Knowledge of Human Papilloma Virus among Female Dentists in Jakarta, Indonesia

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Abstract

Human papilloma virus (HPV), especially types 16 and 18, is thought to increase the risk of head and neck cancer. Although sexual intercourse is still the main mode of transmission, direct contact with body fluids has been reported as a mode of HPV transmission. Since HPV16 and 18 can be found in saliva, knowledge among female dentists about the risk of HPV needs to be evaluated. The aim of this study was to assess the general knowledge of HPV among female dentists in Jakarta. A cross sectional study was conducted on 156 female dentists at the Faculty of Dentistry, Universitas Indonesia using a 10-item questionnaire about HPV. 152 questionnaires (98%) were completely filled out and analyzed. The median age of the respondents was 29 (min:25–max:44) and the median score was 7 (min:3–max:10). In this study, 99.3% of respondents had heard about HPV and 94.1% knew that HPV could cause cervical cancer. Only 46.7% knew that HPV can be detected in saliva. Additional sources of HPV information need to be given to increase HPV awareness among dentists.

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Introduction

High Risk Human Papillomavirus (HR-HPV) is known to cause cervical cancer and is also suggested to cause anogenital cancer (cancers of the anus, vulva, vagina, and penis) and head and neck cancers (commonly oropharynx cancers).[1,2] High Risk Human Papillomavirus types 16 and 18 are responsible for most HPV-associated oropharyngeal cancer. They also increasing the severity of oropharyngeal cancers triggered by cigarettes and alcohol.[3,4]

Based on previous studies, HPV 16 and 18 were detected not only in the patients' saliva of the head and cancers but also in healthy individuals.[5–7] The HPV types 16 and 18 in saliva were considered as an occupational hazard for dentists due to frequent contact with patients' saliva.[8]

Therefore, the implementation of hand hygiene, self-protective equipment, such as gloves, masks, and goggles, are commonly used to avoid the transmission of infectious agents from patients' saliva to dentists.[9]

Since the self-protective equipment is used daily in the dental practice, we conducted this study to determine the level of dentists' knowledge about the risks of HPV transmission from patients saliva.

Methods

Respondents in this study were female residents of the Faculty of Dentistry, Universitas Indonesia (UI). The residents were undergraduates from different dental schools who were attending one of the seven specialist departments in the Faculty of Dentistry, UI. The respondents werealso been practicing at the Dental Hospital Faculty of Dentistry, UI.

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A cross sectional study was conducted among all 156 respondents. The data were collected using a self-administered questionnaire consisting often statements about knowledge of HPV. The face validity of the questionnaire was rated by sixteen repondents and the questionnaire were revised as a result of their comments.

Statements in the questionnaire were answered with "Yes" or "No". Each correct answer scored 1 and each wrong answer scored 0. All the statements in the questionnaire had to be answered. The final score was determined by adding all the scores for each questions.

Results

From a total of 156 residents, 155 respondents returned the questionnaire (response rate 97.4%). One respondent from the Oral and Maxillofacial Surgery could not join this research due to semester break. The history of HPV vaccination was done by 82 respondents (52.9%)

Table 1. Distribution of Specialties of the Respondents.

Departments	Total Potential Respondents	Total Actual Respondents
	N(%)	n(%)
	156(100)	155(100)
Conservation Dentistry	30(19.2)	30(19.3)
Oral and Maxillofacial Surgery	16(10.2)	15(9.6)
Oral Medicine	13(8.3)	13(8.3)
Orthodontics	30(19.2)	30(19.3)
Paediatric Dentistry	32(20.5)	32(20.6)
Periodontics	11(7.1)	11(7.1)
Prosthodontics	24(15.4)	24(15.5)

Of the 155 respondents, only 152 (98.0%) fully completed the questionnaire. Their responses were analyzed statistically using Microsoft Excel 2003 and SPSS version 23.0 softwares. The descriptive data of respondents' ages were analyzed for normality using the Kolmogorov – Smirnovtest. The youngest respondent was 25 years old, the oldest was 44 yearsold, and the median age was 29 years (min: 25– max: 44).

Table 2. Socio demographic profile of the Respondents (n=152)*

Variable	Total	%	Median (Min–Max)
Age (Years)			
21–30	89	58.6	
31–40	60	39.5	29 (25–44)
41–50	3	2.0	
Marital Status			
Single	59	38.8	
Married	90	59.2	
Divorced/Widowed	3	1.9	
Dental Undergraduate Institution			
Universitas Airlangga	12	7.9	
Universitas Gadjah Mada	5	3.3	
Universitas Hang Tuah	1	0.6	
Universitas Hasanuddin	1	0.6	
Universitas Indonesia	89	56.6	
Universitas Jember	2	1.3	
Universitas Prof. Dr. Moestopo	5	3.3	
Universitas Padjadjaran	16	10.5	
Universitas Sumatera Utara	4	2.6	
Universitas Trisakti	18	11.8	
Answer not available	2	1.3	

*From 155 questionnaire, 152 questionnaire were completely filled. This descriptive data were taken from 152 respondents who filled the questionnaire completely.

Table 3. HPV Knowledge of the Respondents.

	Respondents	%
Heard about HPV information	151	99.3
Sources of HPV information:		
Lectures	77	50.6
Health articles	76	50.0
HPV transmission via sexual intercourse	138	90.8
HPV vaccination to prevent transmission	136	89.5
HR-HPV as the cause of cervical cancer	102	67.1

From the results of the questionnaire, we obtained10 as the highest score and 3 as the lowest score, with a median of 7 (min: 3–max: 10).

Table 4.HPV Opinions of the Respondents

No.	Statements	Expected answer	Correct answer	
			Total	%
1	HPV can cause cervical cancer.	Yes	143	94.1
2	HPV can cause oral cancer.	Yes	78	51.3
3	HPV can exist in the saliva.	Yes	71	46.7
4	Vaccination is best injected before the first sexual intercourse.	Yes	142	93.4
5	HPV vaccination should be done after marriage.	No	116	76.3
6	Vaccination is best administered after being infected by HPV.	No	142	93.4
7	Vaccination is best administered when having sex with multiple partners.	Yes	104	68.4
8	Women are recommended with HPV vaccination.	Yes	151	99.3
9	Men are recommended with HPV vaccination.	Yes	68	44.7
10	Providing information about head and neck cancer to patients.	Yes	25	16.4

Discussion

Variations in residents' specializations may play an important role regarding the HPV knowledge result. Only 17.9% of the residents (those from the Oral Surgery and Oral Medicine departments) had a thorough theoretical grounding in HPV-induced oral cancers. A previous study shows that people with previous self-experience, familiy or friends' history of HPV infection seek information on HPV.[10] In our study, the residents of the Oral Surgery and Oral Medicine departments appeared to have seen manifestations of HPV lesions in basic daily practice. For this reason, this groups of residents learn HPV infection thoroughly. The others were therefore not interested in seeking more information about HPV, and this probably accounts for the similar results in both studies.

In our study, 99.3% of respondents had previously heard about HPV. This result is similiar to the study of Onowhakpor et al., in which more than half of the respondents had previously heard about HPV.[11] This similarity may be due to the fact that the respondents in both studies had medical backgrounds (medical and dental students participated in the previous study). The respondents in both studies received information about HPV from medical lectures (50.6% in the present study and 78.7% in the study of Onowhakpor et al.).

Our study is contrary to the study of Khan et al., in which 57% of respondents had previously heard about HPV.[12]

This is because their study surveyed non-medical students who had not received HPV lectures as part of their curriculum of study.

Sexual intercourse as the main mode of HPV transmission was known by 90.8% of respondents. This result differs from the study of Mehta et al., in which only 38% of respondents knew about sexual intercourse as the main mode HPV transmission.[13] This discrepancy might be due to differentation of the HPV vaccine awareness level. From Mehta et al. study, it was suggested that the respondents think that HPV infection usually without any symptoms and the infection healed by itself without treatment.[13]

In our study, 41.3% of respondents had received HPV vaccination as a premarital preparation. This is why 76.3% disagreed with the statement" HPV vaccination should be done after marriage". This supports the claim that the respondents inour study knew that sexual intercourseis the main cause of HPV transmission. That is also the reason why 93.4% of respondents in this study agreed that vaccination should be carried out before first sexual intercourse. It is known that Indonesian culture does not allow sexual intercourse before marriage.

From the explanation above, it appears that our respondents knew about vaccination to prevent HPV (89.5%), although only 67.1% knew HR-HPV as causative of cervical cancer. The statement "HPV can cause cervical cancer" was

answer correctly by 94.1% of respondents. This is due to the HPV lecture in the medical curriculum.In the study of Mehta et al., the percentage was even higher (96%).[13]

Only 51.3% of respondents knew that HPV can cause oral cancer. This is because some respondents had limited access to the latest information about HPV. We know that research into HPV started just a few decades ago. Our study contradicts the study of Osazuwa and Tutlam, which found that 63% of respondents knew about the relationship between HPV and oral cancer. That study involved non-medical students, but the respondents' sexual behaviour induced them to seek information about the relationship between sexual behaviour and oral cancer. Their sexual behaviour can be seen from their descriptive data: 86% of respondents had previously had sexual contact, but only 13% were already married.[14]

Low awareness about HPV-associated oral cancer was seen in the statement "HPV can exist in the saliva", answered correctly by 46.7% of respondents. It is possible that the respondents obtained this information from reading the informed consent sheets provided to the respondents before joinning this study. It seems that HPV vaccination was known only for women. In our study, 99.3% of respondents agreed that HPV vaccination was recommendedfor women, but only 44.7% of respondents agreed that HPV vaccination was recommended for men.

The indications of HPV vaccination is also for the bisexual people.[15,16] The statements of Vaccination is best administered when having sexual intercourse with multiple partners is answered correctly by 68.4% of respondents. Since HPV infection was transmitted via sexual intercourse, it was suggested that the HPV vaccination was done before the infection itself. The statement about HPV vaccination is best administered after being infected by HPV was disagree by 93.4% of respondents.

Poor oral cancer awareness can also be seen from the statement "Providing information about head and neck cancer to patients (Yes)", which was answered correctly by only 16.4% of respondents. This result shows that information about oral cancer has not been delivered properly by dentists in accordance with their professional obligation. This is evident from the statement "HPV can cause oral cancer (Yes)", which was answered correctly by only 51.3% of respondents.

Conclusion

It is important to have a good knowledge of HPV in order to be aware about its possibility transmission via patients' saliva, to educate patients about the role of HPV in several types of oral lesions and in HPV-associated head and neck cancers. Knowledge of HPV could be gathered from the dental curriculum or from regular seminars held by the Dental Hospital for increasing HPV awareness.

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References

1. Mishra A, Meherotra R. Head and Neck Cancers: Global Burden and Regional Trends in India. Asian Pac J Cancer Prev. 2014;15(2):537-50.
2. Doorbar J, Egawa N, Griffin H, Kranjec C, Murakami I. Human Papillomavirus Molecular Biology and Disease Association. Rev Med Virol. 2015;25(Suppl 1):2-23.
3. Adham M, Kurniawan AN, Muhtadi AI, et al. Nasopharyngeal Carcinoma in indonesia: Epidemiology, Incidence, Signs, and Symptoms at Presentation. Chin J Cancer. 2012;31(4):185-96.
4. Cubie HA. Diseases Associated with Human Papillomavirus Infection. Virology. 2013;445(1-2):21-34.
5. Koslabova E, Hamsikova E, Salakova M, et al. Markers Of HPV Infection and Survival in Patients with Head and Neck Tumors.Int J Cancer. 2013;133(8):1832-9.
6. Turner DO, Williams-Cocks SJ, Bullen R, et al. High-Risk Human Papillomavirus (HPV) Screening and Detection in Healthy Patient Saliva Samples: A Pilot Study. BMC Oral Health. 2011;11:28.
7. Wimardhani YS, Sasanti H, Wardhany II, et al. Saliva-Based Screening of High-Risk Human Papillomavirus Strains: Detection in Female Indonesian and Thai Dental Students. Asian Pacific J Cancer Prev. 2015;16(13):5525-9.
8. Mehta A, Gupta M, Upadhyaya N. Status of Occupational Hazards and Their Prevention among Dental Professionals in Chandigarh, India: A Comprehensive Questionnaire Survey. Dent Res J (Isfahan). 2013;10(4):446-51.
9. Ayatollahi J, Ayatollahi F, Ardekani AM, et al. Occupational Hazards to Dental Staff. Dent Res J (Isfahan). 2012;9(1) :2-7.
10. Rama CH, Villa LL, Pagliusi S, et al. Awareness and Knowledge of HPV, Cervical Cancer, and Vaccines in Young Women After First Delivery in Sao Paulo, Brazil--A Cross-Sectional Study. BMC Women's Health. 2010;10:35.

11. Onowhakpor AO, Omuemu VO, Osagie OL, Odili CG. Human Papilloma Virus Vaccination : Knowledge,Attitude and Uptake among Female Medical and Dental Students in a Tertiary Institution. Journal of Community Medicine and Primary Health Care. 2016;28(2):101-8.
12. Khan TM, Buksh MA, Rehman IU, Saleem A. Knowledge, Attitudes, and Perception towards Human Papillomavirus among University Students in Pakistan. Papillomavirus Research. 2016;2:122-7.
13. Mehta S, Rajaram S, Goel G, Goel N. Awareness about Human Papilloma Virus and its Vaccine among Medical Students. Indian J Community Med. 2013;38(2):92-4.
14. Osazuwa-Peters N, Tutlam NT. Knowledge and Risk Perception of Oral Cavity and Oropharyngeal Cancer Among Non-Medical University Students. J Otolaryngol Head Neck Surg. 2016;45:5.
15. Saslow D, Andrews KS, Manassaram-baptiste D, et al. Human Papillomavirus Vaccination Guideline Update : American Cancer Society Guideline Endorsement. CA Cancer J Clin. 2016;66(5):375-85.
16. Soares GR, Vieira R da R, Pellizzer EP, Miyahara GI. Indications for the HPV Vaccine in Adolescents: A Review of the Literature. J Infect Public Health. 2015;8(2):105-16.