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Teacher's Preferences to Receive Oral Health Information Using Internet

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Abstract

Objective: To identify teacher's preferences using internet to receive oral health information (OHI).

Materials and methods: An adapted cross-sectional survey was held from September to October of 2019 in 14 junior high schools in Jakarta, Indonesia. The questionnaire consisted of information on demography, oral health data, and using internet to obtain OHI. The dependent variable was the frequency of searching for such information in that manner.

Results: The survey achieved a 99% (213/215) response rate with Google (85.4%) and YouTube (43.2%) being the sites most used for OHI searches. Google was mostly used to gain information on teeth whitening and bad breath. Whereas YouTube was mostly used for oral lesions information searches.

Conclusions: Most teachers used internet to obtain useful information related to oral health. This research is expected to be useful for health service providers furnishing health information through socially common media.

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Keywords: Preference, social media, teacher, oral health information.

Introduction

Adolescence, a period when a person is no longer a child yet also not an adult, changes an individual's physical and psychological stature as well as their perspectives, relationships, and interactions ranging from their families to their wider ones (1). Poor oral hygiene can be related to low life quality, affecting teenager functional status, social prosperity, and emotions as well as school performance (2).

Along with technological developments, extensive health issue information can be obtained online (3). This simplicity can enhance health quality due to sustainable information from internet while encouraging the adoption of healthy behavior on a broad scale (4). Previous research found that teenagers often use social media (SM) as a platform to gain oral health information (OHI), making them comfortable with the process of finding OHI (5). One of the advantages of internet is that it may enhance collaboration and information transfer among their users (4). Internet simplicity may permit healthcare providers to give healthcare-related information, especially on oral health (6).

Healthy lifestyle and academic achievement are reciprocal and synergistic as student health conditions contribute to scholastic learning activity and academic achievement (7). Schools also have an important impact on high quality student health by providing health promotion activities (8,9). Schools and teachers are health promotion gatekeepers given a goal of student prosperity (10). Numerous positive impacts on health promotion using the internet were described (11,12). Nonetheless the use of internet to obtain OHI in Indonesia is not yet explored. This study was conducted to observe junior high school (JHS) teachers that use

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internet to search for OHI.

Materials and methods

A cross-sectional questionnaire-based study was held at 14 JHSs in Jakarta from September to October of 2019. Schools were selected randomly. Ethical approval was obtained from the Research Ethics Committee of the Faculty of Dentistry, Universitas Indonesia. The sample size of 195 was calculated based on assumptions of a 5% margin of error, a 95% confidence interval (CI), and that 85% of teachers prefer to use internet to search for OHI. To compensate for potential non-response, the sample size was increased by 10% to 215. Inclusion criteria required teachers to teach JHS in Jakarta.

The study's adapted questionnaire was back translated into Indonesian before being translated back to its original language. This study's questionnaire was designed to collect demographic information and assess the frequency of internet searches for OHI. Demographic information included participant gender, highest education level attained, occupational status, and age. Of the 31 questions, 10 were asked regarding oral health, 14 were asked to assess habitual use of internet and SM to search for OHI, and 22 were adapted from previous research (13). A pilot study was conducted on 10 teachers for face validity of the questionnaire. Words that were difficult to understand were modified to improve clarity and prevent ambiguity. The data collected from the questionnaire has been analyzed using IBM SPSS 23. Chi-squared tests were performed to analyze relationships between respondent demographical data and self-perceived oral health, considering the frequency of using Google and YouTube as the most visited websites when seeking OHI. A 5% statistical significance level was used.

Results

The response rate in this study was 99% (213/215). Most respondents (61.0%) were female, with 86.9% of the respondents had bachelor's degrees (Table 1). Among the respondents, most used SM to obtain OHI. Most respondents used SM as a means of communication and seeking information, while some also reported using SM for shopping and playing (Table 2). Respondents preferred the Internet as their source of dental and oral health information. The sites most widely used for OHI searches were Google, YouTube, Facebook, Instagram, and Twitter, respectively.

Table 3 shows the results of chi-squared analysis between variables and the frequency respondents used Google and YouTube to locate OHI. Seeking

information about bad breath and how to whiten teeth was significantly related to the tendency of respondents to use Google. Seeking information about oral ulcers was significantly correlated with using YouTube.

Table 1. Demographical data of respondent.

Variables	n (%)
Gender	
Male	83 (39.0)
Female	130 (61.0)
School Locations East Jakarta North Jakarta	53 (24.9)
South Jakarta West	31 (14.6)
Jakarta	48 (22.5)
Central Jakarta	62 (29.1)
	19 (8.9)
Education	
≤ Bachelor	185 (86.9)
> Bachelor	28 (13.1)

Table 2. JHS teacher distribution of Internet and SM usage regarding OHI searches.

Variables	n (%)
Purpose for using the Internet	
For communication	182 (85.4)
For information	170 (79.8)
For news	130 (61.5)
For entertainment	112 (52.6)
For education	92 (43.2)
For shopping	73 (34.3)
For playing	51 (23.9)
Time of SM use	
Night	156 (73.2)
Afternoon	126 (59.2)
Morning	74 (34.7)
Mode of accessing the Internet	
Hand phone	201 (94.4)
Laptop	83 (39.0)
Computer	36 (16.9)
Tablet/iPad	14 (6.6)
Sources of OHI	
Internet	146 (68.5)
Dentist	143 (67.1)
Television	47 (22.1)

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Family	32 (15.0)	OHI topics that were searched for		
Friend	31 (14.6)	Dental caries	143 (67.1)	
Printed media	24 (11.3)	Dental scaling	128 (60.1)	
Radio	9 (4.2)	Oral malodor	106 (49.8)	
Pharmacist	0 (0.0)	Aphthous Stomatitis	82 (38.5)	
Use SM for OHI		Bleaching	65 (30.5)	
Yes	200 (93.9)	Teeth mobility	33 (15.5)	
No	13 (6.1)	Orthodontic appliances	23 (10.8)	
Websites used to search for OHI		Dental prosthesis	23 (10.8)	
Google	182 (85.4)	Dental trauma	13 (6.1)	
YouTube	92 (43.2)	Interested in app-based dental		
Facebook	30 (14.1)	intervention?	173 (81.2)	
Instagram	35 (16.4)	Yes	40 (18.8)	
Twitter	4 (1.9)	No		
Doesn't use	13 (6.1)			
Messaging application				
WhatsApp	206 (96.7)			
SMS	5 (2.3)			
Line	2 (0.9)			
Frequency of Internet searches for				
OHI	158 (74.2)			
Always, Often, Sometimes	55 (25.8)			
Rarely, Never				
Keywords used for OHI Internet				
searches	129 (60.6)			
Medication or treatment	89 (41.8)			
Cause of disease	84 (39.4)			
Prevention	50 (23.5)			
Cause of disease	14 (6.6)			
Doesn't seek				
Is it easy to obtain OHI from the				
Internet?	196 (92.0)			
Yes	17 (8.0)			
No				
Want to obtain OHI from SM?				
Yes, from YouTube	134 (62.9)			
Yes, from Facebook	80 (37.6)			
Yes, from Instagram	52 (24.4)			
Yes, from Google	10 (4.7)			
Yes, from Twitter	9 (4.2)			
No	15 (7.0)			

Discussion

This study found that teachers prefer to use Google and YouTube when searching for OHI, with Google being used the most. This is consistent with previous research that indicated Google is the most popular search engine and is being use for health information searches (14). Google, as a search engine, has made it easy for people to find information. Google does not refer directly word search answers, but provides answers related to words searched to save time for its users (15). Searching for information with Google also provides fewer advertisements than other search engines (16). Beyond Google, YouTube was also popular between respondents. As one of the largest SM platforms, YouTube provides information about the pathogenesis, diagnosis, treatment, and prevention of various health conditions through video (17). A previous literature review has found that most videos uploaded to YouTube are based on personal experience, causing many people to prefer YouTube (18).

Information that significantly correlates with respondent preference for Google is that on teeth whitening and bad breath, which can be explained due to both subjects being related to oral health related quality of life. Tooth whitening is based on personal dissatisfaction with teeth color, which is not directly related to life-threatening pain but affects a person's psychological and social functioning (19). Unesthetic tooth color can affect self-image and self-esteem, affecting social interaction (20). Information about bad breath also significantly correlated with respondent preference for Google. As with teeth color, bad breath is an indicator of personal quality of life. Quality of life is

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Variables	Google			YouTube		
Independent	n (%)	p-value	OR (95% CI)	n (%)	p-value	OR (95% CI)
Gender						
Men	75(90.4)	0.154	1.098 (0.987–1.221)	35(42.2%)	0.921	0.962 (0.700–1.322)
Women	107(82.3)			57(43.8%)		
Education						
≤ Bachelor	156(84.3)	0.365	0.908 (0.805–1.024)	82(44.3%)	0.514	1.241 (0.736–2.093)
> Bachelor	26(92.9)			10(35.7%)		
Routine visits to the dentist						
Yes	14(93.3)	0.604	0.909 (0.784–1.054)	88(44.4)	0.285	1.667 (0.710–3.913)
No	168(84.8)			4(26.7)		
Tobacco use						
Yes	49(89.1)	0.504	1.058 (0.944–1.187)	21(38.2)	0.476	0.850 (0.582–1.240)
No	133(84.2)			71(44.9)		
Healthy teeth						
No	87(82.1)	0.232	0.924 (0.827–1.034)	43(40.6)	0.527	0.886 (0.650–1.207)
Yes	95(88.8)			49(45.8)		
Healthy gums						
No	56(83.4)	0.504	0.948 (0.835–1.076)	27(39.7)	0.579	0.886 (0.628–1.250)
Yes	126(86.9)			65(44.8)		
Satisfaction with teeth color						
No	117(87.3)	0.421	1.061 (0.940–1.198)	62(46.3)	0.300	1.218 (0.871–1.705)
Yes	65(82.3)			30(38.0)		
Neat teeth						
No	114(85.1)	1.000	0.988 (0.881–1.107)	53(39.6)	0.210	0.801 (0.590–1.088)
Yes	68(86.1)			39(49.4)		
Bad breath						
Yes	67(88.2)	0.527	1.050 (0.941–1.173)	36(47.4)	0.440	1.159 (0.849–1.582)
No	115(83.9)			56(40.9)		
Dental caries						
No	56(80.0)	0.171	0.908 (0.796–1.036)	26(37.1)	0.271	0.805 (0.566–1.145)
Yes	126(88.1)			66(46.2)		
Scaling						
No	70(82.4)	0.398	0.941 (0.836–1.059)	30(35.3)	0.079	0.729 (0.519–1.023)
Yes	112(87.5)			62(48.5)		
Orthodontic						
No	161(84.7)	0.596	0.928 (0.807–1.067)	81(42.6)	0.801	0.891 (0.564–1.409)
Yes	21(91.3)			11(57.8)		
Dental trauma						
No	169(84.5)	0.259	0.845 (0.796–0.897)	87(43.5)	0.947	1.131 (0.559–2.290)
Yes	13(100)			5(38.5)		
Bleaching						
No	120(81.1)	0.012*	0.850 (0.773–0.934)	57(38.5)	0.054	0.715 (0.528–0.969)
Yes	62(95.4)			35(53.8)		
Oral malodor						
No	83(77.6)	0.002*	0.831 (0.741–0.931)	43(40.2)	0.452	0.869 (0.638–1.184)
Yes	99(93.4)			49(46.2)		
Teeth mobility						
No	152(84.4)	0.484	0.929 (0.820–1.051)	73(40.6)	0.105	0.704 (0.500–0.992)
Yes	30(90.9)			19(57.6)		
Mouth ulcer						
No	112(85.5)	1.000	1.002 (0.894–1.123)	47(35.9)	0.010*	0.654 (0.484–0.884)
Yes	70(85.4)			45(54.9)		

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influenced by an individual's satisfaction and happiness, making halitosis an influential factor due to it causing shame, depression, and difficulty relating to others (21). Someone with bad breath will disrupt the process of socialization, feel discomfort, and endure shame that contributes to general well-being. Previous research indicated at least 50% of the total population suffers from halitosis or bad breath and 25% of them experience severe social function problems, such as nervousness, shame, and avoiding social contact or intimate relationships (21). The use of YouTube to search for OHI correlates significantly with oral ulcer information seeking. Information presented in video form can be useful for those in need of clearly narrated and described information (18). This is consistent with the results of this study, which found canker sores were predictors of YouTube usage preference (22). As injured oral mucosa relates to quality of life (creating functional limitations) the more lesions or canker sores a person has, the more their quality of life will be disrupted (22).

This research may have experienced response bias therefor careful interpretation is needed. This study used simple distinctive dichotomous answers for assessing teacher preferences when using internet to obtain OHI, encouraging respondents to provide simple responses for complex questions in a less sensitive manner with potential impact on reduced internal reliability. Questionnaire design that uses Google forms can also improve response rates, but requires a strategy, such as increasing the visual appeal of a questionnaire. Previous research has stated that a response rate of 60% is good and that 70% and above is very good (23).

Respondents reported using SM to communicate and find information beyond oral health. As humans are social beings, socializing is important (24). It easy to use SM as a source of OHI, making it more likely to be used for information searches (25). However, the quality and accuracy of OHI still needs to be reviewed, requiring experts (especially dental and oral health personnel) to provide guidance on correct and valid information as well as determining valid information sources when using SM to research dental and OHI.

Conclusion

This study found the majority of respondents used internet as a source of information about oral health. Most respondents preferred receiving health information through Google and YouTube. Google was preferred by teachers to seek information regarding teeth whitening and bad breath, while information on oral ulcers was searched using YouTube. The results of this study are

expected to support health service providers distributing health information through media often used by teachers, making it easier for health workers to carry out health promotion effectively and efficiently, and to empower teachers to be a reliable source for their teenagers students.

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