ORIGINAL ARTICLE

Determinants of cervical cancer screening utilization among women aged 30-45 years in Blantyre district, Malawi

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Abstract

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Cervical cancer screening is the single important public health strategy to reduce cervical cancer incidence and subsequent mortality. In Malawi, low utilization leads to high mortality rate (80%). This cross-sectional community based study aimed at identifying determinants to utilization of cervical cancer screening services among women aged 30-45 years in Blantyre district, Malawi.

A total of 257 selected women (134 urban and 123 rural) participated in the study and face to face interview was conducted using a structured questionnaire to gather information on socio-demographic, knowledge, perception, health locus control, and social support from 30th April 2015 to 16th May 2015. Data were analyzed using Chi-square test and multiple logistic regression.

Only 13.2% of the women had ever been screened for cervical cancer screening. The main reasons for not being screened among the respondents who were not screened yet included lack of interest (39.7%), lack of knowledge (33.5%) and no reason given (19.8%). The most significant determinants to utilization were older age (Adj.OR=7.05, 95% CI=2.31-21.6), having more than one sex partners (Adj.OR=3.24, 95% CI=1.31-8.0), use of oral contraceptive (Adj.OR=2.60, 95% CI=1.02-6.61), having heard of cervical cancer screening (Adj.OR=17.7, 95% CI=2.18-144) and higher level of knowledge (Adj.OR=7.37, 95% CI=2.44-22.2).

In conclusion, there is low utilization of cervical cancer screening among women in Blantyre district. There is need for effective community based cervical screening, education and awareness for good and successful utilization of cervical cancer screening in Blantyre District and Malawi.

Keywords: Cervical cancer screening utilization, prevalence, determinants

ปัจจัยของการตรวจคัดกรองมะเร็งปากมดลูกในกลุ่มสตรีวัย 30-45 ปี ในอำเภอ เบียนไทร์ ประเทศมาลาวี

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บทคัดย่อ

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ปัจจัยของการตรวจคัดกรองมะเร็งปากมดลูกในกลุ่มสตรีวัย 30-45 ปี ในอำเภอ เบียนไทร์ ประเทศมาลาวี
ว สาธารณสุขและการพัฒนา.2558;13 (3):19-34

การตรวจคัดกรองมะเร็งปากมดลูกเป็นกลยุทธ์ด้านสาธารณสุขที่สำคัญที่สามารถจะลดอัตราการเกิดมะเร็งปากมดลูกซึ่งสามารถนำไปสู่การเสียชีวิต ในประเทศมาลาวีการตรวจคัดกรองมะเร็งปากมดลูกที่ต่ำนำไปสู่อัตราการตายสูงถึงร้อยละ 80 การศึกษาในครั้งนี้เป็นการเก็บข้อมูลแบบภาคตัดขวางโดยมีวัตถุประสงค์เพื่อหาปัจจัยที่มีผลต่อการรับบริการตรวจคัดกรองมะเร็งปากมดลูกในกลุ่มผู้หญิงอายุ 30-45 ปี ในอำเภอเบียนไทร์ ประเทศ มาลาวี

ผู้หญิงจำนวน 257 คน (134 คนจากชุมชนเมืองและ 123 คนจากชนบท) ได้รับการสุ่มเลือกในการศึกษา การเก็บข้อมูลใช้การสัมภาษณ์โดยใช้แบบสอบถามเพื่อรวบรวมข้อมูลทางสังคมและประชากร ความรู้ การรับรู้ความสามารถในการควบคุมตนเองด้านสุขภาพ การสนับสนุนทางสังคม ดำเนินการเก็บรวบรวมข้อมูลในช่วง 30 เมษายน 2015 ถึง 16 พฤษภาคม 2015 วิเคราะห์ข้อมูลโดยใช้การทดสอบไคสแควร์ และการวิเคราะห์ถดถอยโลจิสติกพหุคูณ

ผู้หญิงที่เคยได้รับการตรวจคัดกรองมะเร็งปากมดลูกมีเพียงร้อยละ 13.2 เหตุผลสำคัญที่ทำให้ไม่ได้รับการตรวจคัดกรองประกอบด้วย การขาดความสนใจ (39.7%) การขาดความรู้ (33.5%) และไม่มีเหตุผลที่กำหนด (19.8%) ปัจจัยสำคัญในการรับการตรวจคัดกรองมะเร็งปากมดลูกที่สำคัญ คืออายุที่เพิ่มขึ้น (Adj.OR=7.05, 95% CI=2.31-21.6) การมีจำนวนคู่นอนมากกว่าหนึ่งคน (Adj.OR=3.24, 95% CI=1.31-8.0) การใช้ยาคุมกำเนิด (Adj.OR=2.60, 95% CI=1.02-6.61) การเคยได้ยินเรื่องการตรวจคัดกรองมะเร็งปากมดลูก (Adj.OR=17.7, 95% CI=2.18-144) และการมีความรู้สูง (Adj.OR=7.37, 95% CI= 2.44-22.2)

สรุปได้ว่าการตรวจคัดกรองมะเร็งปากมดลูกในกลุ่มผู้หญิงในอำเภอเบียนไทร์ยังมีจำนวนน้อยมาก ดังนั้นจึงมีความจำเป็นอย่างยิ่งที่ต้องมีการส่งเสริมการตรวจคัดกรองมะเร็งปากมดลูก โดยการส่งเสริมความรู้และสร้างความตระหนักเรื่องการตรวจคัดกรองมะเร็งปากมดลูกในแต่ละชุมชน ของอำเภอ เบียนไทร์ ประเทศ มาลาวี

คำสำคัญ: การรับบริการเพื่อตรวจคัดกรองมะเร็งปากมดลูก ปัจจัย ความรู้ อายุ

Introduction

Cervical cancer screening is capable of detecting cancerous cells at early stages where treatment is effective, uncomplicated and cheaper[1]. However, its utilization in developing countries including Malawi has been unsatisfactory[2]. While developed countries like the United States have experienced more than 75% reduction in both incidence and mortality rates after introduction of regular cervical cancer screening, the trend is different in developing countries as it accounts for more than 80% of the global burden of the disease and where only 5% of women are screened for cervical cancer[3]. It is estimated that globally every year 530,000 new cases of cervical cancer are diagnosed and 270,000 women die from the disease[4].

Africa is known to have 250 million women aged 15 years and older at risk of developing cervical cancer and Sub-Saharan region has the highest incidence rates of cervical cancer in the world[5]. In Malawi, there are 4.50 million women aged 15 and older likely to develop cervical cancer. The disease has maintained an increasing trend from 25% in 2000-2002 to 45% in 2007-2009 and likewise the age standardized incidence per 100,000 has increased from 10 in 1999-2002, to 35 in 2007-2010[6]. In addition, recent reports indicated that Malawi has the highest age standardized rates per 100,000 of incidence and mortality (76 and 50, respectively) in Africa and 80% of women report to hospital when the disease is inoperable and eventually they die[7-9].

In Malawi, program on cervical cancer prevention using cervical cancer screening first started in 1999 and in 2004 the Ministry of Health implemented a screen and treat program using Visual Inspection with Acetic Acid (VIA) targeting women aged 30-45 years[6,10]. This method is simple and allows immediate result and treatment be given to a woman and has increased sensitivity in detecting pre-invasive lesions[5,11,12]. However, utilization on cervical cancer screening is unsatisfactory as evidenced by increase in incidence and late presentation to hospital resulting in 80% mortality rate from the disease[13,14]. Two previous studies done in the district on women 18 years and older found that only 24.7% and 33.6% of women had previously been screened[15,16]. Studies have revealed a number of factors affecting utilization of cervical cancer screening like lack of knowledge, unavailability of screening services, bad attitude of health care workers, low perceived susceptibility to disease[9,17-20].

This study aimed at determining the prevalence of women aged 30-45 years as within the target population according to Malawi Cervical Cancer Prevention Program that utilize cervical cancer screening and identify determinants to utilization of cervical cancer screening in Blantyre District, Malawi. The findings will assist in the development of cervical cancer screening interventions which are socially and culturally acceptable thereby able to increase utilization of cervical cancer screening and save lives arising from this preventable disease.

Methods

A cross-sectional community based study was used to determine prevalence and determinants to utilization of cervical cancer screening among women aged 30-45 years from urban and rural areas of Blantyre District, Malawi. Using purposive sampling, a total of 257 women were recruited into the study. One

hundred and twenty three from rural and 134 from urban areas. Data were collected from 30th April 2015 to 16th May, 2015 by the researcher and two trained research assistants by conducting face to face interview. Structured questionnaire developed by researcher from the review of related documents and research articles was used for data collection. Both questionnaires in English and local language were checked for content validity by the advisor team and experts at Mahidol University and in Malawi. Reliability was tested on 30 women of similar characteristics to the sample and analyzed by calculating KR-20 (0.624) and Cronbach's Alpha Coefficient (α=0.654). Ethical approval was obtained from Mahidol University, Human Research Ethics Committee and in Malawi from National Health Sciences Research Committee. Recruitment into the study was on voluntary basis and written informed consent was obtained from each respondent prior to interview.

In this study the following operational definitions were employed: utilization of cervical cancer screening referred to women having ever been screened for cervical cancer in their life time. Knowledge on cervical cancer was referred to respondent level of information on cause of cervical cancer, signs and symptoms, risk factors associated with cervical cancer and eligibility to have cervical cancer screening. The Perception regarding cervical cancer and screening was measured in areas of perceived risk, severity, benefits, barriers and cues to action. A three point rating scale was used to measure women perception on cervical cancer and screening. Health locus control referred to the respondent belief of their capability in utilizing cervical cancer screening. Social support was considered as the support the respondent receives

from family members, friends or religion and its influence to utilize cervical cancer screening.

Descriptive statistics were used to calculate frequency and percentage. Chi-square test examined the association between the independent variables and dependent variable and statistical significance was considered with p-value <0.05. Co-variates with p-value <0.20 in univariate analysis were entered into final multiple logistic regression using backward method to identify predictors to utilization of cervical cancer screening. Age groups, area of residence, number of sex partners, occupation, use of oral contraceptive, heard of cervical screening, perceived benefit and knowledge level were entered in the model.

Results

Half of the respondents were aged 30-34 years, and about 86.8% of subjects were married and the education level was low, with about 69% having no formal education or primary school (Table 1). In terms of pregnancy history and number of sex partners, about 38 % of the subject reported being pregnant 5 or more times, 40% had 3-4 children and 42% had 2-3 sex partners.

Table 2 shows practice of utilization of cervical cancer screening. Most women had heard about cervical cancer and screening (72.4%), but the subjects who had been screened was only 13.2%. The majority had been screened at Queens Elizabeth Central Hospital (52.9%) followed by primary health care units (35.5%) and had been done by Visual Inspection with Acetic Acid test (VIA) (80%). Most women were motivated by the health care provider (64.7%). Among the women not screened yet, their main reasons were lack of interest (39.7%), and lack

of knowledge (33.5%). Of the respondents that had heard about cervical cancer screening (n=186), only 34 had utilized cervical cancer screening. Overall women hadhigh level of knowledge perception, and health locus control. In particular, majority of subjects reported higher level of social support towards cervical cancer and screening (Table 3).

The relationship of independent variables with cervical cancer screening utilization was evaluated and shown in Table 4 and 5. Women having cervical cancer service were more likely to live in urban area, be older, have used oral contraceptive, have heard of cervical cancer screening and have higher level of knowledge on cervical cancer, compared to those not having cervical cancer screening.

In the multiple logistic regression analysis, selected variables with p<0.20 related to cervical cancer screening utilization are shown in Table 6. Women aged 41-45 were 7.05 times more likely to utilize cervical cancer screening than women aged 35-40 (95% CI=2.31-21.6). Those Women that had 2 or more sex partners were 3.24 more likely to utilize cervical cancer screening than those with 0-1 sex partners (95% CI=1.31-8.0). In addition, women that previously or are currently using oral contraceptives were 2.60 times more likely to utilize cervical cancer screening than non-users users of oral contraceptives (95% CI=1.02-6.61). The women that ever heard about cervical cancer screening were 17.7 times more likely to use cervical cancer screening than those that never heard of cervical cancer and screening (95% CI= 2.18-144). Lastly, women with high level of knowledge were 7.37 times more likely to utilize cervical cancer screening than those with low level knowledge on cervical cancer and screening (95% CI=2.44-22.2).

Table 1 Percentage of respondents by socio-demographic factors

Variables	Number (n=257)	Percentage
Place of residence		
Urban	134	52.1
Rural	123	47.9
Age		
30-34	129	50.2
35-40	83	32.3
41-45	45	17.5
Marital status		
Married	223	86.8
Unmarried	34	13.2
Respondent education		
Never attended	44	17.1
Primary	135	52.5
Secondary or higher	78	30.4
Number of pregnancies		
0-2	64	24.9
3-4	95	37.1
5+	98	38.0
Number of children		
0-2	85	33.1
3-4	103	40.1
5+	69	26.8
Use of oral contraceptive		
No	211	82.1
Yes	46	17.9
Number of sexual partners		
0-1	134	52.1
2-3	108	42.1
4+	15	5.8

Table 2   Percentage of respondents by related factors of cervical cancer screening

Variable	Number	Percentage
History of previous cervical cancer screening	223	86.8
No	34	13.2
Yes		
Type of test used during previous screening		
Pap smear	7	20
Visual Inspection with Acetic Acid (VIA)	27	80
Place where previous screening was done		
Queens Elizabeth central hospital	17	52.9
District hospital	4	8.7
Primary health care units	12	35.5
Private clinic	1	2.9
How respondents got motivated to get screened		
Health care provider	22	64.7
Husband/friends	12	35.3
Reasons for not being screened		
Lack of interest	102	39.7
Lack of knowledge	86	33.5
No reason given	55	19.8
Unavailability of screening service	10	6.2
Religious beliefs	2	0.8
Having heard about cervical cancer and screening		
No	75	27.6
Yes	182	72.4

Discussion

Table 3   Percentage of respondents by knowledge, perception, health locus control, and social support on cervical cancer and its screening

Variable	Number	Percentage
Knowledge		
High level	110	50.2
Low level	109	49.8
Perceived risk		
High level	136	52.9
Low level	121	47.1
Perceived severity		
High level	133	51.8
Low level	124	48.2
Perceived benefit		
High level	196	76.3
Low level	61	23.7
Perceived barrier		
High level	156	60.7
Low level	101	39.3
Health Locus control		
High level	187	72.8
Low level	70	27.2
Social support		
High level	234	91.1
Low level	23	8.9

Median value was used to categorize the variables into two levels

Table 4   Association between socio-demographic factors and utilization of cervical cancer screening

	Utilization		Chi-square	P value
	Yes	**No**		
	n (%)	**n (%)**		
Place of residence				
Urban	24 (70.6)	110 (49.3)	5.34	0.021
Rural	10 (29.4)	113 (50.7)		
Age				
30-34	12 (35.3)	117 (52.5)	6.66	0.036
35-40	11 (32.4)	72 (32.3)		
41-45	11 (32.4)	34 (15.2)		
Marital status				
Married	28 (82.4)	195 (87.4)	0.66	0.414
Unmarried	6 (17.6)	28 (12.6)		
Education				
Never attended	4 (11.8)	40 (17.9)	0.97	0.615†
Primary	18 (52.9)	117 (52.5)		
Secondary	12 (35.3)	66 (29.6)		
Occupation				
Unemployed	18 (52.9)	144 (64.6)	1.71	0.191
Employed	16 (47.1)	79 (35.4)		
Number of pregnancies				
>4	21 (61.8)	138 (61.9)	0.75	0.989
≤4	13 (38.2)	85 (38.1)		
Number of children				
0-2	9 (26.5)	76 (34.1)	0.77	0.38
>2	25 (73.5)	147 (65.9)		
Use of oral contraceptive				
No	23 (67.6)	188 (84.1)	5.57	0.018
Yes	11 (32.4)	35 (15.7)		
Number of sexual partners				
0-1	14 (41.2)	120 (53.8)	1.88	0.169
2+	20 (58.8)	103 (46.2)		
Having heard of cervical cancer screening				
No	1 (2.9)	70 (31.4)	11.94	<0.001
Yes	33 (97.1)	153 (68.6)		

†Fishers exact test was used for analysis as appropriate

Table 5   Association between knowledge, perception, health locus control and social support and utilization of cervical cancer screening

	Utilization		Chi-square	P value
	Yes (n=34)	No (n=223)		
	n (%)	n (%)		
Knowledge				
High (≥11)	29 (85.3)	110 (50.2)	14.61	<0.001†
Low (<11)	5(14.7)	109 (49.8)		
Perceived risk				
High (≥20)	18 (52.9)	118 (52.9)	0.00	0.998
Low (<20)	16 (47.1)	105 (47.1)		
Perceived severity				
High (≥23)	20 (58.8)	113 (50.7)	0.78	0.376
Low (<23)	14 (41.2)	110 (49.3)		
Perceived benefits				
High (≥23)	29 (85.3)	167 (74.9)	1.76	0.184
Low (<23)	5 (14.7)	56 (25.1)		
Perceived barrier				
High (≥31)	23 (67.9)	133 (59.6)	0.79	0.373
Low (<31)	11 (32.1)	90 (40.4)		
Health locus control				
High (≥27)	27 (79.4)	160 (71.7)	0.87	0.350
Low (<27)	7 (20.6)	63 (28.3)		
Social support				
High(≥12)	32 (94.1)	202(90.6)	0.45	0.749†
Low(<12)	2 (5.9)	21 (9.4)		

†Fishers exact was used appropriately

Table 6   Adjusted odds ratio from multiple logistic regression for cervical cancer screening utilization

	Adj.OR	(95% CI)	p-value
Age groups			
30-34	1		
35-40	1.43	(0.55, 3.73)	
41-45	7.05	(2.31, 21.6)	0.001
Number of sex partners			
0-1	1		
≥2	3.24	(1.31, 8.00)	0.011
Having heard of cervical cancer screening			
No	1		
Yes	17.7	(2.18, 144)	0.007
Use of oral contraceptives			
No	1		
Yes	2.60	(1.02, 6.61)	0.045
Knowledge level			
Low	1		
High	7.37	(2.44, 22.2)	<0.001

The study provides information about prevalence and determinants of cervical cancer screening utilization among women aged 30-45 years in Blantyre District, Malawi. The results have demonstrated low utilization rate within the target population. Women above 40 years were more responsive to be screened compared to those aged 30-40. Furthermore, women that used oral contraceptive and had more than 2 lifetime sex partners had previously been screened and high level knowledge on cervical cancer and screening positively influenced women to utilize cervical cancer screening.

The prevalence of cervical cancer screening was pretty lower (13.2%) than that of the previous studies conducted in the same district of 24.7%[21] and 33.6%[16]. It can be explained by the age of study population. The study population of this study was 30 to 45 years according to Malawi National Guidelines of Cervical Cancer Prevention Program, while those of the other studies were 18 years and older[10,15,16]. Secondly, due to the different study designs, the previous studies were health facility based with subjects that were already exposed to information on cervical cancer and screening and very likely to be screened unlike in the present as it was community based with subjects not exposed to information and not readily using reproductive health services. Similar to other African countries like Kenya, Tanzania and

Nigeria low utilization rates of 22.6%,12.3% and 4.2% respectively ,have been reported among women aged 18 and above[17,22,23].

Among the factors significantly related to cervical cancer utilization in this study firstly, age was positively associated with odds of screening with women aged 41-45 years having high odds of being screened for cervical cancer. This finding is similar to those of other studies that demonstrated increasing age was strongly associated with utilization of cervical cancer screening[24-27]. This could be as a result of older women having frequent contact with reproductive health services due to their longer fertility history[25]. The current study findings differ from other studies that showed young women being more responsive in uptake of cervical cancer and screening[3,28]. Despite the conflicting findings on the association of age and utilization of cervical cancer screening, the current findings are encouraging as evidence from systematic review revealed cervical cancer screening offers more benefits and reduces incidence and mortality rates by 60-80% in women older than 40 years and further reduce invasive form of cervical cancer by 90%[29].

Secondly, use of oral contraceptive for more than 5 years increases risk of cervical cancer[30,31]. Despite in the current study duration of use was not taken into consideration it is encouraging that women that had used or currently using oral contraceptive were screened than non-users. This suggests that women are aware of their risk of developing cervical cancer as a result of using oral contraceptive. In support of this almost half of the respondents (49.4%) agreed that use of oral contraceptive increases risk of developing cervical cancer. Consistent to this finding a study in Mexico found that women that obtained their oral contraceptive pills from clinic utilized preventive screening like cervical cancer more than those that obtained their pills from over the counter as cervical cancer screening is a standard procedure in most clinics[9]. As expected, women that have access to reproductive health services like family planning are more inclined to utilize preventive screening like cervical cancer screening. In Malawi, women have access to family planning methods through use of health facilities and where they would more likely get information on the risk of using oral contraceptive and cervical cancer.

In addition, having multiple lifetime sex partners increases risk of acquiring Human PapillomaVirus (HPV) infection which is the primary cause of cervical cancer[32]. In this study women who had 2 or more lifetime sex partners had previously been screened for cervical cancer though this is inconsistent with a finding in Brazil where researchers studying risky sexual behavior's found that women who had multiple life time sex partners had no pap smear 3 years prior to study[33]. The result from the current study is of relevance considering multiple life-time sex partners increases risk for cervical cancer[31,34].

Lastly, a number of studies have highlighted the association between having heard of cervical cancer and screening and high level of knowledge on cervical cancer to utilization of screening[15-17,23,35-39]. Likewise in the current study those women that demonstrated high level knowledge were more likely to use cervical cancer screening unlike those with low level knowledge. Therefore, this calls for effective and efficient ways of disseminating information on cervical cancer and screening in consideration that 34% of women indicate that lack of knowledge was the reason they

had not been screened. Increase in knowledge level of cervical cancer and screening in relation to cause, risk factors, and signs and symptoms can increase uptake of cervical cancer screening as demonstrated in the present study. As it was reported by 43 % of women that their source of information was the health care provider, this requires the health care provider to utilize every opportunity when in contact with women in disseminating information thereby increase their knowledge of cervical cancer and screening. Other channels like radio, community leaders and friends as revealed by women be utilized in sharing information.

Several study limitations should be considered in interpreting the present study results. Being a cross-sectional study it is difficult to make inferential causal link of the independent variables to outcome. The study population is not a representative of all women aged 30-45 years in Malawi therefore cannot generalize the findings of this study. Due to the sensitive nature of some questions especially on number of life-time partners, there was a possibility of information bias that can influence the outcome of the study.

Nevertheless the study had some strengths firstly, it is the first study to be conducted in the district among women in the target population for cervical cancer prevention program Malawi. Secondly use of community based approach compared to the other two previous studies that were facility based[16, 21]. This approach allowed the researcher to reach for women that were not readily using reproductive health services that to some extent are hard to reach.

Conclusion

There is need for multi-faceted approach to ensure increased utilization of cervical cancer screening within the target population. Community leaders, health care providers and policy makers must play their role in encouraging, ensuring availability of screening services among these women. Lastly future research is required to gain deeper understanding how these results determine utilization of cervical cancer screening.

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