



Oral Cancer Knowledge among a Sample of Elderly People in Depok City, West Java, Indonesia

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Abstract

Objective: To determine the level of knowledge concerning oral cancer among a sample of elderly people with various sociodemographic characters, behavior, and dental visits in Depok City, Indonesia. **Material and Methods:** A cross-sectional study of oral cancer awareness was conducted among 100 elderly people in Depok City using an interviewer-administered questionnaire. We collected information regarding sociodemographic data regarding age, gender, marital status, education, health insurance, risk factors and early signs of oral cancer, and questions related to lifestyle factors relevant to oral cancer, including smoking, drinking alcohol, tobacco chewing, betel quid chewing, and dental visits. Data were analyzed through the Statistical Package for Social Sciences and presented through descriptive and inferential statistics. Statistical significance level was set at $p < 0.05$. **Results:** 64% of respondents have poor knowledge of the oral cancer risk factors, while only 25% of respondents have sound knowledge of the early signs of oral cancer. There was a significant difference in the level of oral cancer knowledge according to gender ($p = 0.01$), level of education ($p = 0.008$), smoking behavior ($p = 0.03$), and dental visits ($p = 0.01$). **Conclusion:** The oral cancer knowledge among elderly people in Depok City is still lacking. Further, some sociodemographic factors influence the level of oral cancer knowledge.

Keywords: Mouth Neoplasms; Knowledge; Risk Factors; Signs and Symptoms.

Introduction

Oral cancer is a highly prevalent disease, being ranked sixth in terms of prevalence among all the cancers worldwide [1,2]. Indeed, the prevalence of oral cancer has reached 300 million people or 2.1% of the total number of cancer cases recorded globally [2]. In China, the incidence of oral cancer was recorded as 0.7 per 100,000 people, while in India it was recorded as 20 cases per 100,000 inhabitants [2]. Further, South Asia and Southeast Asia are the regions with the highest prevalence of oral cancer [2,3].

Oral cancer is categorized as a disease with a low survival rate (<50%), despite recent advances in the detection, treatment, and knowledge of the disease [4]. Localized cancer has a survival rate of 82.4%, while cancer that spreads regionally has a lower survival rate (57.3%) [4]. The survival rate for the advanced stage of oral cancer (distant metastases) is only 34.9% [4]. An early diagnosis of oral cancer could increase patients' survival rate. The high number of patients with oral cancer who reach the advanced stage of the disease represents the major difficulty with treatment, since the prognosis becomes worse as the disease advances [5].

In the vast majority of Asian countries, there is no oral cancer screening or organized educational programs. Although public knowledge of oral cancer is still inadequate in many developed countries, even among the healthcare providers and health care professionals [6,7]. In fact, the existence of educational programs can improve public knowledge of the risk factors behind oral cancer, which should facilitate the early detection of the disease. In the absence of adequate and accurate information, people cannot make the best choice regarding their own health [8].

The elderly population is increasing worldwide. Oral cancer is one of the oral health conditions with an elevated prevalence among this population [9,10]. Depok City, West Java, Indonesia, aspires to become an age-friendly city by 2030. In Depok City, the elderly population (>60 years) accounts for 5.5% of the total of 2,033,508 inhabitants [11]. One key dimension of age-friendly cities is the health dimension [11]. The particularly vulnerable condition of elderly people with regard to oral cancer must therefore be considered when attempting to transform Depok City into an age-friendly city [11]. Adequate data concerning the level of oral cancer awareness among the elderly population is still lacking, despite the recognition of the higher incidence of the disease among this population [12].

Hence, this study aims to assess the level of oral cancer knowledge among a sample of elderly people in Depok City.

Material and Methods

Study Design and Sampling

It was developed a cross-sectional study. One hundred subjects were conveniently recruited from the Pancoran Mas District of Depok City, Indonesia.

Data Collection

The study used an interviewer-administered questionnaire that consisted of two parts. Sociodemographic data regarding age, gender, marital status, education, and health insurance were gathered in the first part of the questionnaire.

The second part consisted of 17 questions related to the risk factors and early signs of oral cancer, which required yes/no responses, as well as five questions related to lifestyle factors relevant to oral cancer, including smoking, drinking alcohol, tobacco chewing, betel quid chewing, and dental visits. The questions were prepared in Indonesian and then translated into English. The English translation was back translated into Indonesian in order to ensure the same valid meaning.

This study categorized the respondents' knowledge concerning oral cancer as either "poor" or "good". The knowledge was categorized as "poor" when a respondent could not provide one right answer, while the knowledge was categorized as "good" when a respondent could provide one or more right answers.

Data Analysis

A univariate analysis was performed to generate a description of the sociodemographic factors, behaviors related to cancers of the mouth, and the last visit to the dentist of the elderly respondents living in Depok City.

A bivariate analysis (Chi-square test) was conducted to investigate the relationship between the sociodemographic factors, lifestyle factors relevant to oral cancer, and last dental visits of the respondents and their level of knowledge concerning oral cancer. Statistical analysis was performed using IBM SPSS software version 20 (IBM Corp., Armonk, NY, USA). Statistical significance level was set at $p < 0.05$.

Ethical Aspects

The study has been approved by the Faculty of Dentistry Ethics Committee. All subjects provided informed consent to participate in the study.

Results

The distribution of responses regarding the risk factors and early signs of oral cancer is shown in Tables 1 and 2. This study revealed that 10% of subjects could not provide one correct answer and, surprisingly, 54% of subjects reported that they did not know anything about the risk factors for oral cancer. Only 36% of subjects provided one or more correct answers regarding the risk factors for oral cancer. Furthermore, 75% of subjects did not know anything about the early signs of oral cancer (Table 2).

This study showed that several factors influenced the respondents' level of knowledge regarding the risk factors and early signs of oral cancer. Indeed, sociodemographic factors such as gender ($p=0.01$), level of education ($p=0.008$), and smoking habit ($p=0.03$) significantly influenced the respondents' level of knowledge regarding the risk factors for oral cancer (Table 3). Yet, only the

respondents' last dental visit had a significant influence on their level to knowledge regarding the early signs of oral cancer ($p=0.01$) (Table 3).

Table 1. Responses regarding knowledge of oral cancer risk factors.

Risk Factors	N	%
Smoking (cigarette, cigar, pipe)	33	33.0
Tobacco chewing	13	13.0
Alcohol drinking	17	17.0
Too much sun exposure	6	6.0
Virus	14	14.0
Genetic	5	5.0
Illicit drug use	9	9.0
Too much coffee	9	9.0
Eating spicy foods	12	12.0
Cheek biting	10	10.0
Bad oral hygiene	24	24.0
Do not know	54	54.0

Table 2. Responses regarding knowledge of the early signs of cancer.

Early Signs	N	%
Non-painful white patches in the mouth	8	8.0
Non-painful red patches in the mouth	9	9.0
Mouth sore that does not heal	23	23.0
Bleeding in the mouth	3	3.0
Do not know	75	75.0

Table 3. Association between knowledge of oral cancer risk factors and signs according to sociodemographic factors, behavior and dental visits.

Variables	N [100]	Knowledge					
		Oral Cancer Risk Factors		p-value	Oral Cancer Early Signs		p-value
		Poor [64]	Good [36]			Poor [75]	
Gender							
Male	28	12	16	0.01*	20	8	0.61
Female	72	52	20		55	17	
Age							
60 - 74	84	53	31	0.78	62	22	0.75
75 - 90	16	11	5		13	3	
Education							
No schooling	16	13	3	0.008*	14	2	0.62
Less than HS	61	43	18		44	17	
Senior high school	18	6	12		13	5	
Bachelor	5	2	3		4	1	
Marital Status							
Married	73	44	29	0.28	54	19	0.79
Widow	27	3	0		21	6	
Health Insurance							
National system	71	43	28	0.35	53	18	1.00
Private	29	21	8		22	7	
Smoking							
Yes	21	9	12	0.03*	14	7	0.39
No	79	55	24		61	18	
Tobacco Chewing							
Yes	1	0	1	0.36	1	0	1.00
No	99	64	35		74	25	

Betel Chewing							
Yes	10	8	2	0.32	8	2	1.00
Never	90	56	34		67	23	
Alcohol Use							
Yes	3	2	1	1.00	3	0	0.57
Never	97	62	35		72	25	
Last Dental Visit							
Never	32	23	9	0.36	30	2	0.01*
<1 year ago	49	28	21		33	16	
>1 year ago	19	13	6		12	7	

* Statistically significant.

Discussion

Oral cancer is a significant health concern that is most commonly diagnosed in people over the age of 45. In fact, the elderly is the population group with the highest likelihood of a diagnosis of the disease [12]. The detection and diagnosis of oral cancer during the early stages remains the key prognostic factor influencing patients' survival rate. The ability to detect the early signs and reduce the risk factors associated with oral cancer are regarded as the most effective methods of decreasing oral cancer morbidity and mortality [8]. Therefore, it is important for both health practitioners and patients to have a good level of knowledge concerning oral cancer. However, the available data regarding oral cancer awareness in Indonesia is still lacking. Hence, this study aimed to determine the level of oral cancer knowledge among a sample of elderly people in Depok City, West Java, Indonesia.

This study found the elderly respondents to have alarmingly poor knowledge of the risk factors and early signs of oral cancer. The list of oral cancer risk factors included smoking, tobacco chewing, excessively drinking alcohol, UV exposure, virus, and genetic factors. More than half of the respondents did not know anything about the risk factors associated with oral cancer. Only 36% of respondents could identify at least one risk factor for oral cancer. Among the correct answers, smoking was the most commonly identified risk factor. This finding is much lower than the results of prior studies concerning the awareness of oral cancer in countries such as Malaysia, Yemen, Saudi Arabia, and Portugal, although it is similar to the results of a study conducted in Turkey [13-17]. However, this study showed similar trends to those seen in findings from other countries, namely that public knowledge regarding the risk factors for oral cancer is still lacking. There is hence a need to integrate oral cancer awareness into general health promotion programs [18].

In this study, gender was found to influence the respondents' level of knowledge regarding the risk factors for oral cancer. The percentage of female respondents with a good knowledge score (27.8%) was lower than the percentage of male respondents with a good knowledge score (57.1%). In contrast, the results of several prior studies related to cancers of the mouth showed female participants' knowledge of the risk factors for oral cancer to be higher than that of male participants [19]. Additionally, higher education levels also led to a higher score regarding knowledge of the risk factors for oral cancer. This finding is similar to the results of previous studies conducted among patients who visited dentists in Queensland and India, which indicated that respondents who have

completed tertiary education have a better knowledge of the risk factors for oral cancer than respondents who only attended primary and secondary school [20,21]. It is, however, important to remember that knowledge can be obtained from various sources, and formal education is not the only means of accessing knowledge. The results of this study indicate that the education level of the female respondents was relatively lower than that of the male respondents, which would likely have influenced the gender-related differences reported above. Further, the respondents who smoked exhibited a higher level of knowledge regarding the risk factors for oral cancer when compared to the respondents who did not smoke. All the respondents who smoked were males, since none of the female respondents reported smoking. This finding may reflect the success of the campaign of placing cancer warnings on cigarette packets that has been undertaken in some countries, including Indonesia [22].

Other oral cancer-related lifestyle factors such as tobacco chewing, betel chewing, and alcohol consumption did not show any influence on the respondents' knowledge of the risk factors associated with oral cancer in this study. This may be because such habits are very rare in contemporary society due to various factors, for example, alcohol consumption is contrary to the culture and beliefs of most respondents in Indonesia. Further, the habit of tobacco and betel chewing is most commonly seen in rural areas of Indonesia, particularly North Sumatra, Dayak, and Papua. This habit is considered to be a sign of respect for plants, and it usually engaged in during traditional events [23].

The knowledge of the respondents regarding the early signs of oral cancer was also a matter of concern in this study, since 75% of respondents did not know any early signs of oral cancer. The results were much lower than those seen in previous studies [13-17]. However, it has previously been shown that people of an older age tend to have poorer knowledge about oral cancer [19]. The limited extent to which the elderly are exposed to public media and the internet as well as their lack of access to health facilities, relatively low quality of life, and low level of health literacy may have contributed to the results [19,24,25].

None of the sociodemographic factors and oral cancer-related lifestyle factors caused a significant difference in the respondents' knowledge of the early signs of oral cancer in this study. This may be because the selection of respondents was performed in a community in which the socio-economic conditions and levels of education are almost the same. However, the respondents' history of dental visits appeared to influence their knowledge of the early signs of oral cancer. Respondents who last visited the dentist less than a year ago were more likely to exhibit a good level of knowledge when compared to respondents who had never visited to the dentist. These results are similar to the findings of research conducted in Portugal, which also showed that recognizing sores that do not heal to be an early sign of oral cancer is influenced by the respondents' last dental visit [15]. This finding suggests that within dental and oral health services, dentists not only play a role in providing medical care, but also act as educators regarding problems related to dental and oral health. This role should have a positive influence on patients, especially in terms of their ability to

recognize pathological conditions that are difficult to detect during the early stages, including oral cancer. Effective communication, information, and education regarding the risk factors and early signs of oral cancer should therefore to be encouraged, not only on the part of healthcare providers such as health centers and hospitals, but also among non-governmental organizations, universities, and even professional organizations [26].

It is important to note that this study did have some limitations. The majority of respondents were female, and they reported similar sociodemographic conditions. Although the invitation to take part in the research was quite widely circulated, most of those who agreed to participate were females. This may be attributed to the fact that female elderly people are more actively involved in the activity of their community when compared to male elderly people [27]. In addition, the data collection was conducted in a location in which the sociodemographic conditions tend to be similar. This likely had an effect on the proportion of respondents and hence allowed for sample bias. However, the data skewing in this study was less likely to cause bias with regard to the greater population of the Depok area, since similar demographic profiles are found within the area [11].

The results of this study have shown the same trends as those of other studies in that there is still a lack of knowledge regarding the risk factors and early signs of oral cancer, although the respondents in this study only represented a small proportion of the whole Indonesian population [13-17]. The results of this study also agreed that there exists a need to provide the public with suitable educational materials related to the oral cancer issue [18]. The elderly population is considered to be a high-risk population in this regard, since they may have decreasing cognitive function, limited access to health information and health facilities, as well as low health literacy [24,25]. The involvement of healthcare workers and caregivers may therefore help in increasing the level of knowledge among the elderly [28-30].

Conclusion

This study revealed that the level of knowledge regarding the risk factors and early signs of oral cancer among a sample of elderly people in Indonesia is still poor. Factors such as gender, education level, and smoking habit were shown to influence the respondents' level of knowledge regarding the risk factors for oral cancer, while the respondents' history of dental visits influenced their knowledge of the early signs of oral cancer

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