ASSESSMENT OF KNOWLEDGE AND ATTITUDE TO CERVICAL CANCER AND PAP TEST AFFECTING ACCEPTANCE OF PAP SMEAR SERVICE AMONG WOMEN IN HAA DISTRICT, BHUTAN (AUGUST – NOVEMBER 2020)

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Abstract. In Bhutan, cervical cancer is the most common cancer in women. Although Papanicolaou test (Pap test) is effective in detecting cervical cancer, a freely available service has not been optimally utilized in most parts of the country, including the Haa District of Bhutan, due to reasons not well studied or understood. Attitudes towards Pap smear screening among women 25-65 years of age, including factors influencing decision to obtain a Pap test and knowledge of cervical cancer were conducted in Haa District from August to November 2020. Proportion of women who received Pap test was higher among those presented with evidence regarding cervical cancer and importance of the test compared to those who did not. Nonetheless, number receiving a Pap test was quite low in the former group. Presence of female health workers in health centers increased likelihood of accepting the available Pap smear services. Individuals residing in areas more than one-day travel from a health facility were less likely to have received Pap smears compared to those who lived less than a 2-hour travel. In conclusion, knowledge of importance of Pap test in detecting cervical cancer and freely availability of Pap smear services are insufficient by themselves to induce receipt of a Pap test, being counteracted by other deterring factors. Thus, adopting a holistic approach is essential to improve utilization of Pap test facilities in Haa District and other regions of Bhutan.

Keywords: attitude, Bhutan, cervical cancer, deterring factor, knowledge, Pap test

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INTRODUCTION

The World Health Organization estimates cervical cancer is the fourth most common cancer in women (Adams and Johnson, 2019). In 2018, some 570,000 women were diagnosed with cervical cancer worldwide and 311,000 women died from the disease (Arbyn *et al*, 2020). Approximately 85% of deaths due to cervical cancer occur in low- and middle-income countries (Arbyn *et al*, 2020). Southeast Asian region ranks second in having most cancer in women, with approximately 175,000 cases annually (amfAR 2016). In Bhutan, 48 new cervical cancer cases are diagnosed annually and this type of malignancy has become leading cause of female cancer (Bruni *et al*, 2019).

Cervical cancer is one of the foremost preventable and curable forms of cancer if detected early and treated effectively (WHO, 2014). However, preventive measures have proven to be as effective as HPV vaccination, screening for cancer through Papanicolaou test or Pap smears and follow-ups of treatment taken altogether (WHO, 2014). Unfortunately, most cervical cancer cases are diagnosed at advanced stages, which are associated with low chances of survival. It is estimated cervical cancer mortality will rise 50% by 2040 (amfAR, 2016).

Pap test is an established proven method for cervical cancer diagnosis (WHO, 2014). In 1999, Bhutan introduced a national Pap smear screening program (MoH, 2014). Trained health professionals were placed in charge of reaching out to target groups to inform the importance of Pap screening and its role in cervical cancer prevention. Currently, Pap smears in Bhutan are provided as part of the routine services in all health centers and are made more accessible to otherwise deprived target groups through periodic screening camps to expand nationwide coverage.

Despite free services provided by skilled health professionals and an increase in screening through public awareness and education campaigns, districts have only a 21.9% coverage rate (MoH, 2020), which does not differ from other countries, such as Nigeria and South Africa, where Pap smears remain low despite increased awareness (Okunowo *et al*, 2018; Donatus *et al*, 2019). Low rate of Pap tests is due to inadequate awareness and a lack of recommendation and encouragement from health professionals (WHO, 2014; Okunowo *et al*, 2018).

The Bhutan 2012 National Health Survey reported approximately 45% of

women 20-59 years of age had received a Pap smear at least once in their lifetime. Pap smear coverage in rural areas was lower (40%). Although 85% of female target women population were aware of Pap smear test, only 34% had received a test (MoH, 2012). A study in conducted in Nigeria determined that those screened were afraid of developing cervical cancer and/or from referrals of health professionals (Okunowo *et al*, 2018).

A study was conducted in Haa District, Bhutan to determine among women 25-65 years of age the extent of cervical cancer knowledge, proportion of receipt of Pap tests and factors influencing the use of Pap smear service.

MATERIALS AND METHODS

Study design and location

A cross sectional survey design was used to assess knowledge, attitude and practices of women 25-65 years of age to determine influences affecting receipt of Pap smear services in Haa District, Bhutan from August to November 2020.

Bhutan is a Himalayan country consisting of twenty districts (dzongkhags) with a population of 735,553 (National Statistics Bureau, 2018). Haa District is located in the western region of Bhutan and has a population of 13,655 (6,220 females and 7,435 males) scattered across six blocks (gewogs) (National Statistics Bureau, 2018). At the period of the survey, for every 100 persons in a dzongkhag, 23 and 77 lived in urban and rural area respectively. Healthcare services are provided free to the population who have access to 49 district hospitals and 189 primary health centers (PHC) located across the country (National Statistics Bureau, 2010).

Data collection tool and sample size

Three experts validated the questionnaire using three categories of ratings for item-objective congruence index (Rovinelli and Hambleton, 1976). A pilot study was carried out among individuals not included in the actual study to test reliability of the questionnaire using Cronbach alpha test (Gleim and Gleim, 2003). Data from a semi-structure pretested questionnaire were collected by trained enumerators.

The study protocol was approved by the Research and Ethics Board of Health (REBH), Ministry of Health (no. REBH/Approval/2019/056). Prior written informed consent was obtained from all participants.

Data analysis

Demographic variables are described as mean ± SD and categorical variables frequency and percentage related to Pap smear acceptance. In order to identify appropriate parameters for the multivariate, a univariate logistic regression analysis was performed to select to parameters associated with acceptance of Pap test, followed by a multivariate logistic regression analysis to identify independent parameters. Model fit was verified using c-statistics

and calibration assessed with a Hosmer and Lemehow Test (Dreiseitl and Osl, 2012). Data analyses were carried out using a Statistical Analysis System (SAS) version 9.4 (SAS Institute, Cary, NC).

RESULTS

Demographic characteristics of participants

Of the eligible women 25-65 years of age (n = 2,324) listed in the 2019 Annual Health Survey (MoH, 2020), 350 were enrolled in the study using a Tara Yamuna sampling technique (Kirby *et al*, 2002) with a response rate to the questionnaire of 260 (74%). Participants had a mean ± SD age of 40 ± 11 years, with 147 (57%) not having a basic education (illiterate), 26 (10%) having a basic non-formal education (NFE), 69 (26%) attending high school, and 18 (7%) having a tertiary education; 127 (49%) were farmers, 68 (20%) housewives and 195 (31%) corporate or private employees, or running their own businesses; and 201 (77%) were married, 31 (12%) divorced, 13 (5%) single and/or widowed, and 15 (6%) of undeclared status.

Questionnaire respondents, 222, (86%) had prior knowledge regarding cervical cancer or received information from health professionals, with 176 (79%) and 162 (73%) knowing cervical cancer is preventable and treatable if diagnosed on time respectively, 252 (97%) receiving information on Pap smear from health professionals, and 138 (56%) agreeing all women should receive a Pap smear.

Primary motivation to undergo Pap smear screening, 132, (72%) was fear of contracting cervical cancer, followed by incentive from referrals of health workers, 44, (24%). A small proportion of respondents 6 (12%) indicated absence of female health staff as one reason for not taking a Pap test, and an equal number felt ashamed of exposing themselves in the procedure. Thirteen respondents (17%) considered physical examination unnecessary if obvious signs and symptoms of disease were not present, 39 (16%) necessary if once having had sexual intercourse, 48 (19%) necessary for those sexually active, and 12 (16%) considered themselves too young or too old to be screened.

Of the respondents, 183 (71%) had already received a Pap test, but only 109 (60%) attended followed-up screenings and 47 (26%) did not return after the first or the second Pap test. Reasons why women stopped coming to their follow-up appointments after the first screening were lack of time 10 (20%), long travel distances to health facilities 7 (14%) and, surprisingly, 7 (14%) replied of not being informed on need of follow-ups. Among those who had been screened, 167 (75%) discussed the test with their respective spouse and received support.

Multivariate logistic analysis was applied to identify independent factors associated with receipt of Pap test among participants, revealing presence of a health assistant at the screening center, provision by the attending health

assistant of importance of Pap test and distance from residence of screening center <2 hours travel on foot are factors significantly associated with having received a Pap smear, while, on the other hand, distance from residence of screening center >1 day is significantly associated with lack of having undertaken a Pap test (Table 1).

DISCUSSION

Replies to a questionnaire on demographic and socio-economic status and various factors related to having undergone a Pap test were received from three quarters of women surveyed in Haa District, revealing that although 86% had a basic understanding of cervical cancer and nearly all knew of the usefulness of a Pap test compared to 85% reported in the 2012 National Health Survey (MoH, 2012), only 71% had taken the test and among these 87% returned for follow-up examinations. These findings were similar to studies in Nigeria (Okunowo *et al*, 2018) and South Africa (Donatus *et al*, 2019). In Nigeria, radio/television is the primary source of information on cervical cancer and Pap smears, followed by physicians and nurses (Okunowo *et al*, 2018), while in the present study, health professional and friends were the main sources of information. The proportion of respondents who have knowledge of Pap test but declined the test was smaller than that (22.9%) reported in Nigeria (Okunowo *et al*, 2018),

Although Haa women were aware of the importance of getting pap smears and the consequences of cervical cancer, actual pap smear receipt continues to be low. Even though 183 (71.2%) of women received a pap smear, only 109 (60%) of them went back for follow-up test and 47 (26%) stopped going to screening appointments after the first and the second test. Other countries have shown an even larger gap between the knowledge of pap smears and utilization (Okunowo *et al*, 2018).

A few number of studies have examined reasons for unwillingness to be undergo a Pap screening, these include lack of family support, limitation in transport to hospital, concerns that the "positive Pap smear test will make them worry", and lack of "encouragement or information from healthcare workers" (Al-Naggar *et al*, 2010; Bruni *et al*, 2019). In Nigeria, decreased awareness (53.8%) and lack of referrals from physicians and nurses (31.1%) are cited as the main reasons for low use of Pap smear services (Okunowo *et al*, 2018). In Nepal, (Thapa *et al*, 2018) found "no symptoms," "lack of awareness," and "embarrassment" the most common barriers against cervical cancer screening, and, similarly, in Bangladesh over two thirds of women who are aware of Pap smear believe lack of symptoms made screening unnecessary (Adams and Johnson, 2019).

Previously, Dhendup and Tshering (2014) reported Bhutanese women are not adequately utilizing the freely

Table 1

Multivariate logistic regression analysis of factors associated with acceptance of Pap test among participants at Haa District, Bhutan (August to November 2020)

Factor	Reference factor	Adjusted OR (95% CI)	*p*-value*
Health center distance	>2 hours by foot		
2-8 hours by foot		2.895 (0.727 - 11.529)	0.1317
>1 day by foot		0.155 (0.048 - 0.496)	0.0017
Female HA present at screening facility	No		
Yes		3.897 (1.400 - 10.852)	0.0092
HA provided knowledge on Pap smear	No		
Yes		3.423 (1.626 -7.208)	0.0012

*Significant at $p < 0.05$

CI: confidence interval; HA: health assistant; OR: odds ratio

provided Pap screening services, and, the same study determined that the services are poorly delivered. It was noted that the common reasons for not having a Pap smear are a lack of knowledge of the procedure, fearing it is painful or embarrassing, and being too young or too old, reasons still voiced in the present study (MoH, 2020). In addition, the present study included reasons of lack of time, absence of female health staff at the screening facility and length of travel by foot to screening center for avoidance of Pap test. The latter factor is particularly unique to Bhutan due to the rugged terrain and widely spaced health centers.

The present study noted that if the information on cervical cancer and Pap test was not comprehensive enough, in that it did not acknowledge importance of screening, the likelihood of having a Pap smear was low (data not shown). This is similar to the situation in Nigeria where prior counseling by physicians and nurses and knowledge on cervical cancer are significantly associated with the higher rate of Pap smear performed, but having sufficient background knowledge on cervical cancer does not necessarily lead to receipt of Pap test (Okunowo *et al*, 2018). It was found little to no background knowledge of cervical cancer, personal convictions, cost of screening and treatment, expected lack of privacy, and fear of misdiagnosis are associated with refusal to undergo Pap smears (Binka *et al*, 2019)

The small number of sample size in the present study precludes comparison of the findings with other districts in the country. However, the lower prevalence of Pap smears among adult women in Haa District compared to other districts require further investigation by local health authorities.

In conclusion, the present survey of adult women in Haa District shows having sufficient information on cervical cancer and Pap smear screening did not suffice in putting knowledge into practice. Other factors, some common with other countries but some unique to Bhutan, impacted on the decision whether to undergo Pap test. Thus, it is of paramount importance that a comprehensive and holistic approach be taken to increase coverage of Pap smear screening nationwide. It is recommended that health managers and policymakers place a greater emphasis on factors, revealed in this study and by others, that form barriers to universal Pap screening and take measures accordingly to improve utilization of Pap screening services for the health and wellbeing of all Bhutanese women.

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CONFLICTS OF INTEREST DISCLOSURE

The authors declare no conflicts of interest.

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