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THE RELATIONSHIP BETWEEN AWARENESS AND KNOWLEDGE LEVEL OF CLINICAL DENTAL STUDENTS ABOUT ORAL CANCER DISEASE

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ABSTRACT

Background: Oral cancer is the sixth most common type of cancer with two out of three cases occurring in developing countries. As clinical dental students, knowledge and awareness about oral cancer should also be improved with the aim of helping them as future dentists to be more ready to act immediately in prevention phase and early diagnosis of oral cancer. **Objective:** This study aims to analyze the relationship between the level of knowledge and the level of awareness of dental students about oral cancer. **Methods:** An observational analytic study with a cross sectional study design. A total of 91 clinical dental students participated in this study. Oral cancer awareness and knowledge level were measured using a pre-validated questionnaire. Spearman's rho correlation test was used to determine the association between oral cancer awareness and knowledge level of clinical dental students. **Results:** Out of 91 clinical dental students, 61 (67%) students got excellent-graded awareness and 57 (62,6%) students got good-graded knowledge. Spearman rho correlation test showed oral cancer awareness were significantly associated (p=0,007) with oral cancer knowledge level. Significant positive linear correlations (r=0,279) between oral cancer awareness and knowledge level were also observed from the study results. **Conclusion:** Clinical dental students' oral cancer awareness and knowledge level are significantly associated.
Keywords: *Oral cancer, Awareness, Knowledge, Clinical dental students*

INTRODUCTION

Oral disease is a common health problem as the prevalence increases in many low- and middle-income countries.[1] Globally, the most common oral diseases include caries, periodontal disease, tooth loss and oral cancer.[2] Most of the global deaths are caused by Non Communicable Diseases (NCD) or non-communicable diseases, also known as chronic diseases, tend to be long lasting and result from a combination of genetic, physiological, environmental and behavioral factors with cancer as its main type.[3,4] Oral cancer is the 6th most common type of cancer with two out of three cases occurring in developing countries.[5]

Dentists are usually the first professionals to treat diseases of the oral cavity, this makes them play a role in conducting opportunistic screening by offering their patients an additional examination or test as part of routine medical examinations.[6,7] Dentists can play an important role not only in prevention but also in early detection of oral cancer because they are trained and competent enough to recognize any abnormal changes of the oral cavity.[8,9] The preventive role of dentists hinges on the fact that they have the greatest chance of identifying asymptomatic lesions through routine examinations and to diagnose the disease before it is revealed. Therefore, dentist can play a major role in the prevention and early detection of oral cancer.[10,11]

In the context of dentistry, students must go through 2 kinds of stages, namely the preclinical stage and the clinical stage. At the clinical stage, students are expected to demonstrate various competencies simultaneously, including various skills competencies, basic knowledge, professionalism and ethical behavior.[12] As clinical dental students, knowledge and awareness about oral cancer should also be increased with the aim of helping prospective dentists to be more ready to act immediately in the phase of prevention and early diagnosis of oral cancer.[13] Awareness and knowledge level can be measured using a questionnaire.[14–16] The objective of the present study is to analyze the relationship between the level of knowledge and the level of awareness of dental students about oral cancer.

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METHODS

The present study was approved by the Research Ethics Committee of Medical Faculty in Diponegoro University, Semarang. This is an observational analytic study with cross sectional design. Samples were clinical dental students from Universitas Gadjah Mada, Universitas Airlangga, Universitas Indonesia, and Universitas Padjadjaran who was willing to become the research respondents by agreeing the informed consent given and have at least taken the clinical program for 1 semester and/or have passed the Oral Disease stage in the clinical program.

Oral cancer awareness and knowledge level were measured using a pre-validated questionnaire. The data were analyzed using a statistical analysis software. Data analysis using spearman rho correlation test with a significance level <0.01. Research ethics was obtained from *Komisi Etik Penelitian Kesehatan* (KEPK) FK UNDIP (No. 254/EC/KEPK/FK-UNDIP/XI/2020).

RESULT

This research was conducted from November 2020 to January 2021. Sample was achieved using consecutive sampling. The data used are primary data. A total of 91 respondents who met the inclusion criteria were willing to be the study sample after reading and signing the informed consent provided. Based on the informed consent sheet, it is written that the researcher guarantees the confidentiality of respondents' identity. Identities such as the university origin are displayed randomly in the form of groups A, B, C, and D where each group represents the respondents' university origin variable. The characteristics of 91 respondents are shown in table 1.

Table 1. Respondents characteristics (n=91)

Variable	n	(%)
University		
A	30	(33,0)
B	28	(30,8)
C	20	(22,0)
D	13	(14,3)
Batch		
2013	9	(9,9)
2014	34	(37,4)
2015	22	(24,2)
2016	26	(28,6)
Gender		
Male	18	(19,8)
Female	73	(80,2)

Research subjects consisted of 91 respondents with 30 people (33.0%) from university A, 28 (30.8%) from B (30.8%), 20 (22.0%) from C, and D 13 people (14.3%). Based on the largest number of batches in this study, 34 people (37.4%) were from 2014. The gender of most respondents in this study were women as many as 73 people (80.2%) whereas men were 18 people (19.8%).

Awareness of 91 respondents can be seen from table 2. Among 91 respondents, 61 respondents got an excellent score (67.0%), 28 respondents got a good score (30.8%), 2 respondents got a moderate score (2.2%), and none of the respondents got a poor score (0%). For the knowledge level, 32 respondents got an excellent score (35.2%), 57 respondents got a good score (62.6%), none of the respondents got a moderate score (0%), and 2 respondents got a poor score (2 , 2%).

Table 2. Clinical dental students' awareness and knowledge level about oral cancer disease

Variable	n	(%)
Awareness		
Excellent	61	(67,0)
Good	28	(30,8)
Moderate	202	(2,2)
Poor	0	(0)
Total	91	(100)
Knowledge		
Excellent	32	(35,2)
Good	57	(62,6)
Moderate	0	(0)
Poor	2	(2,2)
Total	91	(100)

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Table 3. Distribution of awareness according to university, batch, and gender

Variable	Awareness			
	Excellent	Good	Moderate	Poor
University				
A	18	12	0	0
B	24	2	2	0
C	14	6	0	0
D	5	8	0	0
Batch				
2013	5	4	0	0
2014	22	12	0	0
2015	16	4	2	0
2016	18	8	0	0
Gender				
Male	8	10	0	0
Female	53	18	2	0

Table 3 shows distribution of awareness according to university, batch, and gender. From table 3, excellent scores are mostly achieved in university B with total of 24 respondents, batch 2014 variable with total of 22 respondents, and the female gender variable as many as 53 respondents.

Table 4 shows distribution of knowledge level according to university, batch, and gender. From table 4, excellent scores are mostly achieved in university A with total of 16 respondents, batch 2014 variable with total of 16 respondents, and the female gender variable as many as 26 respondents.

Table 4. Distribution of knowledge level according to university, batch, and gender

Variable	Knowledge			
	Excellent	Good	Moderate	Poor
University				
A	16	14	0	0
B	6	20	0	2
C	8	12	0	0
D	2	11	0	0
Batch				
2013	2	7	0	0
2014	16	18	0	0
2015	4	16	0	2
2016	10	16	0	0
Gender				
Male	6	12	0	0
Female	26	45	0	2

The relationship between awareness and knowledge level of clinical dental students about oral cancer disease is shown in table 5 below.

Table 5. Spearman rho correlation test results

Variable	n	*P-value*	*r coefficient*
Awareness	91	0,007	0,279
Knowledge	91		

Based on table 5, a significance value of 0.007 was obtained where p <0.01, which concludes that there is a statistically significant relationship between clinical dental students' awareness and knowledge variables about oral cancer. The obtained correlation coefficient is 0.279 which indicates that the level of correlation strength between the two variables has a sufficient relationship. The correlation coefficient is positive, (r=0.279) indicates the relationship between the two variables is unidirectional.

DISCUSSION

The majority of clinical dental students scored excellent in awareness with 61 (67%) respondents got an excellent category score, while the knowledge of most clinical dental students are good with 57 (62,6%) respondents got a good category score.

The results of this study coincides with the research conducted by Sandeep, et al, where the average score of oral cancer among dentistry students is high which indicates very good awareness.[17] The research conducted by Jnaneswar, et al and Sallam, et

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al shows that the overall knowledge score of dental students and dentists are classified as good which is also in line with this research.[18,19]

From the study results, many respondents were excellently-aware of oral cancer but not many respondents had excellent knowledge about oral cancer. The results of this study are in line with research conducted by Shahabudin, et al and Kumar, et al, which stated that although the majority of respondents' awareness about oral cancer is relatively good, knowledge about signs and symptoms and risk factors for oral cancer is still lacking.[20,21]

Knowledge is the result of knowing that occurs through sensory processes, especially the eyes and ears. Knowledge generally is a very important domain for the formation of open behavior and a knowledge-based behavior usually last longer. In the process of adopting behavior according to Notoatmodjo, the process begins with awareness where the individual is aware of the stimulus.[22] By sorting from the smallest to largest scale, a behavior is formed from awareness, knowledge, and only then the behavior can be adopted. This statement supports the results of this research which shows that many people are excellently-aware but not many people had excellent knowledge about oral cancer.

Based on the Spearman rho correlation test for awareness and knowledge level of clinical dental students about oral cancer disease, the *p* value was obtained <0.01 so that the hypothesis was accepted. Thus, it was found that there was a statistically significant relationship between awareness and knowledge level of clinical dental students about oral cancer. Judging from the correlation coefficient or *r* value of 0.279 which indicates the level of strength of the correlation between the two variables has a sufficient relationship and shows a positive correlation, which means that the higher the awareness, the higher the level of knowledge of clinical dental students about oral cancer. The results of this study are in line with the research conducted by Awan et al, so it can be concluded that dental college students who have good knowledge about oral cancer will be more aware and vigilant in carrying out their examinations.[23]

As stated before, awareness and knowledge level are found to be interrelated and have a significant relationship. A behavior is formed from awareness, knowledge, and in the end, this behavior can be adopted so that it can be accepted that awareness and knowledge have a significant relationship. From the above statement it can be understood that in the process of adopting a behavior, good knowledge and awareness are needed. Good knowledge will help maintain the adopted behavior to last longer. This is because the first step in the formation of behavior is knowledge and the first step of knowledge is awareness. A knowledge begins with awareness so that to have good knowledge it also requires good awareness. This statement supports this research's Spearman rho correlation result in which the relationship between the two variables is unidirectional.

Raising awareness and early diagnosis can significantly improve oral cancer control. To achieve this, it is important to have sufficient knowledge and awareness for early detection and diagnosis of oral cancer. Promoting dental student learning on oral cancer topics and advanced training programs will enable dental students to be able to carry out procedures for early diagnosis and prevention of oral cancer. Therefore, dental students can guide their future patients about risk factors and early signs and symptoms of oral cancer to help them develop a healthier lifestyle.

Data collection from this research was done by online. By being done online, researchers cannot observe and engage with research subjects directly. The limitation of this study is the difficulty in controlling whether the respondents fill out the questionnaire honestly or seriously. Another limitation found in this study is the number of male and female respondents which showed contrasting differences. In the results of the study, it was found that the characteristics of the majority of research subjects were female which could affect the results of the study.

CONCLUSION

Clinical dental students' oral cancer awareness and knowledge level are significantly associated. It is necessary to conduct further research with a larger sample and a more general population to reduce bias and facilitate the data cleaning process without

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reducing the research respondents in large numbers. Additional features for online surveys to help control respondents' honesty and seriousness such as a timer feature to calculate the length of working time and working time limits might be useful if it is to carry out further research.

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Conflicts of interest
There is no conflict of interest. No specific funding was provided for this study.

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