Preliminary Findings on the Willingness to Participate in Oral Cancer Screening among High Risk People; A Study of a Muslim Predominant Community in Narathiwat, South Thailand

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0367

The Asian Conference on the Social Sciences 2013

Official Conference Proceedings 2013

Abstract

Objective: This research aimed to study the willingness to participate in oral screening among high risk people who have practiced long term smoking and betel quid chewing in one Muslim predominant community in Narathiwat province, Thailand.
Method: This cross-sectional study adopted five distinctive variables of the Health Belief Model Theory in explaining the willingness to participate in oral screening. A total of 255 high risk adults 40 years of age or older were sampled by stratified random method according to their habits of smoking, chewing and both habits. A questionnaire-based interview was used to collect data.
Results: The participants were 65.5% males. The mean age was 63.1 (SD = 11.7) years, ranging from 41 - 93 years. There were 52.1% smokers, 16.5% chewers and 31.4% practicing both habits. Most of them reported never having an oral screening experience (99.2%) yet were willing to take the screening (89.8%). Participants willing to participate in oral screening had significantly higher knowledge regarding oral cancer risk factors than the unwilling individuals ($p < 0.05$). The study also proved that the willingness to participate in oral screening among high risk people significantly related to their perceived barriers and self-efficacy (both *chi-square p-values, <0.001*).
Conclusion: The willingness to take oral screening among high risk people in the study was of a satisfactory level. The significant factors relating to willingness were knowledge, perceived barriers and self-efficacy. The results from this study could be applied in a strategy plan to promote willingness to participate in oral cancer screening.

INTRODUCTION

Oral cancer is one of the major public health problems in many Asian countries including Thailand.(1,2) The incidence rate of the disease in this country is 5.9 per 100,000 of the population which is 1.5 times greater than world incidence.(1) More than 4,000 new cases are diagnosed yearly, but unfortunately 50% of cases die from it.(1,2)

Tobacco use, betel quid chewing and alcoholic consumption are established risk factors for oral cancer.(3) The most prevalent current and daily smokers are observed in male individuals who live in the southern region.(4,5) Data from Thailand's cancer statistics also reveal the high incidence rate of oral cancer in males in this region.(2)

Narathiwat is one of the 4 southernmost provinces of Thailand (Narathiwat, Pattani, Yala and Songkhla) that border Malaysia (Figure 1).(6,7) It is 1,140 kilometers from Bangkok.(8) Most of the Thai people are Buddhists.(9) However, this province has a unique characteristic(10) where almost 86% of the population are Muslim.(9,11) Most of the Muslims in the province have Malay ancestry and speak a unique Malay dialect in parallel with the Thai language in daily life.(11) Since 2004 until now, a separatist insurgency problem has occurred in this province and in 3 other neighboring provinces.(6,11,12) This problem directly and indirectly affects the health care system.(13) Patients may have some barriers to access medical services including routine physical examination and cancer check – up.(13) According to the referral system of Thailand's Ministry of Public Health, almost 90% of oral cancer patients in the region will be referred to receive advance treatment in Songklanagarind Hospital, Songkhla province, the oral cancer center in the lower South.(14) The study concerning oral cancer in Songklanagarind Hospital showed that nearly two – thirds of oral cancer patients presented with late stage cancer(15,16) and the mean time for patient delay was 3 months.(17) Moreover, Kerdpon and Sriplung(17) also revealed that total delay was significantly influenced by ethnicity; Muslims had more prolonged total delay than Buddhists in this hospital study.

Figure 1.Narathiwat, Pattani, Yala and Songkhla locations in Thailand map. (7)

It is widely accepted that early detection of oral cancer will improve its treatment prognosis and reduce mortality rate.(15,17–23) Prevention, health promotion and surveillance systems are important strategies of the World Health Organization (WHO) in controlling oral cancer.(24) Visual screening of high risk populations was proven to be the most cost-effective strategy.(25–

29) Oral cancer examinations also offer health care providers an opportunity to identify patients who practice risky behaviors and counsel them about their risk of contracting cancer.(30)

Unlike other parts of the body, the oral cavity is easily accessible and an oral cancer examination poses relatively little discomfort or embarrassment for the patient.(31) However, a study from the U.S. National Health Interview Survey (NHIS) revealed that only 20 percent of the population received oral cancer examination(32), compared to 40 – 50 percent for colon cancer, 58 percent for breast cancer, and 54 percent for prostate cancer.(33) Since individual participation in oral cancer screening is relatively low, it is interesting to find out the factors to promote a higher oral cancer screening rate in high risk groups.

To predict why people take action towards a particular behavior was described by several behavioral theories.(34–36) The Health Believe Model (HBM) is one of the more widely used theories.(34) HBM was developed initially in the 1950s by Reoenstock (36) who studied individual's reasons for not participating in health screening programs. The underlying concept of HBM is that health behavior is determined by personal beliefs or perceptions about the disease and the action available to decrease its occurrence.(34) It postulates that psychological readiness to adopt a recommended health action depends on 5 basic dimensions including 1) perceived susceptibility: belief or perception about the chances of experiencing a risk or getting a condition or disease, 2) perceived severity: belief or perception about how serious a condition and its sequelae are, 3) perceived benefits: belief or perception in efficacy of the advised action to reduce risk or seriousness of impact, 4) perceived barriers: belief or perception about the tangible and psychological costs of the advised action, and 5) perceived self-efficacy: the conviction that one can successfully execute the behavior required to produce the outcome.(34,36)

To our knowledge, there is scarce evidence about the factors associated with oral cancer screening behaviors and screening rates among high risk individuals in Thailand, especially in the Muslim community. Alcoholic consumption is prohibited for Muslims(37), thus it is not an obvious risk factor for oral cancer in the community. The purpose of this study then is to study factors associated with willingness to participate in oral cancer screenings among smokers and/or betel quid chewers who are at high risk of contracting oral cancer in a Muslim predominant community in Thailand. Narathiwat is the community of choice because of its Muslim predominant community (86% Muslim population) and it is an area which has never had this study conducted before.

METHOD

This survey study adopted 5 distinctive variables of the HBM Theory in explaining the willingness to participate in oral screening. The participants were high risk adults of age 40 years or older (38) in one Muslim predominant community in Narathiwat, South Thailand. Prior Institutional Review Board approval from the Faculty of Dentistry, Prince of Songkla University was obtained.

A total of 255 respondents were sampled by a stratified random method according to their habits of smoking, chewing or both habits. All of the samples were face-to-face interviewed using the 50-items closed-ended questionnaire prepared by one of the authors (SK) in conjunction with an auxiliary trained translator. The survey intended to collect socio-demographic characteristics, past and current risk behaviors, knowledge regarding oral cancer risk factors, oral cancer screening experience, beliefs or perceptions regarding susceptibility to and severity of oral cancer, beliefs or

perceptions regarding benefits of, barriers and self-efficacy to oral cancer screening, and finally the willingness to participate in oral cancer screening. Written informed consent was obtained from the participants**.** In case they were not eligible to understand Thai, the translator verbally translated the consent form to them. If the participants agreed to take part, they signed or gave their fingerprint on the consent papers. Descriptive statistics were used to describe demographic characteristics (Table 1). Demographic data and the willingness to participate in the oral screening were tested for relation using the *chi-square* test (Table 2). Knowledge regarding oral cancer risk factors was compared between the willing and unwilling groups of participating in the activity using the *Student's t-test* (Table 3). Finally, relation between HBM variables and the willingness to participate in the oral screening were studied using the *chi-square* test (Table 4). The level of significance was accepted at 0.05.

RESULTS

Overall, 255 oral cancer high risk people were recruited in this study. About half had an income of more than 3,000 Thailand Baht (THB) or about 105 United States Dollar (USD) per month.(39) Three thousand THB per month is set near the Thailand's poverty line point of 2,422 THB or 85 USD per month.(40) Fifty eight percent of the recruits live in the area of the sub-district Health Center (SHC) where basic dental service is provided by dental hygienists. (See Table 1)

Table 1.Demographic characteristics of the sample.

Variables	Characteristics	n (%)
Gender	male	167 (65.5)
	female	88 (34.5)
Age	40-59	97 (38.0)
	60-older	158 (62.0)
	$\bar{x}$ $\pm$SD	63.1 $\pm$ 11.7
	Min-Max	41 - 93
Marriage	married	189 (74.1)
	widow/divorce/single	66 (25.9)
Education	at least primary level	153 (60.0)
	uneducated	102 (40.0)
Occupation	not working	86 (33.7)
	agricultural	93 (36.5)
	non-agricultural	76 (29.8)
Monthly income	up to 3,000 THB	118 (46.3)
	more than 3,000 THB	137 (53.7)
Residential SHC	within dental service area	107 (42.0)
	without dental service	148 (58.0)
Behaviors	smoking	133 (52.1)
	chewing	42 (16.5)
	both habits	80 (31.4)
Oral screening experience	yes	2 (0.8)
	no	253 (99.2)
Willingness to participate	yes	229 (89.8)
	no	26 (10.2)

The willingness to participate in oral cancer screening of the respondents was significantly related to gender (p = <0.001), age (p = 0.006) and monthly income (p = 0.02) shown in Table 2.

Table 2. The relations between characteristics and the willingness to participate in oral cancer screening using χ^2 and Crude Odds Ratio.

Characteristics	Willing	Unwilling	Crude Odds Ratio	95% CI	*chi-square* *p* value
Gender					
male	159	8	1.00		<0.001*
female	70	18	5.41	1.38 – 21.16	
Age					
40 – 59	94	3	1.00		0.006*
60 – older	135	23	5.20	1.18 – 22.84	
Marriage					
married	174	15	1.00		0.08
widow/divorce/single	55	11	0.74	0.24 – 2.25	
Education					
at least primary level	141	12	1.00		0.19
uneducated	88	14	0.85	0.32 – 2.28	
Occupation					
not working	72	14	1.00		0.07
agricultural	87	6	2.62	0.66 – 10.40	
non-agricultural	70	6	1.64	0.40 – 6.64	
Monthly income					
up to 3,000 THB	100	18	1.00		0.02*
more than 3,000 THB	129	8	2.90	1.21 – 6.95	
Residential SHC					
with dental service	99	8	1.00		0.31
without dental service	130	18	2.32	0.88 – 6.10	
Risk Behaviors					
smoking	125	8	1.00		0.08
chewing	34	8	0.82	0.26 – 2.62	
both habits	70	10	1.16	0.36 – 3.70	
Oral screening experience					
yes	2	0			0.51
no	227	26	N/A**	N/A	

* significance
** Not applicable

The knowledge regarding oral cancer risk factors is statistically compared in Table 3. Significant differences between the willing and unwilling groups were observed (p = 0.008). The willing group was more knowledgeable regarding oral cancer risk factors than the unwilling group.

Table 3.The difference of knowledge between the willing and unwilling groups.

Knowledge	Willing Mean (SD)	Unwilling Mean (SD)	*t*	*p* value
regarding oral cancer risk factors	5.52 (2.26)	4.27 (2.38)	2.66	0.008*

* significance

The study found that the willingness to participate in oral screening among high risk people significantly related to their perceived barriers and self-efficacy (both *chi-square p-valuess,* <0.001). (Table 4)

Table 4.The relation between HBM variables and the willingness to participate in oral cancer screening using χ^2 and Crude Odds Ratio.

HBM Variables	Willing	Unwilling	Crude Odds Ratio	95% CI	*chi-square p* value
Perceived susceptibility					
more perceived	22	4	0.59	0.17 – 2.55	0.56
less perceived	207	22	1.00		
Perceived severity					
more perceived	115	13	1.01	0.41 – 2.48	0.98
less perceived	114	13	1.00		
Perceived benefits					
more perceived	186	17	2.28	0.84 – 5.86	0.10
less perceived	43	9	1.00		
Perceived barriers					
more perceived	63	25	0.02	0.00 – 0.10	<0.001*
less perceived	166	1	1.00		
Perceived self-efficacy					
more perceived	204	5	33.4	11.0 – 123.9	<0.001*
less perceived	25	21	1.00		

* significance

DISCUSSION

Some demographic data (age, gender and monthly income) were significantly related to the willingness to take part in oral screening in this study. The result was consistent with a previous study that showed the significant factors of some demographic data of gender, age, and risk behaviors.(41)

The present study showed that the willing group was more knowledgeable regarding oral cancer risk factors than the unwilling group. It was consistent with the previous findings which revealed that knowledge was found to be the strongest predictor of participating in oral cancer screening.(42–44)

Concerning the HBM, the willingness to take part in oral cancer screening among high risk people significantly related to their perceived barriers and self-efficacy. This result is in accord with the studies of Noroozi and Tahmasebi(45) and Tavafian*et al.*(46) regarding breast cancer screening behavior, where only the 2 mentioned variables also reported significant predictors. Moreover, some studies found only perceived barriers as the most single important predictor for breast cancer screening(47,48), whereas some have found perceived self-efficacy as the most powerful predictor.(49,50)

The relatively high rate of willingness (89.8%) to participate in oral cancer screening was quite consistent with the result of a previous study (70%).(51) However, the real behavior for the routine oral cancer screening rate was reported at only 20%.(32) The real behavior was not included in this research. The questions of whether personal perceptions about the disease and willingness to perform the behavior have any impact on actual behavior remain unsolved. Therefore, additional studies are required to further explore these impacts.

In conclusion, the willingness to participate in oral cancer screening among high risk people in the study was of a satisfactory level. The significant factors related to willingness were knowledge, perceived barriers and self-efficacy. Strategies that could help promote willingness to participate in oral cancer screening could perhaps include emphasizing knowledge delivery regarding the disease risk factors, reducing all possible barriers and motivating them to reach the desirable action.

ACKNOWLEDGEMENTS

The authors would like to acknowledge the Faculty of Dentistry, Prince of Songkla University for funding this research. We also appreciate the assistance of the village health volunteers of Narathiwat Provincial Health Office in accessing all participants.

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