



AWARENESS AND PREVALENCE OF CERVICAL DISEASES AMONG URBAN AND RURAL MOTHERS IN CENTRAL MYANMAR

Pathology

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ABSTRACT

Cervical diseases including cancer are important public health problem and one of the most preventable and treatable cancers. The possibility of eradication by identification and treatment of precancerous changes was attractive and led to widespread application of cervical Papanicolaou/PAP smears to population screening throughout the world. Therefore, we aimed to assess the awareness and prevalence of cervical diseases among urban and rural mothers in Central Myanmar. This study was community and laboratory-based descriptive and analytical study utilizing pre-tested questionnaire to collect knowledge, awareness and risk behaviors regarding cervical diseases and cervical screening for cervical cancer prevention. 227 participants were enrolled for visual examination of uterine cervix and PAP smears detection by simple random selection of volunteer mothers in urban and rural areas. The results suggested that awareness and specific knowledge related to cervical diseases including cervical cancer and cervical screening is low. Moreover, respondents from rural areas were mainly illiterate manual workers and there was significant correlation with poor knowledge and awareness of cancer, cervical diseases including cervical cancer, knowledge about preventable/curable cancer and benefits of cervical screening ($p < 0.05$). PAP smears revealed that there is no case of cervical cancer. The cytological data showed that prevalence of inflammatory cervical PAP smears was remarkably more in rural mothers. Appropriate information, education and communication strategies must be packaged towards these women, in order to stimulate regular screening among Myanmar women. There must be aggressive health promotion intervention designed to increase awareness, correct impressions and concepts about cervical diseases including cancer and benefit of cervical screening in Myanmar community.

KEYWORDS

Awareness, prevalence and cervical screening

INTRODUCTION

Nowadays, premature deaths due to preventable and treatable cancer are leading role of mortality globally. Cervical cancer is the fourth most common cancer in women globally with around 660 000 new cases and around 350 000 deaths in 2022. (1) The highest rates of cervical cancer incidence and mortality are in low- and middle-income countries. The most common technique recommended by WHO is cervical cancer screening programs with PAP smear or human papillomavirus-deoxyribonucleic acid test, which had been shown to decrease the incidence of cervical cancer. (2) The Asian countries are trying to establish optimal screening programs for cervical cancer and to improve the coverage rates of screening, in alignment with the national conditions and demands of each country not including Nepal, Myanmar and Philippines where high burden of cervical cancer occurred (3). Thus, early diagnosis with proper screening to timely and comprehensive treatment together with reducing the risk factors and vaccination are necessary for premature cancer inequalities. In Myanmar, late diagnosis is significant for high death rates and most of new cases are inoperable. Currently, there is no well-organized national cervical cancer screening program, albeit some opportunistic screening programs are offered in some tertiary hospitals and pilot programs in departmental clinic, as secondary prevention measures (screening and pre-cancer treatment). The screening tests [including visual inspection with acetic acid (VIA), Pap smear cytology and occasional human papillomavirus (HPV) DNA testing] and treatment methods (cryotherapy for treatment of pre-cancerous lesions) are included (4, 5). Moreover, there are marked socioeconomic variations in the risk of female reproductive cancers behavior. Socioeconomic differences in screening practices tend to decrease when participation is promoted, cultural and economic barriers are removed, and social support is offered. In both developed and developing countries, women of low socioeconomic status have a higher-than-average risk of cervical cancer, and a lower-than-average participation in PAP smear screening. (1) It is not surprising then that the incidence of cervical cancer varies dramatically between regions of the world, as well as between different socio-demographic groups within a given region. There is wide variation in the level of effective coverage across countries, from over 80% in Austria and Luxembourg to 1% or less in Bangladesh, Ethiopia, and Myanmar (6). Therefore, we aimed to detect the awareness and prevalence of cervical diseases among urban and rural mothers in central Myanmar for further effective management, prevention and control of cervical diseases especially cervical cancer in Myanmar community.

Methodology

The study was a community and laboratory-based descriptive and

analytical study utilizing a pretested questionnaire, to collect information about specific knowledge, attitudes and awareness of cervical diseases among urban and rural mothers and perception of benefits of screening and screening activities of the respondents in Central Myanmar (Nay Pyi Taw). Informed consent was sought from all who accepted to participate. Total 227 randomly selected volunteer mothers without serious illness, aged between 20-60 years participated in this study. The study location was Zayathiri Township, Nay Pyi Taw including (2) Wards and (11) villages. The pretested questionnaires constructed in both English and Myanmar languages were administered on the participants with the help of trained research assistants. The study sought to measure certain socio-demographic characteristics of the participants, their level of awareness, risk behaviors and specific knowledge regarding cervical diseases and awareness of cervical screening for cervical cancer prevention. Measures for the study were conceptually derived from health belief model construct, in which modifying factor variables such as knowledge, attitudes and awareness were included. Then, visual examination of uterine cervix and PAP smearing were done. The screening test for cervical diseases was done by Papanicolaou cytological staining method according to manufacturer's instruction by using Pap staining kit (Sigma-Aldrich, UK). The Pap smear results were classified according to The Bethesda System (TBS) for cervical cytological diagnoses. After completion of data entry; errors and data entry were checked by reviewing the questionnaire forms. After data cleaning, the data were analyzed by using SPSS version 16.0. Mean $\pm$ SD, range and Chi squared test were calculated. The significance level was set at ($p \leq 0.05$) for all statistical procedures.

RESULTS

Sociodemographic Characteristics of the Respondents

Total 227 randomly selected volunteer mothers without serious illness, aged between 20-60 years, live in Naypyitaw were participated and mean age was 33.84 years. Most of the respondents, 214 (94.3%) were Bamar, 223 (98.2%) were Buddhist, and 188 (82.8%) respondents have primary, secondary, high school and higher education like university levels. Most of illiterate respondents (33/14.5% out of 39/17.2%), low family income (less than 50000 kyats/month) group (44/19.4% out of 57/25.1%), manual workers (74/32.6% out of 102/44.9%) were from rural areas of Naypyitaw. 202(93.4%) of participants had single marriage and their age of first marriage under twenty years was 97 (42.7%).

Awareness And Risk Behaviors Of Mothers

Exploring the various dimensions of knowledge variables describing general awareness, specific knowledge about cervical diseases and risk

behaviors among mothers from urban and rural areas of Naypyitaw were done. It showed that 213 (93.8%) and 221 (97.4%) of participants had no history of smoking and alcohol drinking, respectively. The youngest age of menarche was 11 year-old and mean age of menarche was 14.93 years. There were 211 (93%) of participants with regular menstrual history. 150 mothers (66.1%) had history of two or more pregnancies in past with 101 (44.5%) out of 193 (85%) participants who breast feed the baby, were from rural areas. Although 68 (30%) of respondents had history of abortion, but only 27 (11.9%) had D&C history. Regarding history of contraceptive usage last 5 years, 168 (74%) had positive response with Depo-3monthly injection was first ranking type of contraception (104/45.8%). Moreover, 115 (50.7%) of respondents had current contraceptive usage history with Depo-3monthly injection was first ranking type of contraception (62/27.3%). Ninety percent of participants had no history of vaginal douching and vaginal pessaries. Ninety five percent of respondents had history of current sex with spouse and 31 (13.7%) had more than one sexual partner. There was 219 (96.5%) of last time sex without usage of condom. More than ninety percent of respondents gave no history of STD and partner's STD. Ninety five percent had no history of partner's circumcision. Interestingly, history of vaginal douching, vaginal pessaries, and partner's circumcision were present in respondents from urban areas. Regarding the risky gynaecological symptoms, 93 (41%), 52 (22.9%), 12 (5.3%), 69 (30.4%), 30 (13.2%), 4 (1.8%) and 28 (12.3%) had history of vaginal discharge, pruritus vulvae, bleeding per vagina, pain in SPA, dysprunia, post coital bleeding and gynecological diseases, respectively.

Awareness Of Cervical Screening For Cervical Cancer Prevention

The results from this study showed that 163 (71.8%) and 144 (63.4%) of respondents, mainly respondents from urban areas than rural areas, had heard about cancer and cervical cancer (Table-1), respectively while 131 (57.7%) and 143 (63%) of participants respectively reported knowing the cervical diseases and cervical cancer are preventable and curable. In response to questionnaire item that about cervical screening, 85 (37.4%) and 63 (27.8%) of respondents respectively were able to provide correct response as heard about cervical screening (Table-1) and theses screening were done to prevent cervical cancer. 121 (53.3%) of respondents in the study reported to have cervical screening services from hospital and 52 (22.9%) thought that information about cervical screening services from midwives, 36 (15.9%) from nurses, 34 (15%) from doctors and 34 (15%) from all healthcare personals. Two hundred and seventeen (95.6%), 199 (87.7%) and 204 (89.9%) of respondents respectively reported the positive response to cervical screening needed to do without cervical diseases, regular cervical screening is necessary and regular cervical screening can prevent cervical cancer. But, 216 (95.2%) of participants and 199 (87.7%) of their friends or relatives had no history of cervical screening examination for cervical diseases.

Cytological Examination

Although 159 (70%) revealed apparently healthy cervix on vaginal examination, only 59 (26%) of respondents had normal cervical smears by Papanicolaou cytological staining method (Table-2). Out of 168 (74%) abnormal cellular smears, 101 (44.5%) were rural respondents. The results of Pap smears were normal or negative for intraepithelial lesion or malignancy (26%), inflammatory smears (28.2%), reparative cellular changes (2.2%), postpartum cellular changes (2.6%), postmenopausal cellular changes (0.4%), Atypical squamous cells of undetermined significance/ASC-US (15.9%), Atypical squamous cells, cannot exclude high-grade squamous intraepithelial lesion/ASC-H (13.2%), Atypical glandular cells/AGC (1.8%), Low-grade intraepithelial lesion/LSIL (3.1%) and High-grade intraepithelial lesion/HSIL (8%), respectively according to The Bethesda System (TBS) for reporting cervical or vaginal cytological diagnoses (Figure).

DISCUSSION

Cervical cancer is considered nearly completely preventable because of the highly effective primary (HPV vaccine) and secondary (screening) prevention measures. However, these measures have not been equitably implemented across and within country. High-quality screening programs are also important to prevent cervical cancer among unvaccinated women and for oncogenic subtypes not covered by the vaccine. The WHO recommends the screening of women aged 30 to 49 years-either through visual inspection with acetic acid in low-resource settings, a Papanicolaou test (cervical cytology) every 3 to 5 years, or HPV testing every 5 years- coupled with timely and

efficacious treatment of precancerous lesions. (7-9) The opportunities to prevent cervical cancer in resource-limited settings by adopting the combined vaccination and screening strategy, which has proven to be cost effective across several LMICs. (9-12) Moreover, the incidence of cervical cancer is quite high because prevention programs are either nonexistent or poorly implemented. The PAP smear test used as a screening method to detect cervical cancer is an effective way to prevent the development of cervical cancer, but awareness within the community about the PAP smear test is low. The PAP smear was normal or negative for intraepithelial lesion or malignancy (26%) and inflammatory or/and cellular changes smears (74 %) (Table-2). Preliminary data from out-patient departments/OPD patients who attended to public and private hospitals, Nay Pyi Taw (total of 2571 screening out patients from year 2019-2023) revealed that normal or negative for intraepithelial lesion or malignancy (5 %) and inflammation or/and cellular changes smears (95 %) indicated by the PAP smear test, respectively. It showed that percentage of inflammatory cervical PAP smears with or without cellular changes in hospital based cervical cancer screening of out-patients are higher than community-based volunteer married women. Few studies (13-15) reported that women with persistent inflammation should be appropriately treated; otherwise, the chance of development of cervical intraepithelial lesions increases. A repeat PAP smear should be taken after proper antibiotic treatment.

Most of the women had single marriage and their age of first marriage under twenty years was 42.7%. 13.7% had more than one sexual partner. And the mean age of first sex of urban women was older than that of rural women. Interestingly, history of vaginal douching, vaginal pessaries, and partner's circumcision were present in respondents from urban but not from rural areas ($p < 0.05$). While vaginal discharge was the most common complaint of the women in our study at 41%, similar to the rate in other studies. (15-17) These can be applicable as baseline data for cervical cancer prevention program regarding HPV vaccination as primary prevention measure.

The percentage of married women had heard about cancer including cervical cancer was not so high (Table-1). Most of them would like have cervical cancer screening at hospitals and common media of awareness of cervical cancer screening was health care personnel such as doctors, nurses and midwives, respectively. Some of women had some difficulties to go cervical cancer screening and their perceived barriers were financial difficulties and transportation difficulties. Therefore, these findings would help in implementing Myanmar national cervical cancer screening program in future. Although 85 (37.4%) and 63 (27.8%) of respondents respectively were able to provide correct response as heard about cervical screening and theses screening were done to prevent cervical cancer. 216 (95.2%) of participants had no history of cervical screening examination experience for cervical diseases. The awareness of cervical cancer screening was low albeit there was positive response to cervical screening needed to do without cervical diseases, regular cervical screening is necessary and regular cervical screening can prevent cervical cancer. Therefore, the appropriate information, education and communication strategies must be packaged towards these women especially from rural areas, in order to achieve early detection and treatment of cervical cancer.

Since its introduction, cytology-based cervical cancer screening methods have drastically decreased incidence and mortality rates of cervical cancer. (18) While the Pap smear is an effective screening test, confirmation of the diagnosis of cervical cancer or pre-cancer requires a biopsy of the cervix. Cervical cancer deaths were decreased by approximately 74% in the last 50 years, largely due to widespread Pap smear screening (1, 19). The widespread introduction of the Papanicolaou test or Pap smear for cervical cancer screening has been credited with dramatically reducing the incidence and mortality of cervical cancer in developed countries. Pap smear screening every 3–5 years with appropriate follow-up can reduce cervical cancer incidence and cancer screening including Pap smear can reduce cervical cancer mortality by 80% or more among screened women (20).

Although the HPV DNA testing was not included in this study, the results of Pap smears revealed that there was no case of cervical cancer. Albeit 159 (70%) revealed apparently healthy cervix on vaginal examination, only 59 (26%) of respondents had normal cervical smears by Papanicolaou cytological staining method. Out of 168(74%) abnormal cellular smears, 67(29.5%) and 101(44.5%) were urban and

rural respondents, respectively. In addition, prevalence of abnormal cervical Pap smears was remarkably more in rural areas ($p < 0.010$, OR 0.46). Therefore, for cervical cancer screening among women, the model has value in predicting how individuals are likely to respond if an intervention is designed to stimulate screening behavior among women, through innovative health education strategies emphasizing intensive cognitive and health promotion activities to improve their knowledge of the disease and the benefits of screening.

In Myanmar, lack of routine cervical screening program may affect on health of mothers, children and family. It is therefore being suggested that not only the mothers but also all sexually active females should be targeted for health promotion intervention, emphasizing knowledge, perception of susceptibility, seriousness and benefits in order to influence the desired health-seeking behavior and taking part in screening program. Data from this study would serve as a baseline to be administered in the future. Although the most efficient and effective strategy for detecting and treating cervical cancer precursors in low resource settings is to screen using either visual inspection with acetic acid (VIA) with Pap smear or human papillomavirus (HPV) DNA testing and then to treat using cryotherapy, it is a little far away from implementation of cervical diseases including cervical cancer control program, especially in mothers and women of low socio-economic status and low levels of knowledge about cervical cancer development and prevention. In order to stimulate regular screening among women, there should be an aggressive health promotion intervention designed to increase awareness, correct impressions and concepts about cervical diseases including cancer of the cervix and benefit of cervical screening in the community. In conclusion, cervical cancer should be first cancer to be eliminated in Myanmar women society.

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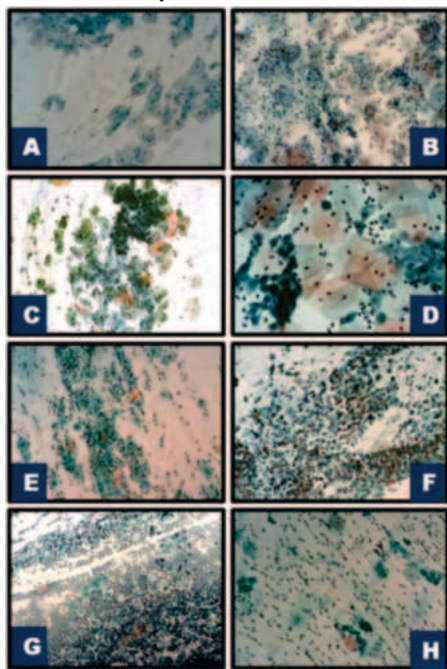


Figure - Papanicolaou staining analysis of cervical smears of urban and rural mothers from Nay Pyi Taw (Central Myanmar), (Pap stain, x 200). Normal or negative for intraepithelial lesion or malignancy (A), inflammatory smears (B), Atypical squamous cells of undetermined significance/ASC-US (C), Atypical squamous cells, cannot exclude high-grade squamous intraepithelial lesion/ASC-H (D), Low-grade intraepithelial lesion/LSIL (E), High-grade intraepithelial lesion/HSIL (F), postpartum cellular changes (G) and postmenopausal cellular changes (H), respectively according to The Bethesda System (TBS)

Table 1. Awareness Of Cervical Cancer Screening Of Urban And Rural Married Women

Awareness		Urban women (n=102)	Rural women (n=125)	P value	OR value
Have you ever heard	Yes	90 (88.2%)	73 (58.4%)	0.00	5.34

about cancer?	No	12 (11.8%)	52 (41.6%)	0*	
Have you ever heard about cervical cancer?	Yes	82 (80.4%)	62 (49.6%)	0.00	4.17
	No	20 (19.6%)	63 (50.4%)	0*	
Have you ever heard about cervical screening?	Yes	55 (53.9%)	30 (24%)	0.00	3.71
	No	47 (46.1%)	95 (76%)	0*	

Table 2. Prevalence Of Cervical Diseases In Urban And Rural Married Women

		Prevalence of cervical diseases		P value	OR value
		Urban women (n=102)	Rural women (n=125)		
Vaginal Examination	Apparently Healthy cervix	63 (61.8%)	96 (76.8%)	0.014*	0.49
	Unhealthy cervix	39 (38.2%)	29 (23.2%)		
Cytology Examination	Inflammatory or/and cellular changes	67 (65.7%)	101 (80.8%)	0.010*	0.46
	Normal smear	35 (34.3%)	24 (19.2%)		

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