

Oral Health Literacy and Oral Cancer Knowledge of the Caregiver of Older Adults at the Nursing Homes in Jakarta, Indonesia

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Abstract

Oral Health Literacy (OHL) and oral cancer awareness on older adult caregivers at nursing homes have not been widely explored.

Analyze the sociodemographic factors related to OHL and oral cancer knowledge on the older adult caregiver of nursing homes in Jakarta.

A cross-sectional study on older adult caregivers on six public nursing homes under the government Jakarta management. Previously validated Health Literacy in Dentistry Indonesian version (HeLD-ID) and oral cancer knowledge questionnaires were used. Differences in sociodemographic factors on HeLD-ID and oral cancer knowledge were analyzed, and the statistical significance level was set at $p < 0.05$.

The mean of the total HeLD-ID score was 3.08 ± 0.65 . The Understanding domain had the highest score with a mean of 3.44 ± 0.78 . The HeLD-ID score was not significantly differed by age, gender, occupation, smoking habit, drinking alcohol, chewing tobacco and betel ($p > 0.05$), but significantly differed by level of education and dental visit ($p < 0.05$). A high percentage of poor oral cancer knowledge was seen in the group of females, age 25-44 years old, middle-level education, and level of contact. However, the level of the oral cancer knowledge was not differed by sociodemographic factors (gender, age, education, and occupation), habits (smoking, chewing tobacco, betel and drinking alcohol), and dental visit ($p > 0.05$).

These results suggest that efforts for improving OHL and oral cancer awareness are necessary for the population group.

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Introduction

The percentage of older adult population in Indonesia is increasing. While many studies have explored oral health literacy in children's caregivers, no studies that explored this issue on older adult caregivers have been reported.^{1,2}

Many studies on older adults population have been performed.²⁻⁴ In Indonesia, the survey that analyzed the relation between OHL score with the demographic factors and Simplified Oral Hygiene Index (OHI-S) score on the independent older adult was held at Depok City in 2016.⁵

Other studies had explored Oral Health Impact Profile (OHIP)-14 on the older adult as well as the relationship between nutrition and oral cavity health on the older adult.⁶⁻⁸ In Australia, the health of the oral cavity model was rallied for the Nursing Home since 2010, through the approach of doctors, nurses, caregivers, and dentists.⁹ In Japan, the study regarding the relation between OHL with health behavior and clinical status on adults.¹⁰

The older adult caregivers at nursing homes holds a significant role in fulfilling the older adult's needs because they are directly in contact with the residents. These issues are the rationale as to why the older adult caregiver ought to have good knowledge and skill, such as oral health literacy (OHL) and oral cancer awareness, since they are importance determinants for oral health condition.²⁻⁴ Currently, studies in a few countries are limited about OHL, oral cancer awareness, and the older

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adult; there has never been any study regarding the older adult caregiver in the nursing homes.

Based on the description above, the study regarding the related aspect of an oral health condition on the older adults at the nursing homes is necessary for Indonesia, especially for the OHL condition and oral cancer awareness on the caregivers at nursing homes. This study can become a database to make a preventive that suitable to the current situation. Therefore, this study aimed to explore oral health literacy and the knowledge of oral cancer on the older adult caregivers of several nursing homes in Jakarta and analyze the factors that associate with them.

Materials and methods

This study was a cross-sectional study. The data collection was done by using two types of a questionnaire that filled out by the caregivers of the nursing homes. The HeLD-ID questionnaire was used to measure the level of OHL. The HeLD-ID survey had been used on the study in 2015.¹¹ The second questionnaire used to assess the knowledge of oral cancer in terms of risk factors and early signs. The questionnaire was adapted from the study of the oral cancer risk factor in Iowa's adult population. The questionnaire had been tested and validated on the survey regarding the relationship between awareness about oral cancer and the experience of oral cancer examination with sociodemographic factors at the adult population in Jakarta.¹²

All caregivers from six nursing homes under the Jakarta government were asked to participate in the study. The participant was informed consented about the study. The participation was on a voluntary basis. This study was approved by the Research Ethics Committee of the Faculty of Dentistry Universitas Indonesia (No. 75/Ethical Approval/FKGUI/VIII/2018). The collected data was being analyzed with univariate and bivariate statistical analyses using SPSS version 22.

Results

All caregivers from six nursing homes under the government of Jakarta were asked voluntarily to participate in this study. From 196 caregivers of all nursing homes, only 129

caregivers (response rate 65.8%) were able to participate in the study. The sociodemographic data, habits, and history of the dental visit of the participants was shown in Table 1.

Characteristics	n(%)
Gender	
Men	58(45.0)
Female	71(55.0)
Age (years old)	
18 – 24	28(21.7)
25 – 44	69(53.5)
45 – 64	32(24.8)
Level of Education	
Basic	9(7.0)
Middle	70(54.2)
High	50(38.8)
Occupation	
Direct contact	65(50.4)
No direct contact	64(49.6)
Habit	
Smoking	35(27.1)
Betel leaf chewing	11(8.5)
Chewing tobacco	13(10.0)
Drinking alcohol	7(5.4)
Dental visit	
Never	45(34.9)
Within 1 year	26(20.1)
More than 1 year	58(45.0)

Table 1. Sociodemographic characteristic, habits, and history of dental visits of the study participants (N=129).

More female caregivers have participated in the study and most participants were in 25-44 years group. While more than half of the caregivers had middle education level, there were still some caregivers who had basic level of education (7%). The level of contact of the caregivers in this study divided equally. Only a few of caregivers who smoke, betel leaf chewing, chew tobacco or drink alcohol. There were still about 35% of caregivers who had never visited a dentist.

The HeLD-ID was calculated and showed in Table 2. The mean of the total HeLD-ID score was 3.08±0.65. Understanding was a domain with the highest score and Communication was that with lowest score.

Domain	Mean(SD)
Receptivity	3.02(0.77)
Understanding	3.44(0.78)
Support	3.15(0.79)
Economic barrier	3.10(0.87)
Access	3.09(0.88)
Communication	2.98(0.94)
Utilization	3.07(0.82)
Total score	3.08(0.65)

Table 2. HeLD-ID score of the study participants (N=129).

Only 116 of the 129 (89.9%) caregivers had heard of oral cancer. This study only included these 116 participants for further questions about oral cancer risk factors and early signs. In this part of the questionnaire, the participants could answer more than one choices. The correct answers were scored 1 and the results were calculated.

Table 3 showed distribution of caregivers' answers on oral cancer risk factors. The responses of the caregivers were actually quite diverse. Most of them answered smoking as the risk factor of oral cancer. Only very few of them are aware of the role of nutrition as the risk factor of oral cancer (2.9%). A quite high percentage of them who thought that poor oral hygiene is one of oral cancer risk factors. Furthermore, there were about 8% of caregivers who did not know anything about oral cancer risk factors. Only 12.7% them who respond more than one correct answers. Only 12.7% caregivers who answer more than one correct answers.

Table 4 showed the distribution of caregivers' answers on oral cancer risk factors. Of the 116 caregivers who have heard of oral cancer, 31% did not know anything about the early signs of oral cancer. Most of the caregivers answered that non-healing ulcer was the early signs of oral cancer, and only a few knew other signs. Only about 12% of them who could answer more than one correct answer.

Answers	Correct answer n(%)
Risk factors	
Smoking, cigar, pipe	73(35.8)
Chewing tobacco	15(7.3)
Alcohol drinking	22(10.8)
Excessive sun exposure	3(1.4)
Human Papillomavirus	3(1.4)
Genetic	4(1.9)
Poor diet	6(2.9)
UV light	2(0.9)
Non risk factors	
Drugs	0(0)
Excessive coffee drink	0(0)
Hot and spicy food	2(0.9)
Lip/cheek biting	0(0)
Poor oral hygiene	32(15.7)
Do not know	16(7.8)
More than one correct answer	25(12.7)

Table 3. Distribution of answers related to risk factors of oral cancer (n=116).

Answers	Correct answers n(%)
Early signs	
Painless white patch	17(13.2)
Painless red patch	8(6.2)
Non-healing oral ulceration	44(34.1)
Not early signs	
Bleeding in the mouth	7(5.4)
Do not know	40(31.0)
More than 1 correct answer	14(12.0)

Table 4. Distribution answer related to early signs of oral cancer (n=116).

Table 5 summarizes the grouping of caregivers based on their knowledge on risk factors and early signs of oral cancer. Caregivers who could answer more than one correct answer were considered having good knowledge and those who could only answer one correct answer and those who did not know were classified as having poor knowledge.

Oral cancer knowledge	n(%)
Risk factors	
Poor	91(78.4)
Good	25(21.6)
Early signs	
Poor	102(93.8)
Good	14(6.2)

Table 5. The distribution of oral cancer knowledge on risk factors and early signs (n=116).

(Poor= 0-1 correct answer; Good = ≥correct answers)

The association between groups of sociodemographic characteristics, habits, and history of the caregivers' dental visit with the HeLD-ID score was analyzed using Chi square (Table 6). Factors that differed the score of HeLD-ID would have $P < 0.05$. The level of education and history of the caregivers' dental visit were the two factors that significantly differed the HeLD-ID score ($P < 0.05$). Lower HeLD-ID score was seen as the age increased and in caregivers who smoked, however the differences were not statistically significant.

Characteristics	HeLD-ID score Mean(SD)	P
Gender		
Female	3.09(0.62)	0.93
Male	3.07(0.68)	
Age (years old)		
18-24	3.24(0.59)	0.30
25-44	3.02(0.62)	
45-64	3.05(0.75)	
Education		
Basic	2.65(0.82)	0.02*
Middle	3.01(0.65)	
High	3.25(0.58)	
Level of contact with residents		
Direct	3.06(0.66)	0.92
Indirect	3.09(0.65)	
Smoking habit		
Yes	2.91(0.66)	0.05
No	3.14(0.64)	
Alcohol habit		
Yes	3.20(0.40)	0.87
No	3.09(0.62)	
Betel leaf chewing		
Yes	3.27(0.45)	0.46
No	3.18(0.67)	
Tobacco chewing		
Yes	2.85(0.54)	0.08
No	3.10(0.67)	
Dental visit		
Never	2.90(0.63)	0.01*
Within 1 year	3.56(0.56)	
More than 1 year	3.10(0.67)	

Table 6. Association between sociodemography characteristics, habit, history of dental visit with HeLD-ID score.

*statistically significant $P < 0.05$; Chi-square

We further analyze the association between groups of sociodemographic characteristics, habits, and the history of the caregivers' dental visit with level of oral cancer knowledge both risk factors and early signs. We found that there was no factors that had differed the level of oral cancer knowledge of the participants of this study ($P > 0.05$).

Discussion

This study has explored the level of oral health literacy and oral cancer knowledge of older adult caregivers in six nursing homes under the government of Jakarta, Indonesia. This was the first study to report the information regarding oral health literacy and oral cancer knowledge in this specific population. The percentage of older adult population in Indonesia is increasing. Studies have shown the oral health literacy of older adult, was lower compared to the younger population.^{5,8,11,12} While many studies have explored oral health literacy in childrens' caregivers, no studies that explored this issue on older adults caregivers have been reported.¹ Exploring older adult caregivers' oral health literacy is essential to ensure that they could provide service to the individual they are caring for. The long term care of the older adult needs excellent service so that they could be healthy and have a good quality of life.^{14,15}

This study showed that HeLD-ID score was 3.08 lower than that in Australia (3.31)⁹ and students of University of Indonesia (3.3).¹⁶ The results may be related to the level of education of the participants of this study who were in middle level. Also, it may also possibly related to the history of dental visit. The highest domain score was on the Understanding domain (3.44±0.78) and the lowest score was on the Communication domain (2.98±0.94). The result showed that the caregivers may actually have quite good understanding about issues regarding oral health, however there might be some problems in communicating the problems with professionals or in their contact may be with the residents of the nursing home. This is an important issue to be addressed in further program for this certain population. A properly designed program that could enhance the literacy in the communication domain would be good to improve overall score of HeLD-ID.⁵

In this study, the HeLD-ID score was not differentiated by age, gender and occupation. However, it was differentiated by level of education. The conclusion of this result was the higher level of education would made a person easier to search, read and understanding health information to make a decision regarding their own health.¹⁷ The limitation of this study was that the oral health status of the caregivers was not explored. The data on they oral health status and

the relationship with the level of oral health literacy would enrich the results of this study.²

This study showed that the majority of caregivers of the older adult residents of nursing homes under the Jakarta government had poor knowledge on risk factors and early signs of oral cancer. There were still some caregivers who had never heard of oral cancer. Some of them also did not know that the main risk factors of oral cancer. This also resulted in a lower percentage of caregivers who knew the early signs of oral cancer. Smoking was still the most commonly answered risk factors of oral cancer. However, some other important risk factors such as alcohol drinking, tobacco chewing, and low diet of fruit and vegetables were not answers correctly by the participants. The results were similar to other studies conducted in the general population in other parts of the world.¹⁸⁻²¹

The possible factors related to a low level of knowledge on oral cancer may be the lack of adequate oral health education programs related to the issue.²² A continuous campaign on the burden of oral cancer should be designed using digital methods or social media. Some measures have been done by many organizations to increase public awareness of oral cancer.²³

Although the trend of oral cancer incidence in older adults is not the same as that of previous years, concerns still have to be taken in the care of older adults.^{24,25} A multicenter study in Thailand showed that the mean age at diagnosis was still around 58.37±15.7 years.²⁶ Improving knowledge on oral cancer risk factors would help change the behaviors related to risk factors, therefore decreasing the incidence of oral cancer.²⁷ Furthermore, good knowledge of early signs and symptoms of oral cancer would reduce patient delays in diagnosis of oral cancer, therefore, increase the chance of detection of the early lesion and finally improving the prognosis of the disease.²⁷

Conclusions

Improving OHL and oral cancer awareness levels on the caregiver of older adults at the nursing home is an important issue. The effort can be made by counseling sessions regarding oral and dental health, also oral cancer awareness.

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Declaration of Interest

The authors report no conflict of interest.

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