ORIGINAL ARTICLE

Pap Smear Uptake and Its Associated Factors among Orang Asli Women in Selangor

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ABSTRACT

Introduction: Pap smear screening may increase the quality of women's health through early detection of cervical cancer thus providing a better prognosis for women with cervical cancer. While the benefit of Pap smear screening is well documented, the screening uptake among Malaysian women in general was unsatisfactory with only 47.3% being screened. This study aimed to determine the prevalence of Pap smear uptake and its associated factors among Orang Asli women who lives in rural areas in Selangor. **Methods:** A cross sectional study was conducted in Hulu Langat and Kuala Langat districts from April to July 2017. Through cluster sampling, five Orang Asli settlements in the two districts were chosen. All women in the selected village aged between 18 to 65 years were invited to participate and interviewed using a structured, pretested questionnaire. Data were analysed using SPSS Version 22. Univariate and bivariate analysis were conducted to identify factors associated with Pap smear uptake among the participants. All hypotheses tests were two-sided and level of significance was set at 0.05. **Results:** Out of the 147 respondents, 114 (77.6%) had undergone Pap smear for at least once in the past. Women aged more than 35 years (p=0.013) were shown to be significantly more likely to take Pap smear compared to women who were 35 years old and less. There were significant associations between marital status (p<0.001), knowledge (p<0.001), attitude (p<0.001) and use of oral contraceptive (p=0.001) with Pap smear uptake. **Conclusion:** This study showed a high prevalence of Pap smear uptake among Orang Asli women in Selangor.

Keywords: Pap smear, Orang Asli, Selangor, Cervical cancer, Prevention

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INTRODUCTION

Cervical cancer ranks the fourth most common cancer among women, and the seventh overall, with an estimated 528,000 new cases in 2012 according to the World Health Organization (1). While in Malaysia, cervical cancer emerged as the second most common cancer among women, and 2145 new cases were reported in 2014 by World Health Organization. Women aged over 30 years showed a higher risk in contracting cervical cancer. About 371,000 new cases of invasive cervical cancer have been reported worldwide each year; about 10% representing all cancers in women. Central and South America, Southern and Eastern Africa, and the Caribbean are the highest risk areas, with incidence rates of at least 30 new cases per 100 000 women per year as compared to the North America.

In Malaysia, the overall incidence rate of cervical cancer in 2008 was 19.7 per 100,000 women; however this differs by ethnic group. Chinese women have the highest age-standardised rate (ASR) of 28.8 per 100,000, followed by Indians with 22.4 and Malays (includes Peninsular Malaysia but not East Malaysia) with 10.5 per 100,000 women (2). Among all cases of cervical cancer in 2008, 76% of them were diagnosed at stage 2 or higher according to the Federation of Gynaecology and Obstetrics (FIGO) cervical cancer staging (3).

In Malaysia, opportunistic Pap smear screening is provided to all sexually active women aged 20-65 years starting from the 1960s (4). A public health programme entitled "Healthy Life Style Campaign against Cancer" was launched by the Ministry of Health Malaysia in 1995 to promote Pap smear screening every 3 years for free among women aged 20 to 65 years (5). According to a study done in 57 countries, the coverage of cervical

cancer screening in developing countries was 19% on average, which is considered low compared to 63% in the developed countries (6). In Malaysia, which is a developing country, only 47.3% of Malaysian women have ever undergone Pap smear screening according to The Third National Health and Morbidity Survey (NHMS III) 2006 despite the service being provided for free (3). In a previous study, the percentage of rural women in Malaysia who had undergone Pap smear was less than 50%. This finding was similar to the rates of Pap smear uptake for women in Malaysia in general (4).

In most of the previous international studies, socio-demographic characteristics of women was found to have an influence on the rate of Pap smear screening (7-11). On another study in Malaysia, it showed that lack of knowledge regarding cervical cancer screening among women was significantly associated with not going for Pap smear screening. The uptake of cervical cancer screening also was influenced by women's attitude and belief (12). Wong et al. (2008) further stated that women's negative attitude and belief prevent them from regular cervical screening. Access to services in rural areas are characterised by transportation, distant to health care services and duration to get treatment. These factors are likely barriers to cervical cancer screening in various communities (9,10,12).

Studies have shown that the health status of aboriginal women were lower compared to general population. According to Nicholas and Bear (2007), the Orang Asli communities are often marginalized due to ethnicity, geography, development, socio-economic status and they commonly suffer persistently poorer health outcomes (13). Being a marginalized population usually lead them to neglect their health, and lack of essential needs such as proper clothing and nutritious food for the whole family (14). While several studies have been conducted to assess the health status of Orang Asli women in Malaysia, no published data is available on the uptake of Pap smear among Orang Asli women. Thus, this study was conducted to determine the prevalence of Pap smear uptake and its associated factors among Orang Asli women in Selangor.

MATERIALS AND METHODS

This cross sectional study was conducted between April and July 2017 in two main districts with the highest population of Orang Asli in Selangor, Malaysia which are Hulu Langat and Kuala Langat. Altogether, there are nine Orang Asli settlements in Hulu Langat and 22 in Kuala Langat, with a total of 8486 individuals residing the area (15). Five settlements were selected randomly from the list of 31 Orang Asli settlements; the selected ones are Kampung Kuala Pangsun, Kampung Broga, Kampung Sungai Bumbun, Kampung Sungai Judah and Kampung Bukit Tadom.

The estimated sample size was calculated using the 2 proportions formula by Lwanga and Lomeshow (1991) giving a minimum sample size 206 taking into account non-response rate of 20% (16). All Orang Asli women aged from 18 to 65 years residing in the selected settlements were invited to participate in this study. The women who consented were interviewed using a structured questionnaire by a group of trained interviewers. The questionnaire was developed in Bahasa Melayu. The questionnaire consisted of five sections; the first section is regarding personal and socio demographic information, the second section is regarding knowledge on Pap smear and source of information of Pap smear, the third is on attitude towards Pap smear uptake, the forth section asked on accessibility towards Pap smear screening and the last section is on the risk factors of cervical cancer. Pretesting of the questionnaire was conducted among another population of Orang Asli women in Kampung Paya Lebar, Hulu Langat prior to data collection to assess the face validity and internal consistency of the questionnaire. Cronbach alpha on the scales ranged from 0.721 to 0.833. The content validity of the questionnaire was performed by two Public Health Medicine Specialists who are experts in the field.

Data analysis was performed by using SPSS Version 22. Descriptive statistics analysis was undertaken using frequencies, percentage, means and standard deviations regarding socio demographic factor, risk factor of cervical cancer, knowledge level and attitude towards Pap smear uptake. Chi-square test was used to measure the associations between the dependent and independent variables. All hypotheses tests were two-sided and level significance, α was set at 0.05.

Permission was granted by the Department of Orang Asli Development (JAKOA) and from the respective local village leaders. Ethical approval to conduct the study was obtained from the Research Ethics Committee involving Human Subject of the Universiti Putra Malaysia.

RESULTS

Socio-demographic characteristics

Out of 164 eligible Orang Asli women were invited to participate in the study, 147 agreed giving the response rate of 89.6%. Table 1 shows the socio-demographic characteristics of respondents.

Their age ranged from 18 to 63 years old. The age was not normally distributed and skewed to the right with median of 34 and interquartile range (IQR) of 14, with the majority aged between 21 to 30 years (37.4%). In terms of the subethnic group, the majority were Temuan (56.5%), followed by Mah Meri (41.5%) and other Orang Asli tribes (2%). Most of the respondents were married (77.6%), 19.7% never received any formal education

Table 1. Socio-demographic characteristics of the respondents (N=147)

Socio-demographic characteristics	n (%)
Age median (IQR) =34 (14)	
≤ 20	4(2.7)
21-30	55(37.4)
31-40	50(34.0)
41-50	23(15.6)
> 50	15(10.2)
Ethnicity	
Temuan	83 (56.5)
Mah Meri	61 (41.5)
Others	3 (2.0)
Marital status	
Single	12 (8.2)
Married	114 (77.6)
Widowed	21 (14.3)
Education level	
Primary school	62 (42.2)
Secondary school	52 (35.4)
Matriculation/ STPM	3 (2.0)
College/University	1 (0.7)
No education	29 (19.7)
Occupation	
Self-employed	31(21.1)
Government sector	9(6.1)
Private sector	15(10.2)
Student	1(0.7)
Housewife	91(61.9)

and 42.2% only had primary education. More than half (61.9%) of the respondents were housewives.

Prevalence of Pap smear uptake

Out of 147 respondents, 114 respondents (77.6%) had done Pap smear for at least once in the past while 33 respondents (22.4%) had never done pap smear. Among those who have done it, only 74 (50.3%) women had done it in the past three years prior to the survey.

Knowledge on Pap smear screening

Table 2 shows the detail responses given by the respondents for each knowledge statement.

The statement with the highest proportion of correct answer is "Pap smear is only encouraged for women who have children" with 72.8% answered correctly. Each correct answer were given 1 mark and incorrect answer were not given any mark. The total knowledge

Table 2. Knowledge on Pap smear screening among respondents (N=147)

Statements on Pap smear	Correct, n(%)	Incorrect, n(%)
Pap smear helps in early detection of cervical cancer.	100(68.0)	47(32.0)
*All women have to undergo Pap smear screening as routine medical check-up.	102(69.4)	45(30.6)
Women are recommended to undergo Pap smear screening every 2 to 3 years.	89(60.5)	58(39.5)
Pap smear is encouraged for married women.	103(70.1)	44(29.9)
*Pap smear is only encouraged for women who have children.	107(72.8)	40(27.2)
Abnormal Pap smear is a positive sign for cervical cancer.	84(57.1)	63(42.9)
Pap smear is one of the preventions for cervical cancer.	103(70.1)	44(29.9)
*The best time to attend Pap smear examination is during menstrual period.	64(43.5)	83(56.5)

(*) negative statements

score of each respondent was calculated and ranged from 0 to 8. For the purpose of comparison and analysis, the respondents were further classified into those with high level of knowledge (score ≥ 6) and 'low level of knowledge' (score < 6) using the median of 6 as cut-off point and 8 as the maximum score for knowledge. Seventy-nine respondents (53.7%) had high level of knowledge while 68 (46.3%) were classified as having low level of knowledge regarding Pap smear.

Attitude towards Pap smear screening

Table 3 shows the attitude of respondents towards Pap smear screening for each statement. The statement "I feel more relieved after having my Pap smear test done" had the most good attitude with 79.6% agreed and strongly agreed to the statement.

Attitude score for each respondents were calculated according to their responses. For the positive statements, the scoring systems used with respect to respondents' responses are as follows: strongly agree scored 5, agree 4, unsure 3, disagree 2, and strongly disagree 1. Reverse scoring was done for the negative statements. The highest score ranged from 11 to 55. For the purpose of comparison and analysis, the respondents were further classified into 2 groups which are 'poor attitude' (score <30) and 'good attitude' (score ≥30) using the median of 30 as cut-off point. Eighty-two respondents (55.8%) had good attitude towards Pap smear screening while 65 of the respondents (44.2%) had poor attitude.

Factors associated with Pap smear uptake

The dependent variable, i.e., pap smear uptake is dichotomised into women who have ever done pap smear at least once in their lifetime (n=114) and those who have never had pap smear before (n=33). Bivariate analysis were undertaken to examine the association between pap smear uptake and the respondents socio-demographic characteristics, knowledge on pap smear, attitude towards pap smear, their access to services and risk factors of cervical cancer. The results are shown in Table 4.

There were significant association between two socio-demographic factors; age (p=0.013) and marital status (p=<0.001) with Pap smear uptake. The other socio-demographic factors were not significantly associated with Pap smear uptake. Knowledge was found to be significantly associated with Pap smear uptake (p<0.001). There was also significant association between attitude and Pap smear uptake (p<0.001). None of the variables that reflect access to services were found to have significant association with Pap smear uptake. As for the risk factors of cervical cancer, only use of

Table 3. Attitude of respondents towards Pap smear screening (N=147)

Statements	Strongly disagree	Disagree	Not sure	Agree	Strongly Agree
	n(%)	n(%)	n(%)	n(%)	n(%)
I feel more relieved after having my Pap smear test done.	0(0)	6(4.1)	24(16.3)	82(55.8)	35(23.8)
*I feel shy and awkward while I am having Pap smear test.	19(12.9)	43(29.3)	23(15.6)	48(32.7)	14(9.5)
*Pap smear test is very painful.	25(17.0)	51(34.7)	27(18.4)	38(25.9)	6(4.1)
*I am afraid of getting a positive Pap smear results (which may indicate that I have cervical cancer).	2(1.4)	20(13.6)	21(14.3)	74(50.3)	30(20.4)
*Pap smear test is not needed if I do not show symptoms of cervical cancer.	34(23.1)	43(29.3)	33(22.4)	27(18.4)	10(6.8)
*Pap smear test is too costly for me.	42(28.6)	53(36.1)	33(22.4)	17(11.6)	2(1.4)
Pap smear is free in all government clinics.	2(1.4)	1(0.7)	22(15.0)	69(46.7)	53(36.1)
*Pap smear screening takes long times.	36(24.5)	55(37.4)	26(17.7)	26(17.7)	4(2.7)
I agree to be examined by a male doctor during Pap smear test.	29(19.7)	60(40.8)	8(5.4)	45(30.6)	5(.4)

(*) negative attitude

Table 4. Association between socio-demographic factor, knowledge, attitude, access to services and risk factor of cervical cancer with Pap smear uptake of the respondents (N=147)

Variables	Pap smear uptake		χ^2	p-value
	Yes, n (%)	No, n (%)		
Age			6.170	0.013*
<35 years old	55 (69.9)	24 (30.4)		
≥35 year old	59 (86.8)	9 (13.2)		
Ethnicity			1.759	0.185
Temuan	70 (81.4)	16 (18.6)		
Mah meri and others	44 (72.1)	17 (27.9)		
Marital status			27.930	<0.001*
Single	2 (16.7)	10 (83.3)		
Married	94 (82.5)	20 (17.5)		
Widowed	18 (85.7)	3 (14.3)		
Educational level			1.948	0.163
Low educational level	74 (81.3)	17 (18.7)		
High educational level	40 (71.4)	16 (28.6)		
Occupational			0.919	0.338
Non-working	69 (75.0)	23 (25.0)		
Working	45 (81.8)	10 (18.2)		
Knowledge			25.490	<0.001*
Low knowledge	40 (58.8)	28 (41.2)		
High knowledge	74 (93.7)	5 (6.3)		
Attitude			32.887	<0.001*
Poor attitude	36 (55.4)	29 (44.6)		
Good attitude	78 (95.1)	4 (4.9)		
Access to service				
Transportation				0.489#
Self-transportation	105 (78.4)	29 (21.6)		
Without self-transportation	9 (69.2)	4 (30.8)		
Duration to get treatment			2.251	0.134
<30 minutes	36 (85.7)	6 (14.3)		
≥30 minutes	78 (74.3)	27 (25.7)		
Distant to health care			0.588	0.443
<5km	57 (80.3)	14 (19.7)		
≥5km	57 (75.0)	19 (25.0)		
Risk factor of cervical cancer				
Multiple sexual partner				0.776#
Yes	1(100.0)	0(0.0)		
No	113(77.4)	33(22.6)		
Age of first marriage				0.196#
<17 years old	20 (95.2)	1 (4.8)		
≥17 years old	93 (81.6)	21 (18.4)		
Use of oral contraceptive			11.308	0.001
Yes	62(89.9)	7(10.1)		
No	52(66.7)	26(33.3)		
Parity			6.993	0.080
Low parity (3 children or less)	43(67.2)	21(32.8)		
High parity (more than 3 children)	71(85.5)	12(14.5)		
Smoking				0.600#
Yes	2(100.0)	0(0.0)		
No	112(77.2)	33(22.8)		

* $p<0.05$

Fisher's exact test

oral contraceptive was significantly associated with Pap smear uptake (p=0.001), while the other factors were not associated with Pap smear uptake.

DISCUSSION

The prevalence of Pap smear uptake among Orang Asli women in this study is 77.6%. In contrast to the Third National Health and Morbidity Survey (NHMS III) 2006, there is a great difference between the finding in this research and the prevalence of Pap smear uptake reported, which was only 47.3%. Unexpectedly, this figure is also far more higher than the findings in previous local studies which showed that the uptake of Pap smear screening was 56% among urban women in Petaling Jaya city (17), 38% among urban school teachers (18), 6% among university students in Selangor, 25% among factory workers(17) and 48.9% among rural women in Malaysia (4). Previously, prevalence of Pap smear uptake was thought to be higher among urban elite groups but ironically, our cohort, who were aboriginal women living in rural area showed better Pap smear uptake rate. The good Pap smear screening coverage may be linked to the ease of access to service as free Pap smear screenings are provided in the *klinik desa* of the villages. Moreover, it is believed that our cohort, Orang Asli women tend to only go to the same government clinics (which also provide free Pap smear screening) but not private clinics when they needed any medical treatment. Hence, their reproductive health (including Pap smear screening appointments) could be constantly monitored. The figure, however, is still considered to be low when compared to the Pap smear uptake among women in United States, which is as high as 93% and also among women in Hong Kong, which is 82% (19,20).

In this study, socio-demographic factors such as age, ethnicity, marital status, educational level and occupational status of the respondents were determined. Similarly to previous local studies (4,18) and overseas studies (19), age has been shown to have significant association with Pap smear uptake. Those who were older (aged 35 and above) were more likely to attend Pap smear. This finding concurs with several previous local studies but is in contrast with the finding of a study by Sharon and Ivy (2010) among Hong Kong women which shows that women from younger age group (aged 37 years or younger) were more likely to attend Pap smear screening (20). The study in Hong Kong reasoned that the prevalence of Pap smear uptake is higher among younger women due to the increased awareness among youths. While in our study, we suggest that our finding may be due to the better awareness towards cervical cancer among older women, as cancer is also widely known as disease of the old age in Malaysia.

Marital status has shown to be a significant predictor of Pap smear screening among the studied women. This finding is broadly consistent with another local study by Chee et al. (2003) on electronic factory workers (21). This observation may be explained by the increased likelihood of attendance of maternal and child health clinics in married women as compared to those unmarried, thus increased the chances for them to gain awareness of Pap smear screening and schedule appointments for it. However, in our study, there were only 12 respondents who were unmarried while the majority of the respondents were either married women or those who were widowed. Adding on to that, according to the Clinical Practice Guideline of Malaysia, Pap smear screening is only indicated for women aged between 20 to 65 years who are or have been sexually active. There is a possibility that those unmarried were not sexually active yet, as premarital sex is socially unacceptable in the local culture and hence they do not need Pap smear screening currently. This reasoning can too explain the low Pap smear uptake among unmarried women and thus the significance between marital status and Pap smear uptake.

According to the previous local studies, knowledge level has been found to be significantly associated with Pap smear uptake (4,18). The findings in our study too has shown significant association between knowledge on Pap smear screening. Women who were found to have higher level of knowledge pertaining to Pap smear screening tend to be more likely to attend Pap smear screening. The finding was encouraging as most of the respondents answered seven out of eight questions on knowledge correctly. It shows that despite the majority had low level of education, still, most of them could answer the questions correctly. On the other hand, more than half of the respondents (56.5%) had limited knowledge on the statement 'the best time to attend Pap smear examination is during menstrual period.' However, this finding may be due to the inadequacy of explaination of the statement to the respondents as some respondents were confused about it when being asked by the enumerator. As suggested by Gan and Dahlui in their study in 2013 which showed that information from the government or private healthcare providers was the strongest predictor of Pap smear uptake, recommendation to schedule Pap smear screening should be given by healthcare providers in primary care clinics to all eligible women who attended the clinic (4).

This study shows that there is a significant association between attitude towards Pap smear screening and Pap smear uptake. Among respondents with a good attitude towards Pap smear uptake, 95.1% attended Pap smear screening while only 55.4% of women with poor attitude attended Pap smear screening. In fact in general, women's attitudes and beliefs towards importance of Pap smear test will reflect the behaviour of practicing Pap smear test. Other local studies too showed that

women's attitude and belief did significantly influence the uptake of cervical cancer screening (12,18). It is, too, encouraging to see that 80% of our respondents actually agreed feeling more relieved after having Pap smear done and 62% of them disagreed with the statement 'Pap smear screening takes long time.' Study by Abdullah et al. (2011) showed that rural women who did not feel more relieved after doing Pap smear and those who agreed that Pap smear did take long time were less likely to go for Pap smear screening (18). On the other hand, more than half of the women in our study were reluctant to be examined by male physician during Pap smear screening. Hence, it would be good to be culturally sensitive by arranging more female healthcare workers in primary care clinics to help women feel more comfortable to attend Pap smear screening.

In this study, access to service did not show significant association with Pap smear uptake; transportation (p=0.489), duration to get treatment (p=0.134) and distance to primary care clinic (p=0.443). Although there was no significant association, majority of the respondents who have self-transportation had undergone Pap smear (78.4%). Women whose the distance from house to nearby government clinic was less than 5 km to health care services had higher percentage of Pap smear uptake (80.3%) as compared to those who have to travel for more than 5km to the nearby government clinic (75.3%). Among our cohort, almost half of them had to travel only less than 5km to reach to the nearby government clinic and 80% usually travelled to the clinic by motorcycle.

Majority of respondents who took oral contraceptive had undergone Pap smear screening for at least once in their lifetime. This finding coincides with the results of previous local studies done by Chee et al. (2003) on electronic factory workers and rural women (21). It was perhaps due to the high recommendation to undergo Pap smear screening given by healthcare providers working in government clinics where the women received their oral contraceptive pills from. However, in another study by Abdullah et al. in 2011, no significant association was shown between oral contraceptive pill use and Pap smear uptake (18). That was explained by the wide access of hormonal contraceptive medication which allowed urban elite women to obtain the oral contraceptive pills easily even without prescriptions and monitoring by healthcare personnel. Hence, there was less opportunities for these women to be advised to undergo Pap smear screening directly by healthcare personnel. On the other hand, multiple sexual partner (p=0.776), age of first marriage (which we assumed as the age of first sexual intercourse) (p=0.196), parity (p=0.080) and smoking (p=0.600) did not show any significant association with Pap smear uptake. Similarly, none of these risk factors were shown to be predictors of Pap smear screening in previous local studies.

Study limitation

One of the limitation of this study was the cluster sampling method which may have introduced selection bias. The sample may not be representative of Orang Asli women in whole Selangor The respondents were approached either through house-to-house interview or interviewing all eligible women who attended our health screening events in the villages. This may somehow lead to bias for recruiting women with good health-seeking behaviour and who had ample free time. Also, limited respondents were approached due to time constraint. Nevertheless, this study provides a fundamental reference for future large-scale, nationwide studies on reproductive health of Orang Asli women.

CONCLUSION AND RECOMMENDATION

In short, this study shows that women who had ever done Pap smear were significantly more likely to be older (35 years old or older), married, have high level of knowledge on Pap smear screening, have good attitude towards Pap smear screening and use oral contraceptive for family planning. Since cervical cancer ranks the 2nd most frequent cancer among Malaysian women despite the launching of national screening programme for years, it is poignant to stress that tailor-made plans based on the results of studies are needed to boost the uptake of Pap smear in general. The results of this research indicate that there is considerable room for improvement in knowledge, perception, and practices regarding Pap smear screening.

Generally, recommendation to schedule Pap smear screening should be given by healthcare providers in primary care clinics to all eligible women who attended the clinic. Pap smear appointment cards could also be given to all attendees to remind them of their next Pap smear screening. Phone calls to remind women who showed even mild abnormalities to attend Pap smear should be given specifically to prevent the progression of cervical cancer in each of these individuals. Knowledge wise, healthcare professionals play a major role in providing sufficient knowledge to the Orang Asli women as majority of them had low level of education. Information regarding on Pap smear screening should be clearly explained by the healthcare personnel at least when the women first attended Pap smear screening. Free gift or award could also be given to those who attended Pap smear screening regularly as an encouragement. This may reinforce their thought of coming back for Pap smear screening on time.

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