

## ORIGINAL ARTICLE

# REMEASUREMENT, EVALUATION AND COMPARISON THE HEALTH SERVICES UTILIZATION AMONG WOMEN STAFF AT UNIVERSITI KEBANGSAAN MALAYSIA AFTER ELEVEN YEARS PERIOD (2001-2012)

Siti Fatimah A. G.<sup>1</sup> Aniza, I.<sup>1</sup> Shamsuddin, K.<sup>1</sup> & Zailiza, S.<sup>2</sup>

<sup>1</sup>Faculty of Medicine, Universiti Kebangsaan Malaysia, Jalan Yaacob Latiff 56000, Cheras, Kuala Lumpur.

<sup>2</sup>Jabatan Kesihatan Negeri Sembilan, Jalan Rasah, 70300 Seremban, Negeri Sembilan.

## ABSTRACT

A cross-sectional study was carried out in July-October 2012 in UKM to remeasure, evaluate and compare the changes in health services utilization level among women staff in UKM with a previous study done in 2001 and its influencing factors. The services studied were blood pressure (BP) measurement and Pap smear test. A total of 234 respondents aged between 18 and 55 were selected using stratified random sampling from Bangi, Kuala Lumpur and UKMMC, Malaysia. Data was collected via self-administered questionnaire and was analyzed by using SPSS version 17.0. Majority 85.9% of the respondents were found to have utilized at least one BP measurement which is higher compared to previous study. The Pap smear test, 64.5% of women have had a Pap smear test done also higher compared to previous study. Multivariate analysis shows the factors associated with BP measurement are age (OR 2.7, CI 95% 1.2, 6.3), family history of general health problems (OR 3.4, CI 95% 1.5, 7.6), and health staff influence (OR 5.2, CI 95% 1.1, 25.5). The factors associated with Pap smear test are marital status (OR 62.8, CI 95% 7.2, 546.4), general health problems (OR 2.3, CI 95% 1.2, 4.5), family planning (OR 6.9, CI 95% 3.0, 16.5) and self-interest (OR 3.3, CI 95%, 1.3, 8.6). The level of health services utilization on BP measurement and Pap smear test in 2012 is higher than 2001. For both BP measurement and Pap smear test the determinant factors are differed in the aforesaid years.

**KEY WORDS:** Health Services Utilization, Women Staff, Pap smear, Blood Pressure Measurement

## INTRODUCTION

Health services in Malaysia are provided by Ministry of Health, University Hospitals, Army Hospitals, National Population and Family Development Board, private sector hospitals and clinics as well as non-governmental organizations such as Federation of Reproductive Health Associations, Malaysia or formerly known as Federation of Family Planning Association, Malaysia. Both general and reproductive preventive health services are available for Malaysian citizens to utilize.

Concerning women's health, the utilization of health services among women is also an essential aspect that should be addressed. Women preventive health services offered by this country are concentrated on breast and cervical cancer screening. This is presumably due to breast and cervical cancer being the most common cancers that lead to death and are known as diseases that bring a huge burden on women.

The factors influencing health services utilization can be divided into socio-demographic factors, intrapersonal factors, interpersonal factors, and accessibility to

health care services. Socio-demographic factors that influence health services utilization among women are age<sup>1,2,3,4</sup>, educational level<sup>2,5,6</sup>, occupational level<sup>5,7</sup>, marital status<sup>8,9</sup>, income status<sup>10,11</sup> and ethnicity<sup>12</sup>. For intrapersonal factors such as level of health knowledge<sup>13,2,14,15,16</sup>, health locus of control<sup>17,18,19</sup>, anxiety level<sup>20,21,22,23</sup>, health status<sup>24,25,26,27</sup> and family history of medical problems<sup>28,29,30</sup> also influence the utilization of health services. On the other hand, interpersonal factors that influence health service utilization are family support<sup>31,32</sup> and health staff<sup>33</sup>. Furthermore, accessibility to health services also plays an important role in its utilization such as residing within five kilometres from the nearest service facility<sup>16</sup>.

In developed countries, in Canada for instance, income status was significantly associated with mammography uptake. Women who utilized mammography within the past year were those in the middle to high income category<sup>10</sup> whereas in Australia, a study found that the significant influencing factor for cervical cancer screening was the level of anxiety. Rates of cervical cancer screening were lower amongst women with

anxiety symptoms<sup>22</sup>. Another study in a developed country was in Singapore, whereby the study revealed that one of the significant factors affecting mammogram was history of breast disease<sup>25</sup>.

In developing countries such as Africa, it was found that marital status was a significant factor for health services utilization. A greater percentage of married women took up cervical cancer screening compared to those who were single, divorced or widowed<sup>9</sup>. In Netherlands, a study revealed that the more a woman feels strongly about personal moral obligations, the more likely she is to attend the screening<sup>18</sup>. Meanwhile, in Ghana, lack of belief that cervical screening diagnoses cancer, believing that Pap smear test is painful, and that the test will take away virginity became barriers to the screening uptake<sup>19</sup>.

UKM staffs have special advantage because there is a Warga Polyclinic in UKMMC which provides health services to the staff. However, the health services in this polyclinic were not well utilized. Therefore, it is crucial to investigate the influencing factors or barriers preventing them from utilizing health services.

The main objective of this study is to reanalyse and compare the level of health services utilization among women UKM staff with a previous study done in 2001 and to determine its influencing factors that changed over time. Results from the previous study allow comparison to be made regarding the effectiveness of the resource expenditures during these periods. Evolution of health care utilization over the past decades can be studied as well through this comparison.

## METHODS

The cross-sectional study was conducted in UKM from July 2012 to October 2012. Sample size was calculated by using Pocock's formula with confidence interval of 95%. We managed to recruit a total of 234 women staff using stratified random sampling method (stratified by age). Data was collected by using self-administered questionnaire. The same set of questionnaire was used in the study, which consists of six sections, socio-demographic information, reproductive history, health problems and family history, practice and utilization of health services, locus of control measurement, knowledge on general health and reproductive health, and accessibility to health services. Data was analysed by using SPSS version 17.0.

Bivariate analysis used in this study was parametric test which is the Chi-square test. In Multivariate analysis, Binary Logistic Regression was done to predict the factors that influence the level of utilization.

Ethical approval was obtained from ethical committees of Faculty of Medicine, National University of Malaysia.

## RESULTS

A total of 234 women UKM staff participated in this study. The majorities that are aged below 40 years old (53.8%), were Malay (96.6%), educated until tertiary level (62.8%), working in UKMMC (81.6%), were supporting staff (83.8%) and earning more than RM3000 per month, were married (86.3%), having one to three children (60.7%) and were not practicing family planning (66.2%) (Table 1).

Table 1: Distribution of Demographic Factors among Respondents (n=234).

<b>Demographic factors</b>	<b>No</b>	<b>%</b>
<b>Age (year)</b>		
18-39	126	53.8
40-55	108	46.2
<b>Race</b>		
Malay	226	96.6
Chinese	1	.4
Indian	4	1.7
Others	3	1.3
<b>Educational Level</b>		
Secondary School	87	37.2
High Education	147	62.8
<b>Workplace</b>		
UKM, Bangi	28	12.0
UKM Kuala Lumpur	15	6.4
UKM Medical Centre, Cheras	191	81.6
<b>Occupational Level</b>		
Professional staff	38	16.2
Supporting staff	196	83.8
<b>Family Income (monthly)</b>		
< RM 3000	65	27.8
≥ RM 3000	169	72.2
<b>Marital Status</b>		
Unmarried	25	10.7
Married	202	86.3
Separated	7	3
<b>No. of Children</b>		
* Irrelevant	25	10.7
No Children	17	7.3
1-3 Children	142	60.7
> 3 Children	50	21.4
<b>Practicing Family Planning</b>		
Yes	79	33.8
No	155	66.2

\* Unmarried Respondents (n=25)

### General Health Services Utilization

Regarding physical examination, the most common service utilized by respondents was blood pressure measurement (85.9%). For laboratory examination and investigation, the most common service utilized by respondents was blood glucose test (75.2%). For health education and counseling, majority of respondents gathered information about nutrition (58.5%). Immunization service utilized by respondents was 38.0%. Counseling on mental health or stress was the least commonly utilized by respondents (17.1%)(Table 2).

### Reproductive Health Services Utilization

The highest percentage of reproductive health services that was ever utilized by respondents was the Pap Smear test, at 64.5% and the least commonly utilized by respondents was the mammogram, at only 12.4%. Majority

(83.3%) of the respondents were practicing BSE (Table2).

### Bivariate Analysis

#### Factors Influencing Blood Pressure Measurement Utilization

For Bivariate analysis, Chi Square test is performed in order to determine whether there is an association between factors studied and blood pressure measurement utilization. Blood pressure measurement utilization has no significant association with any socio-demographic factors (Table 3).

Nevertheless, for intrapersonal factors (Table 4), there are two factors showing significant association with utilization of blood pressure measurement. The two factors are suffering and having history for general health disease or problems in family. A part from that, there is no interpersonal factor which is significantly associated with utilization of blood pressure measurement (Table5).

Table 2: Health Services Utilization among Respondents (n=234).

Type of Health Services	No	%
<b>I. General Health Services</b>		
<b>Physical Examination</b>		
Blood pressure measurement	201	85.9
Weight and Height measurement for BMI calculation	170	72.6
Dental examination	167	71.4
<b>Laboratory examination and investigation</b>		
Blood glucose test	176	75.2
Hemoglobin Examination	169	72.2
Blood cholesterol test	165	70.5
Urine test (UFEME)	151	64.5
X-Ray	90	38.5
ECG	71	30.3
Immunization	89	38
<b>Health Education and Counselling</b>		
<b>Health education on lifestyle:</b>		
Nutrition	137	58.5
Exercise	136	58.1
Ideal body weight	126	53.8
Smoking	100	42.7
Stress	80	34.2
Health education on diseases	95	40.6
Counselling on mental health / stress	40	17.1
<b>II. Reproductive Health Services</b>		
Pap smear test	151	64.5
Mammogram	29	12.4
Breast self examination (BSE)	195	83.3

Table 3: Bivariate Analysis for Sociodemographic Factors Influencing Blood Pressure Measurement.

Factors	Yes	(%)	No	(%)	x <sup>2</sup>	p value
<b>Age</b>						
40-55	98	(90.7)	10	(9.3)	3.9	0.05
18-39	103	(81.7)	23	(18.3)		
<b>Race</b>						
Malay	194	(85.8)	32	(14.2)	0.02	0.9
Non-Malays	7	(87.5)	1	(12.5)		
<b>Educational Level</b>						
High						
Education	126	(85.7)	21	(14.3)	0.01	0.9
Secondary	75	(86.2)	12	(13.8)		
<b>Workplace</b>						
UKMMC,						
Cheras	161	(84.3)	30	(15.7)	2.21	0.14
Others	40	(93.0)	3	(7.0)		
<b>Occupational level</b>						
Professional						
Staff	31	(81.6)	7	(18.4)	0.7	0.4
Supporting	170	(86.7)	26	(13.3)		
<b>Family income</b>						
≥ RM 3000	170	(85.4)	29	(14.6)	0.24	0.62
< RM 3000	31	(88.6)	4	(11.4)		
<b>Marital status</b>						
Married	180	(86.1)	29	(13.9)	0.08	0.77
Unmarried	21	(84.0)	4	(16.0)		

Table 4: Bivariate Analysis for Intrapersonal Factors Influencing Blood Pressure Measurement.

Factors	Yes	(%)	No	(%)	x2	p value
<b>General Health</b>						
Yes	104	(92.0)	9	(8.0)	6.8	0.009
No	97	(80.2)	24	(19.8)		
<b>Reproductive Health</b>						
Yes	8	(88.9)	1	(11.1)	0.07	0.79
No	193	(85.8)	32	(14.2)		
<b>Family History of General Health</b>						
Yes	166	(89.2)	20	(10.8)	8.4	0.004
No	35	(72.9)	13	(27.1)		
<b>Family History of Reproductive Health</b>						
Yes	31	(91.2)	3	(8.8)	0.92	0.34
No	170	(85.0)	30	(15.0)		
<b>Family Planning</b>						
Yes	66	(83.5)	13	(16.5)	0.55	0.46
No	135	(87.1)	20	(12.9)		
<b>Health Knowledge</b>						
Good	182	(86.3)	29	(13.7)	0.23	0.63
Poor	19	(82.6)	4	(17.4)		
<b>Locus of Control</b>						
Internal	122	(87.1)	18	(12.9)	0.45	0.5
Others	79	(84.0)	15	(16.0)		
<b>Anxiety</b>						
High	188	(86.2)	30	(13.8)	0.31	0.58
Low	13	(81.3)	3	(18.8)		

Table 5: Bivariate Analysis for Interpersonal Factors Influencing Blood Pressure Measurement.

Factors	Yes	(%)	No	(%)	x2	p value
<b>Personal interest</b>						
Yes	174	(86.1)	28	(13.9)	0.07	0.8
No	27	(84.4)	5	(15.6)		
<b>Family</b>						
Yes	30	(78.9)	8	(21.1)	1.8	0.8
No	171	(87.2)	25	(12.8)		
<b>Health Professional</b>						
Yes	35	(94.6)	2	(5.4)	2.74	0.1
No	166	(84.3)	31	(15.7)		
<b>Employer</b>						
Yes	9	(90.0)	1	(10.0)	0.15	0.7
No	192	(85.7)	32	(14.3)		
<b>Colleague</b>						
Yes	72	(90.0)	8	(10.0)	1.69	0.19
No	129	(83.8)	25	(16.2)		
<b>Accessibility</b>						
High	149	(84.2)	28	(15.8)	1.77	0.18
Low	52	(91.2)	5	(8.8)		

**Factors Influencing Pap Smear Test Utilization**

The only one significant socio-demographic factor was marital status (Table 6). The significant intrapersonal factors were family planning and level of health knowledge (Table

7). No significant interpersonal factor significantly associated with Pap smear test utilization (Table 8). The accessibility to health services showed that there was no significant association with utilization of Pap smear test.

Table 6: Bivariate Analysis for Sociodemographic Factors Influencing Pap Smear Test Utilization.

Factors	Yes	(%)	No	(%)	x <sup>2</sup>	p value
<b>Age</b>						
40-55	72	(66.7)	36	(33.3)	0.4	0.53
18-39	79	(62.7)	47	(37.3)		
<b>Race</b>						
Malay	145	(64.2)	81	(35.8)	0.4	0.53
Non-Malays	6	(75.0)	2	(25.0)		
<b>Educational Level</b>						
High Education	98	(66.7)	49	(33.3)	0.79	0.38
Secondary School	53	(60.9)	34	(39.0)		
<b>Workplace</b>						
UKMMC, Cheras	124	(64.9)	67	(35.1)	0.07	0.79
Others	27	(62.8)	16	(37.2)		
<b>Occupational level</b>						
Professional Staff	27	(71.1)	11	(28.9)	0.84	0.36
Supporting Staff	124	(63.3)	72	(36.7)		
<b>Family income</b>						
≥ RM 3000	133	(66.8)	66	(33.2)	3.09	0.08
< RM 3000	18	(51.4)	17	(48.6)		
<b>Marital status</b>						
Married	150	(71.8)	59	(28.2)	44.8	0.00
Unmarried	1	(64.5)	24	(96.0)		



Table 7: Bivariate Analysis for Intrapersonal Factors Influencing Pap Smear Test Utilization.

Factors	Yes	(%)	No	(%)	x2	p value
<b>General Health</b>						
Yes	78	(69.0)	35	(31.0)	1.93	0.17
No	73	(60.3)	48	(39.7)		
<b>Reproductive Health</b>						
Yes	8	(88.9)	1	(11.1)	2.42	0.12
No	143	(63.9)	82	(36.4)		
<b>Family History of General Health</b>						
Yes	119	(64.0)	67	(36.0)	0.12	0.73
No	32	(66.7)	16	(33.3)		
<b>Family History of Reproductive Health</b>						
Yes	19	(55.9)	15	(44.1)	1.3	0.25
No	132	(66.0)	68	(34.0)		
<b>Family Planning</b>						
Yes	71	(89.9)	8	(10.1)	33.47	0
No	80	(51.6)	75	(48.4)		
<b>Health Knowledge</b>						
Good	141	(66.8)	70	(33.2)	4.94	0.03
Poor	10	(43.5)	13	(56.5)		
<b>Locus of Control</b>						
Internal	88	(62.9)	52	(37.1)	0.43	0.51
Others	63	(67.0)	31	(33.0)		
<b>Anxiety</b>						
High	138	(63.3)	80	(36.7)	2.1	0.15
Low	13	(81.3)	3	(18.8)		

Table 8: Bivariate Analysis for Interpersonal Factors Influencing Pap Smear Test Utilization.

Factors	Yes	(%)	No	(%)	x2	p value
<b>Personal interest</b>						
Yes	136	(67.3)	66	(32.7)	5.05	0.03
No	15	(46.9)	17	(53.1)		
<b>Family</b>						
Yes	24	(63.2)	14	(36.8)	0.04	0.85
No	127	(64.8)	69	(35.2)		
<b>Health Professional</b>						
Yes	25	(67.8)	12	(32.4)	0.18	0.67
No	126	(64.0)	71	(36.0)		
<b>Employer</b>						
Yes	5	(50.0)	5	(50.0)	0.96	0.33
No	146	(65.2)	78	(34.8)		
<b>Colleague</b>						
Yes	48	(60.0)	32	(40.0)	1.09	0.3
No	103	(66.9)	51	(33.1)		
<b>Accessibility</b>						
High	117	(66.1)	60	(33.9)	0.78	0.38
Low	34	(59.6)	23	(40.4)		

## Multivariate Analysis

### Significant Variables: Comparison with a Previous Study Factors Influencing Blood Pressure Measurement Utilization

Refers to the comparison of factors influencing blood pressure measurement between this study and a previous study,<sup>[34]</sup> whereby the socio-demographic factor that was significantly associated with blood pressure measurement was age (OR: 2.7, CI 95% 1.2-6.3). This result was not consistent with the findings of a previous study<sup>[34]</sup> (Table 9). On the other hand, the previous study<sup>[34]</sup> found that there were two socio-demographic factors which were significantly associated with blood pressure measurement utilization, namely race and marital status. Non-Malays were less likely to utilize blood pressure measurement as compared to Malays (OR 0.4, CI 95% 0.2-0.8), and marital status (OR 2, CI 95% 1.1-3.9). However, both socio-demographic factors, namely race and marital status were found to not have any significance in present studies.

There were two intrapersonal factors that were significantly associated with blood pressure measurement utilization found by a previous study<sup>[34]</sup>. These two factors brought forth reproductive health problems and high anxiety levels (OR 4.3, CI 95% 1.4-13.2, OR 1.9, CI 95% 1.2-3.1 respectively). However, these factors were not significant in the current study. The findings from this study showed that there was a significant association between having family history of general health disease or problems (OR: 3.4, CI 1.4-8.4). In contrast, the findings of the previous study showed no significant association<sup>[34]</sup>.

For interpersonal factors, the significant factor associated with blood pressure measurement utilization found in the previous study<sup>[34]</sup> was personal interest (OR: 2.4, CI 95% 1.3-4.5). This factor was found to not be statistically significant in the present study. The significant factor in the present study was the health staff factor (OR 5.2, CI 95% 1.1-25.5).

Table 9: Comparisons of Influencing Factors of Blood Pressure Measurement Utilization between 2001 and 2012.

Factors	2001		2012	
	OR	CI 95%	OR	CI 95%
<b>Socio-demographic factors</b>				
Age				
40-55	1.1	(0.6-1.9)	2.7	(1.2-6.3)*
18-39				
Race				
Malay			1.6	(0.1-17.9)
Non-Malays	0.4	(0.2-0.8)*		
Marital status				
Married	2.0	(1.1-3.9)*	2.0	(0.5-8.0)
Unmarried				
<b>Intrapersonal factors</b>				
Reproductive Health				
Yes	4.3	(1.4-13.2)*	0.3	(0.02-3.0)
No				
Having History of General Health Problem in Family				
Yes	0.9	(0.5-1.7)	3.4	(1.5-7.6)*
No				
Anxiety				
High	1.9	(1.2-3.1)*	1.0	(0.4-2.5)
Low				
<b>Interpersonal factors</b>				
Personal interest				
Yes	2.4	(1.3-4.5)*	0.9	(0.2-3.3)
No				
Health Staff				
Yes	1.1	(0.5-2.5)	5.2	(1.1-10.5)*
No				

**Factors Influencing Pap Smear Test Utilization**

The differences between findings from this study and a previous study [34] are stated in Table 10. The findings in this study showed no

significant association between age and utilization of Pap smear test. On the contrary, a previous study [34] found that there was a significant association between age and Pap smear test utilization (OR: 2.6, CI 1.5-4.4).

On the other hand, this study also found a significant association between having general health disease or problem with Pap smear test utilization. Meanwhile, a previous study [34] stated this factor was not significant. A part from that, practicing family planning is also a significant factor that is associated with Pap smear test utilization (OR 7, CI 95% 3.0-16.5), which differed from the findings found by a

previous study [34]. The other intrapersonal factor significantly associated with Pap smear test utilization in a previous study [34] study was level of health knowledge (OR 2.8, CI 95% 1.4-5.8). This finding was not consistent with the present study which showed no significance statistically for this factor.

Table 10: Comparisons of predictors of Pap Smear Test Utilization between 2001 and 2012.

Factors	2001		2012	
	OR	CI 95%	OR	CI 95%
<b>Socio-demographic factors</b>				
Age				
40-55	2.6	(1.5-4.4)*	1.4	(0.6-3.0)
18-39				
Marital status				
Married	2	(1.1-3.9)*	62.8	(17.2-90.4)*
Unmarried				
<b>Intrapersonal factors</b>				
General Health				
Yes	1.4	(0.8-2.3)	2.3	(1.2-4.5)*
No				
Family Planning				
No			8.6	(3.4-22)*
Yes	0.6	(0.4-1.1)		
Health Knowledge				
Good	2.8	(1.4-5.8)*	1.1	(0.3-3.5)
Poor				
<b>Interpersonal factors</b>				
Personal interest				
Yes	2.8	(1.3-4.5)*	3.3	(1.3-8.6)*
No				

## DISCUSSION

### Blood Pressure Measurement Utilization

For general health services, the utilization of blood pressure was higher in this study (85.9%)

as compared to a previous study<sup>34</sup>, which was 74%. This study's finding was parallel to other local study<sup>36</sup>, which found that self-reported practice regarding measuring of cardiovascular risks was good in our population of women. This is possibly due to the increase in prevalence of hypertension and awareness to diagnose such hypertension<sup>4</sup>.

### Pap Smear Test Utilization

With reference to reproductive health services, this study found that Pap smear test utilization increased to more than half (64.5%) of respondents utilizing it. This result was among the highest Pap smear test utilization percentage compared to a previous study. The previous study<sup>[34]</sup> also showed lower (43.6%) utilization of Pap smear test compared to the present study. The improvement of Pap smear test utilization level could be due to increased awareness on cervical screening and annual visits to a health provider and receiving the health provider's recommendation to perform Pap smear test. Women who attend postnatal visits are primary targets to utilize Pap smear test, especially those who have more than five children.

### Factors Influencing Blood Pressure Measurement Utilization

In contrast with a previous study<sup>34</sup>, age was significantly associated with blood pressure measurement found in this study. Women aged 40-55 years old were more likely to utilize this service. This could be due to the fact that older women are more likely to develop various types of chronic diseases. A local study found that there is a relationship between menopause with chronic disease<sup>36</sup>. On top of that, other factor that influence BP measurement could be due to government

circulars on compulsory health check for staff age 40 and above.

Intrapersonal factor that was found to be significantly associated to blood pressure measurement in this study was family history of general health problems. This result was not similar with previous a previous study<sup>34</sup>. Nonetheless, this finding which was supported by a local study found that individuals with a family history of hypertension were twice as likely to have hypertension as those without a family history of hypertension (aOR1.8, CI 95% 1.6-2.0)<sup>35</sup>. Therefore, women who have a history of general health problems in their family were more likely to utilize the blood pressure measurement.

Interpersonal factor that is significantly associated with blood pressure measurement utilization was influenced by health staff. This finding was not consistent with the previous study<sup>34</sup>. This finding obviously showed that health staffs were exploiting their important role in promoting health screening test. Nowadays, women are more influenced by health staff recommendations in maintaining their health.

### Factors Influencing Pap Smear Test Utilization

Utilization of Pap smear test was influenced by marital status found in present study. This result was consistent with other previous studies<sup>8,9</sup>. Marital status has significantly influenced the practice of Pap smear test among the participants in the study ( $t=3.55$ ,  $p=0.001$ )<sup>7</sup>. Another study also stated a similar result, whereby, practice was significantly higher among those who were married<sup>14</sup>. This is possibly due to the policy of Ministry of Health that promotes and provides Pap smear test to all women with priorities given to those sexually active women, having more than five children, and women who attend postnatal services. As women grow older, and with the increase in their marriage period, the frequency of consulting doctors increases by gynaecological and obstetric reasons such as giving birth, miscarriage, infection, and contraception. Correspondingly, it is assumed that being aware of Pap smear test and being

informed about them induces an increase in rates for undergoing Pap smear test<sup>29</sup>.

For intrapersonal factors, this study also found that general health status is also significantly associated with Pap smear test utilization, however, the result was not parallel with the previous study<sup>[34]</sup>. This could be due to regular visits to health centres for seeking medical treatment for existing diseases. Those who have received treatment for general health disease most probably also received health staff recommendations for cervical cancer screening test. This could be supported by Bessler et al (2007) findings, stating annual visits to health providers have a strong influence on women's decision to regularly screen for cervical cancer.

Another significant factor was not practicing family planning. In contrast, a previous study<sup>34</sup> found that there was no significant association between practicing of family planning with Pap smear test utilization. Nevertheless, the present study's finding was similar to a local study<sup>3</sup>, whereby those practicing hormonal contraceptive methods were significantly associated with poor Pap smear test utilization.

Level of knowledge was significantly associated with Pap smear test utilization in a previous study<sup>34</sup> however this factor was not significant in the present study. The study found that this factor was not significant which could be due to negative beliefs of respondents toward Pap smear test. Many believe the purpose of the Pap smear test is to detect existing cancer, leading to the belief that Pap smear screening is not required because the respondents had no symptoms<sup>15</sup>.

With reference to interpersonal factors, personal interest factor was also a significant factor for this study and previous studies<sup>34</sup>. This finding was supported by previous studies conducted among female undergraduates of University students in Nigeria and found that only 5.2% of respondents had ever been screened and 52.8% reported their willingness to be screened<sup>14</sup>.

Health utilization and its influencing factors data gathered from this study is very important for UKM in order to assess existing health status of women staff, document current needs, and plan for resources. By analyzing the pattern of health service utilization, this information can be used as a reference in addressing the quality of care, assessing areas which are lacking, projecting future health needs, forecasting future expenditure, and planning for personnel training.

None of the previous studies were exempted from limitations, thus the same goes for this study. The present study was limited in that it did not seek to verify self-reported rates of screening with clinical or laboratory records. A part from that, the data represents only one university in Malaysia. This research also sampled only university employed women instead of women of the general population.

## CONCLUSIONS

In conclusion, the current level of health utilization is higher compared to the level of health utilization in previous decades. The most common general health service utilized by women staff was blood pressure measurement whereas, the most common reproductive health service was Pap smear test. In terms of knowledge level, the knowledge level among women staff has improved. This improvement showed in both areas of knowledge on general health and reproductive health thus increasing overall level of knowledge. The factors influencing health services among women staff differed from previous studies done in 2001. The significant factors for blood pressure in this study were age, having history of general health problems in family, and influence of health staff. On the other hand, the significant factors for Pap smear test utilization were marital status, having general health problems, not practicing family planning, and self interest. The most important finding that should be highlighted in this study was the health staff factor. A previous study found that this factor was not significant with health service utilization. Nonetheless, in the current study, this factor was revealed as a significant factor associated

with health service utilization. This result represents the great work done by health staff and this effort should be maintained and strengthened in the future. It is advisable that UKM plan and implement a comprehensive health preventive programme at health facilities in order to improve health services utilization among staffs.

#### ACKNOWLEDGEMENT

The authors would like to acknowledge contributions by the staffs of Universiti Kebangsaan Malaysia Medical Centre that were directly or indirectly involved in this study.

#### FUNDING

Non declared.

#### COMPETING INTEREST

Non declared.

#### REFERENCES

1. Jun KJ, Choi KS, Jung KW. Effectiveness of an organized cervical cancer screening program in Korea: results from a cohort study. *Int J Cancer* 2009; **124**: 188-193.
2. Bessler P, Aung M, Jolly P. Factors affecting uptake of cervical cancer screening among clinic attendees in Trelawny, Jamaica. *Cancer Control* 2007; **14**(4): 396-404.
3. Fauziah Abdullah, Norlaili Abdul Aziz, Su TT. Factors related to poor practice of pap smear screening among secondary school teachers in Malaysia. *Asian Pacific J Cancer Prev* 2011; **12**: 1347-1352.
4. Ministry of Health, Malaysia. The Third National Health Morbidity Survey. Women's Health, 2006.
5. Damiani G, Federico B, Basso D, et al. Socioeconomic disparities in the uptake of breast and cervical cancer screening in Italy: A cross sectional study. *BMC Public Health* 2012; **12**: 99-109.
6. Nguyen TT, McPhee SJ, Tram Lam TN, Mock J. Predictors of cervical pap smear screening awareness, intention, and receipt among Vietnamese-American women. *Am J Prev Med* 2006; **23**(3): 207-214.
7. Al-Naggar, Redhwan Ahmed, Chen R. Practice and barriers towards cervical cancer screening among university staff at a Malaysian university. *J Community Med Health Edu* 2012; **2**:120-126.
8. Kaku M, Mathew A, Rajan B. Impact of socio-economic factors in delayed reporting and late-stage presentation among patients with cervix cancer in a major cancer hospital in South India. *Asian Pacific J Cancer Prev* 2008; **9**: 589-594.
9. Maree JE, Lu, XM, Wright SCD. Combining breast and cervical screening in an attempt to increase cervical screening uptake. An intervention study in a South African context. *European Journal of Cancer Care* 2012; **21**: 78-86.
10. Qi V, Phillips SP, Hopman WM. Determinants of a healthy lifestyle and use of preventive screening in Canada. *BMC Public Health* 2006; **6**: 275-282.
11. Dubikaytis T, Larivaara M, Kuznetsova O, Hemminki E. Inequalities in health and health service utilisation among reproductive age women in St. Petersburg, Russia: a cross-sectional study. *BMC Health Services Research* 2010; **10**: 307-314.
12. Chee HL, Rashidah S, Shamsuddin K, Intan O. Factors related to the practice of breast self examination (BSE) and Pap Smear screening among Malaysian women workers in selected electronics factories. *BMC Women's Health* 2003; **3**: 3-13.
13. Nwankwo KC, Aniebue UU, Aguwa EN, Anarado AN, Agunwah E. Knowledge attitude and practice of cervical cancer screening among urban and rural Nigerian women: a call for education and mass screening. *European Journal of Cancer Care* 2011; **20**: 362-367.
14. Aniebue PN, Aniebue UU. Awareness and practice of cervical cancer screening among female undergraduate students in a Nigerian university. *J Canc Educ* 2010; **25**: 106-108.



15. Wong LP, Wong YL, Low WY, Khoo EM, Shib R. Knowledge and awareness of cervical cancer and screening among Malaysian women who have never had a pap smear : A qualitative study. *Singapore Med J* 2009; **50**: 49-53.
16. Lyimo FS, Beran TN. Demographic, knowledge, attitudinal, and accessibility factors associated with uptake of cervical cancer screening among women in a rural district of Tanzania: Three public policy implications. *Public Health* 2012; **12**: 22-30.
17. Leung SSK, Leung I. Cervical cancer screening: knowledge, health perception and attendance rate among Hong Kong Chinese women. *International journal of Women's Health* 2010; **2**: 221-228.
18. Margot AJB, Tacken JCC, Braspenning RPMG et al. Uptake of cervical cancer screening in The Netherlands is mainly influenced by women's beliefs about the screening and by the inviting organization. *European Journal of Public Health* 2006; **17**(2): 178-185.
19. Abotchie PN, Shokar NK. Cervical cancer screening among college students in Ghana: knowledge and health beliefs. *Int J Gynecol Cancer* 2009; **19**(3): 412-416.
20. Logan L, Mcilpatrick S. Exploring women's knowledge experiences and perception of cervical cancer screening in an area of social deprivation. *European Journal of Cancer Care* 2011; **20**: 720-727.
21. Al-Naggar, Redhwan Ahmed, Low WY & Zaleha Md Isa. Knowledge and barriers towards cervical cancer screening among young women in Malaysia. *Asian Pacific J Cancer Prev* 2011; **11**: 867-873.
22. Olesen SC, Butterworth P, Jacomb P, Tait RJ. Personal factors influence use of cervical cancer screening services: epidemiological survey and linked administrative data address the limitations of previous research. *BMC Health Services Research* 2012; **12**: 34-42.
23. Ni Riain A, Steward M, Phelan D, Bury G, Mulcahy F. Cervical Smears: comparison of knowledge and practice sample of a general practice sample with a high-risk group. *International Journal of STD and AIDS* 2001; **12**: 171-175.
24. Reyes-Ortiz CA, Markides KS. Socioeconomic factors, immigration status, and cancer screening among Mexican American women aged 75 and older. *Health Care Women Int.* 2010; **31**: 1068-1081.
25. Chong PN, Krishnan M, Hong, CY, Swah TS. Knowledge and Practice of Breast Cancer Screening Amongst Public Health Nurses in Singapore. *Singapore Med J* 2002; **43**(10): 509-516.
26. Chan C, Ho SC, Chan SG, Yip YB, Wong FC, Cheng F. Factors affecting uptake of cervical and breast cancer screening among perimenopausal women in Hong Kong. *Hong Kong Med J* 2002; **8**(5): 334-341.
27. Lee K, Lim HT, Park SM. Factors associated with use of breast cancer screening services by women aged  $\geq 40$  years in Korea: The Third Korea National Health and Nutrition Examination Survey 2005 (KNHANES III). *BMC Cancer* 2010; **10**:144-154.
28. Oran NT, Can HO, Senuzun F, Aylaz RD. Health promotion lifestyle and cancer screening behaviors: A survey among academicians women. *Asian Pacific Journal of Cancer Prevention* 2008; **9**: 515-518.
29. Erbil N, Tezcan Y, Gur EN, Yildirim M, Alis N. Factors affecting cervical screening among Turkish women. *Asian Pacific J Cancer Prev* 2010; **11**: 1641-1644.
30. Parsa P, Mirnalini Kandiah, Nor Afiah Mohd Zulkefli, Hejar Abdul Rahman. Knowledge and behavior regarding breast cancer screening among female teachers in Selangor, Malaysia. *Asian Pacific J Cancer Prev* 2008; **9**: 221-228.
31. Winkler J, Bingham A, Coffey P, Handwerker WP. Women's participation in a cervical cancer screening program in Northern Peru. *Oxford Journal Health Education Research* 2008; **23**(1): 10-24.
32. Pelcastre-Villafuerte BE, Tirado-Gómez LL, Mohar-Betancourt A, López-



- Cervantes M. Cervical cancer: a qualitative study on subjectivity, family, gender and health services. *Reproductive Health* 2007; 4: 2-12.
33. Leyva M, Byrd T, Tarwater P. Attitudes towards cervical cancer screening: a study of beliefs among women in Mexico. *Californian Journal of Health Promotion* 2006; 4(2): 13-24.
34. Shamsuddin K, Zailiza S. Factors associated with pap smear screening among women workers in University Kebangsaan Malaysia [Abstract]. *Medical Journal of Malaysia* 2001; 56: 115.
35. Rampal L, Rampal S, Azhar MZ, Rahman AR. Prevalence, awareness, treatment and control of hypertension in Malaysia: a national study of 16,440 subjects. *Public Health* 2008; 122(1): 11-18.
36. Rosediani Muhamad, RanimahYahya, Harmy Mohamed Yusoff. Knowledge, attitude and practice on cardiovascular disease among women in North-Eastcoast Malaysia. *International Journal of Collaborative Research on Internal Medicine & Public Health* 2012; 4(1): 85-98.