil and Uruguay

which are situated in South America and few countries in Africa and Europe also showed high incidences of oral cancer as shown in Figure 2.1 (Warnakulasuriya, 2009).

Figure 2.1 Global distribution of the highest incidence of oral cancer (Warnakulasuriya, 2009).

Malaysia is located in South East Asia and consist of many ethnic groups. In West Malaysia, majority are Malay (51.0%) followed by Chinese (24.2%) and Indian (7.1%) while in East Malaysia, Sabah and Sarawak are the Malay Archipelago (11.0%). In Malaysia, the incidence of oral cancer in general population ranked as the 11th common type of cancer with two reported new diagnosed cases of oral cancer every day (Lim et al., 2008).

National Epidemiology Survey in 1997 a random sampling of the entire Malaysian population was conducted to determine the prevalence of oral precancer lesion among Malaysian. The survey showed greater incidence of oral precancer lesion among the Indians followed by East Malaysian population (Zain et al., 1997).

Meanwhile, the National Cancer Registry reported that there were 353 oral cancer cases registered in 2007 and out of 353, 171 were males and 182 were females as shown in (Table 2.1). In Malaysia, oral cancer is ranked 21st common cancer among public population and is the 17th common type of cancer in males and 16th most common in the females. The age-standardised rate (ASR) of 8.5 and 2.6 per 100,000 population for males and females respectively. The incidence rate for oral cancer was highest among female Indians with the ASR of 15.9 per 100,000 population followed by Chinese males with 1.8 ASR per 100,000 population as mentioned in Table 2.2. Unfortunately, only 35.4% of these reported cases present at stage I and II. Oral cancer has very good prognosis where almost always cured if they present at early stage. On the other hand their survival rate is lower than cervical cancer, skin melanoma and breast cancer when the patient seek for treatment at late stage (National, 2007). It was reported that there were 1587 death due to oral cancer which contributed to 1.55% of total deaths in Malaysia in 2011. Malaysia was ranked 14th in the world with age adjusted death rate 7.72 per 100,000 population (National, 2007)

Table 2.1: Number of cases based on gender for Malaysian population in 2007. Adapted from (National, 2007).

SEX	NO	%	CR	ASR
MALE	171	48.4	1.3	1.8
FEMALE	182	51.6	1.5	1.8
BOTH	353	100		

Table 2.2: The comparison between major ethnics in Malaysia (Number of new cases, Crude rate, ASR) by their sex (National, 2007).

ETHNIC	MALE			FEMALE		
	NO	CR	ASR	NO	CR	ASR
MALAY	52	0.8	1.1	57	0.9	1.2
CHINESE	62	1.9	1.8	30	1.1	0.8
INDIAN	36	3.8	3.8	70	7.4	10.2

Table 2.2: The comparison between major ethnics in Malaysia (Number of new cases, Crude rate, ASR) by their sex (National, 2007).

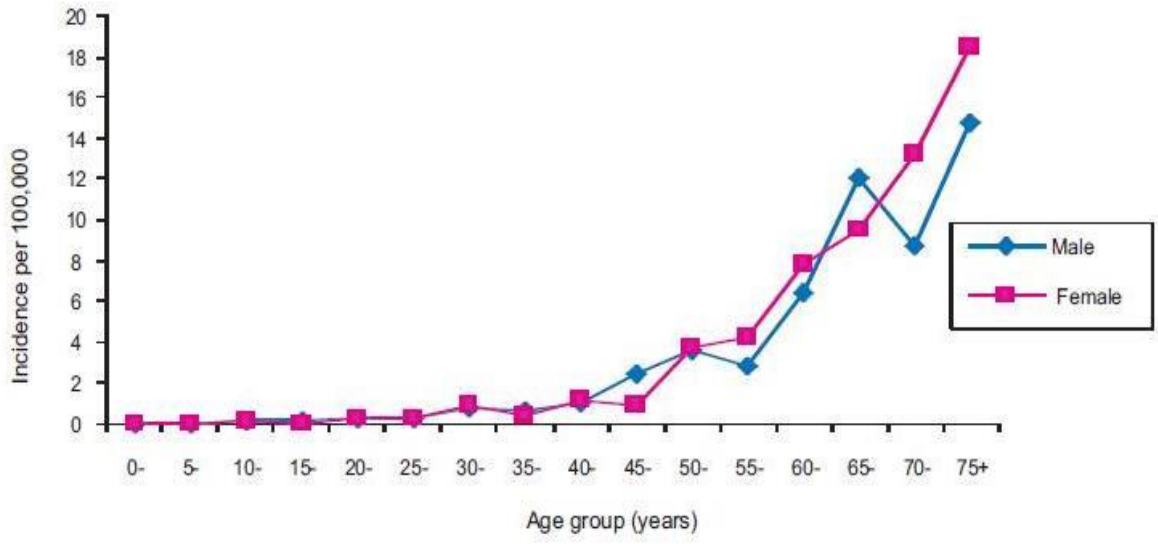

Figure 2.2: Oral cancer incidence age specific per 100,000 with sex (National, 2007)

Table 2.3: Tongue and oral cancer predominated the type of cancer in males and female as shown in (National, 2007).

	MALES			FEMALE		
SITES	**NO**	**CR**	**ASR**	**NO**	**CR**	**ASR**
LIP	9	0.1	0.1	8	0.1	0.1
TONGUE	93	0.7	1.0	78	0.6	0.7
MOUTH	69	0.5	0.7	96	0.8	1.0
ALL	**171**			**182**		

The common site of oral cancer was the tongue which occur more in male compared to female, however in female, oral cancer is common in other area of the oral cavity as shown in Table 2.3.

2.2 The Prevalence of Smoking and Its Sociodemographic Association in Malaysia

In 2010, there was about 5 million smokers among adolescents who were younger than18 years old in Malaysia (Al-Sadat et al., 2010). The report by the National Health and Morbidity Survey (NHMS) in 2015 showed that one in ten Malaysian teenagers in age group between 13 to 17 were smokers (SURVEY, 2015). In a recent review, cigarette smoking was widespread among secondary school children with prevalence of 33.2%, where male dominance over female with a prevalence of 63.5% and 17.5% respectively (Wee et al., 2016).

In Sarawak, the prevalence of smoking among students in the secondary high school was 43% with the average 1 to 3 cigarettes consumed per day. The preferred type of tobacco used among these student was branded cigarette (Juslina et al., 2011).

Meanwhile, in Selangor, the smoking prevalence was 22.8% among the standard six students (Afiah et al., 2006). A cross sectional study in Kelantan on Malay primary school children, showed about 11.8% of the students were smokers and 3.8% were currently smoking at the time of the study. The students started smoking from six years old due to peer's influence (Norbanee et al., 2006).

In 2010, a study done among students in Management and Science University Selangor, Malaysia revealed that the prevalence of smoking was 29.0% (Al-Naggar et al., 2011). The NHMS, 2006 reported that 46.9% male adult in Malaysia are smokers and recommendation was made to increase the public awareness (Lim et al., 2013). While another study showed that the prevalence of smoking in Malaysian adult above 15 years old was about 23.1% and significantly higher among male than female (Tee et al., 2013).

The prevalence of smoking has been influenced by several factor such as lower income, primary education, younger age and type of individual occupation (Cheah and Naidu, 2012). Socio-demographic factor affect the prevalence of smoking among the individuals in different ways. Affordability and availability of the tobacco product in Malaysia raised the prevalence of smoking among public. Interestingly, the highest prevalence of smoking was predicted among Malay male with 55.9% compared to other ethnic group and 60% of them start to smoke by 18 years old. Commonly used type of tobacco were cigarettes 90% among Malay male and they smoked average of 12.3 cigarettes per day. Other form of tobacco product used was the hand rolled tobacco. The correlation between the smoking and the level of education with lower income was remarkable. Most of the smoker were of secondary education level with less than RM 2000 as monthly income and staying in rural area. The prevalence of smoking among male who worked in elementary occupation were higher with 64.8% followed by craft

skilled, agricultures and fisheries with 58.4% and 58.2 % respectively. The study also state that the marital status affect the smoking status with 55.2% among the divorcee's following by singles with 54.9%. In addition, the individuals with better education and income were more concerned about their health and the prevalence of smoking among them was low (Lim et al., 2013).

2.3 The Awareness of Oral Cancer in Literature

In literature, awareness is defined as complex and relative concept. Awareness is "the ability to integrate sensation from the environment and the person's own feelings in order to guide him to a behaviour" (LaBar and Disterhoft, 1998).

In Iran, a study was done on oral cancer awareness among the patients referred to Mashhad Dental School. There was a general lack of awareness among the patients and recommendations were made to increase awareness by the media, play role in educational programs like on Television, newspaper, radio and advertisements. Unfortunately, these programmes usually link the smoking with lung cancer rather than oral cancer (Pakfetrat et al., 2010). Sri Lankan researchers recommended to increase the general population awareness on preventive strategies, signs and symptoms of oral cancer and precancer. They also suggested on provision of attractive and informative reading materials to the public, especially regarding precancer and outreach low-cost educational program for less privileged groups in their society (Ariyawardana and Vithanaarachchi, 2005).

The National Survey in United Kingdom reported that the level of awareness on oral cancer was low among public, only 56% of them were aware. However, the UK

population are more aware of other cancer compared to oral cancer such as skin cancer, lung cancer and cervical cancer with 96% ,97% and 86% respectively (Warnakulasuriya et al., 1999). Those who had not known or heard of mouth cancer are usually those with lower socioeconomic level and older aged group. However, no gender difference in the level of awareness (West et al., 2006).

A survey done to highlights the awareness level of oral cancer among undergraduate medical and dental student at the Dundee University showed dental students were more aware of the risk factors compare to their medical counterpart, both group of students could not identify oral changes associated with oral cancer. This factor would affect the referral time to the specialist in the future. Ninety three percent of final year medical students and 34% of dental students felt that they do not have adequate knowledge about oral cancer prevention and sign of early detection. The study also highlight the low level of awareness about oral cancer in general medical practitioners and there was a need to improve their knowledge regarding early detection and prevention of oral cancer in undergraduate medical and dental students (Carter and Ogden, 2007).

However, another survey was done among undergraduate medical students in Himachal Pradesh, India to assess the level of knowledge on oral cancer. In this study, it was revealed that 96.5% of the students have a high level of knowledge on oral cancer. The recommendations of the study were to encourage the student to help smoking patients and alcohol consumer to stop the habits which can lead to oral cancers (Fotedar et al., 2015).

In South India, Hyderabad City Hospital, 60.2 % of the dental patient who came for their dental visits were aware about oral cancer and they gain the knowledge mostly from media. Unfortunately, the knowledge of the risk factor was significantly more in

women than in men who are at higher risk due to their bad habit. In addition, the awareness and knowledge of oral cancer was more among patients with higher education level. The recommendation of the study was to improve the awareness among population by structured programmes to highlights the importance of oral cancer prevention through media (Srikanth Reddy et al., 2012).

In Malaysia, a study among random participation in shopping mall revealed that the Malaysians who participated in this study were aware about oral cancer however there was lack of knowledge about risk factors and initial sign, symptom and advantages of noticing the disease at preliminary stages (Ghani et al., 2013). Previous study conducted among the medical and nursing undergraduate students in a private university, showed high percentage of respondents 95% recognised smoking as a risk factors for oral cancer but only 38% of the respondent agreed that oral cancer could be cured if detected early. Nevertheless, the students should be introduced to diagnostic tools of oral cancer and early referrals protocols (Dubai et al., 2012). Another study assessing oral cancer knowledge between the dental and medical student of University of Malaya also concluded that the dental students had a higher level of knowledge on oral cancer sign and symptom, benefits of early detection compared to students of medical school (Awan et al., 2014).

2.4 The Benefits of Early Detection and The Problem Associated with Delay Referral

Oral cancer initially started from the intracellular changes, transform into precancerous lesion and progress to the clinical appearance of oral cancer lesion. Certainly, the earliest diagnosis and detection for precancerous and cancerous lesions, will be the key element to improve the patient quality of life. Oral cancer is among cancers that could

be detected early since oral cavity can be assessed easily. Therefore, recognition of premalignant or malignant abnormalities through the clinician or the individuals by self-examination, can be achieved and contribute to early diagnosis.

The timing in oral cancer diagnosis is the most essential element, due to asymptomatic characteristic of these oral lesions, patient often are not aware of the existing lesion until the lesion get worsen and start showing suspicious clinical symptoms which usually is already at an advanced stage. Most of oral cancers presented at late stage were typically large and 50% of the cases presented with lymphadenopathy (Mashberg and Samit, 1989). Well- known that most of oral cancer conditions are asymptomatic (McGurk et al., 2005a) and some may experience different presentation which patients ignore. These are the major delaying factor on the patient's part. There are many reasons for a delay in diagnosis and treatment for oral cancer and it is defined as the period between the detection of the symptoms and the definitive diagnosis (McGurk et al., 2005b). In addition, the diagnostic delay plays a major part in determining the prognosis of oropharyngeal cancer patient. These delays could be categorised as patient delay which is the period of the patient first detect a symptom and their first consultation about the lesion, while scheduling delay is the period between the patient taking the appointment and the actual meeting with the clinician, and professional delay can be defined as the time which patient wait for their definitive diagnosis from their health professionals and the first consultation (Gómez et al., 2009). The delayed cases usually presented with ulcer (41%), swelling (26%) and red or white patches (26%). Most of these patients visited the medical practitioner in hospitals instead of going to dentist and 40% of them were female. The most significant site of lesion are the anterior two third of the tongue 46% followed by buccal mucosa and floor of the mouth with 44% and 31% respectively (Rogers et al., 2007).

Oropharynx cancer obtain the same symptoms with infectious disease such as pharyngitis which could be confusing to the general practitioner and become one of the reasons of late diagnosis. In addition, lack of awareness among the medical and dental practitioner on sign and symptoms cause the delay referral to specialist. Unfortunately, due to the nature of squamous cell carcinoma, 53.3% of the patients were diagnosed at the fourth stages (Jafari et al., 2013). In a study done at Tehran University, 74% of oral cancer patient were above 50 years old. This study also revealed that patient with squamous cell carcinoma had average time of delay about three weeks, while pharyngeal and tongue lesions were diagnosed even later about twelve to thirteen months later (Jafari et al., 2013).

Oral cancer is stated as a preventable condition (Pavia et al., 2006). The survival rate is about 80% when the tumour is discovered in an early stage and less than 30% in cases appearing with distant metastasis (Oh et al., 2008). A large portion of oral cancer patients were still diagnosed with advanced stages whereby 40% of them were diagnosed in stage three or four (Rodgers and Macpherson, 2006). To enhance better prognosis with long term benefits, the early diagnosis should be made as early as possible (Oh et al., 2008). The dental and medical professionals play a crucial role in the early and quick detection and referral to save the patients' lives.

2.4.1. Self-Examination of The Mouth

Other factors that influence the late diagnosis is the patient awareness, not knowing the oral changes associated with oral cancer, the importance of early detection and visiting the clinician. Self-examination of the mouth is similar to self-examination for the breast cancer which should be done regularly. An individual with high risk factor can perform

monthly self–mouth examination in a mirror which will help in the early detection of oral lesion. Self-mouth examination is done by lifting the tongue upwards to see the floor of the mouth, checking the ventral aspect of the tongue and examining the lateral aspect of the tongue by moving it to the right and left, examine the cheeks by pulling it to view the vestibules, buccal mucosa and gingiva. The ability of the patient to recognise and detect by the self-mouth examination can lead to early detection for asymptomatic lesion (Jafari et al., 2013). The high risk area predisposed to oral cancer and may developed squamous cell carcinoma is the anterior floor of the mouth and it is more common among cigarette smokers who are also drinkers (Mashberg and Samit, 1989).

2.5 Smoking as A Primary Risk Factor in Causing Cancer

Smoking tobacco fundamental issue which is related to serious health illnesses, such as, cardiopulmonary diseases, cancer as well as many health conditions. It is linked to a lot of harmful oral health problems, such as oral cancer and periodontal disease. The causes and pathogenesis of cancers are still ambiguous. There are many risk factors of oral cancer among them are tobacco, alcohol, diet, drugs, radiation and environmental factors.

Carcinogenesis of oral cancer is similar to other type of cancer, the progressive nature of cancer passes through several stages, begin with dysplasia of normal epithelium to the invasive phenotypes. Squamous cell carcinoma is the most common form of oral cancer. New approach has been used to study the molecular and proteomic methods in recent years and have exposed the pathological molecular picture of oral cancer. There are sufficient evidences evoking that tobacco in many forms, including chewing betel

quid, smoking and smokeless tobacco have carcinogenic effect in oral cavity. The most popular types of tobacco use are cigarettes, pipe cigars and hookah (a clay pipe used to keep the burning tobacco) (Ram et al., 2011).

The study done in Greece illustrated that smoking was considered as a risk factor of oral cancer among men and there was higher smoker among men than women. Moreover, there are higher incident of oral cancer cases in individuals consuming both tobacco and alcohol (Zavras et al., 2001). Another study in Trivandrum, India indicated that chewing betel quid as stronger risk factor of oral cancer with highest prevalence in female, due to the direct contact and exposure of mucosa for long time and result in relatively low survival rate and poor prognosis (Muwonge et al., 2008). On the other hand , a vitro study , there is direct evidence that the areca -nut extract agent from betel nut as the main ingredients responsible for changing the cell growth and differentiation that lead to damaged DNA (Sundqvist and Grafstrom, 1992).

2.6. The Relation Between Smoking Habit and The Awareness of Oral Cancer

Smoking cigarette have multiple effects on oral health. The consequences vary from teeth discolouration and periodontal disease which lead to loss of teeth to a more serious illness such as oral cancer. The comparison between the smokers and non-smokers awareness and knowledge in a study done in Kuwait revealed that the awareness on oral cancer among smokers was 52.4% which was less than the non- smokers 66.8%. On the other hand, the sociodemographic factor such as age, marital status and level of education affect the awareness and knowledge level on oral cancer. This was shown in the study where 93.3% of the male smokers had only high school or lower education level and only 52.2% of them were aware that smoking could cause oral cancer.

In addition, the study showed that these smokers seek smoking cessation after being aware of the link between the smoking and oral disease (Al-Shammari et al., 2006).

In conclusion, public awareness about oral cancer is a vital aspect to detect early sign of oral cancer. This could be achieved by educating the public especially the high-risk group to enable them in early detection and self-referral. Nevertheless, emphasis on the health professional worker's competency in detecting any sign of oral cancer should be enhanced to reduce or eliminate referral delay to specialist.

Therefore, public health action and policy should focus on the high-risk population; Malay males from a lower income group and less education in Malaysia which was highlighted in a previous study (Lim et al., 2013).

CHAPTER THREE

3. Methodology

3.1 Study Area

Industrial Training Institute (ILP) is located 6 km from Kepala Batas town. ILP was established under the Manpower Department intended to provide technical training in a formal way to the industrial sector man powers and school leavers; at the same time enable them to gain knowledge in a specific skill field.

3.2 Source of Population

ILP registered students at the time of data collection.

3.3. Type of Study and Research Tool

This is a cross-sectional study utilising questionnaire adopted from a previous study (Ghani et al., 2013). The questionnaire has been validated by the previous researchers (Ghani et al., 2013) where the questionnaire contains domains with a fairly good internal consistency reliability (Cronbach alpha 0.60-0.87) which indicates that each domain is reliable and can be used in the current study. The questionnaire used in the current study consisted of three sections (A, B, C). For section A, it is regarding the sociodemographic assessment (A1-A10), section B is regarding the awareness and knowledge of mouth cancer which consisted of 7 items (B1-B7) while section C is regarding the source of information which consisted of 4 items (C1-C4). Social

demographic section asking about participant's age, ethnic group, gender, occupation, marital status, monthly income and level of education.

For section B assessing awareness (B2), the respondents were considered aware of mouth cancer if they answered "Yes" for question B2 "Have you heard regarding mouth cancer before" while (B3 - B7) assessed the respondent's knowledge on mouth cancer. Mark was given for each question, one mark was given for the right answer for section B3, scoring range from 0 to 7. For (B4 to B6) 2 marks was given for correct answers, scoring ranges from 0-6 and one mark each for correct answer for B7 and score ranges from 0-5. The total score range for knowledge was 0-22. Those respondents having total knowledge score less than 7 were considered having a poor knowledge, score 7-14 was considered a fair knowledge and score more than 14 were considered as having a good knowledge.

3.4 Sampling Method and Subject Recruitment

Subjects were selected using simple random sampling from their registration list. Letter of approval to conduct the study was sent to the Director of ILP asking for their cooperation in allowing their students' involvement in this study. The students were recruited at the end of their classes with permission. Short briefing and presentation of the study procedures concerning the purpose of the survey was delivered to the students.

Upon finishing the briefing session, the students were invited to take part and they were made known that their participation were voluntary. The interested students were provided with consent form and their consents were obtained followed by the distribution of the questionnaires. The questionnaires required approximately 20 minutes to be completed. The questionnaire was self-administered; however, the