

Knowledge, Practice and Barriers on Cervical Cancer Screening among Married Women

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ABSTRACT

Background: Cervical cancer is a most common preventable public health problem. Despite availability of various screening services at Biratnagar, many barriers restrict its utilization. So, we aimed to assess the knowledge, practice and barriers of cervical cancer screening among 30-60 years married women in Biratnagar, Morang, Nepal.

Methods: We conducted a community based cross sectional study in Biratnagar Morang from December 2020 to December 2021. Consecutive sampling technique was used to collect data from 280 married women of 30-60 years. Ethical approval was obtained from Nepal Health Research Council and informed consent was taken from study participants. Data was collected by face to face interview using a semi structured questionnaire.

Results: All participants had heard of cervical cancer. Most (93.9%) responded to multiple sexual partners as a risk factor and 97.9% responded to excessive vaginal bleeding as a symptom. Most (97.1%) responded that cervical cancer is preventable and 44.1% were aware of pap smear test. Eighty-four (30%) participants had ever been screened for cervical cancer. Unavailability of health insurance (85.2%), high cost of treatment (83.1%), lack of nearby service availability (70.9%), embarrassment (44.8%), presence of male doctors (43.8%), problems in time management (28.01%), no advice from health care providers (22.9%), unaware of screening (15.8%) and beliefs on traditional healers (7.1%) were barriers.

Conclusions: In comparison to knowledge, practice of cervical cancer screening is low suggesting existence of know-do gap. Various barriers that prevent cervical cancer screening were evident.

Keywords: Barriers; cervical cancer; knowledge; practices; screening.

INTRODUCTION

Cervical cancer is a preventable public health problem caused by human papillomavirus (HPVs).¹ It is second most common cancer in the world, third in Asia and first in Nepal.^{2,3} Prevention of cervical cancer through screening among 30-60 years women is a priority agenda of the National cervical cancer guideline of Nepal.⁴ Many national and international organizations are also working in coordination with the Government of Nepal for its implementation. There are healthcare institutions in Biratnagar where cervical cancer screening facilities are available. Despite availability of various screening services many barriers restrict its utilization. A significant know-do gap on cervical cancer screening has been reported in the studies from different parts of

Nepal.⁵⁻⁷ Hence, we aimed to assess knowledge, practice and barriers of cervical cancer screening among married women of Biratnagar.

METHODS

We conducted a community based cross sectional study among married women of 30-60 years age group in Biratnagar, Morang from December 2020 to December 2021. Ethical approval was obtained from Nepal Health Research Council (NHRC) Reg. No 735/ 2020 prior to data collection. Participants were informed about the objective of the research and written informed consent was taken before data collection. Consecutive sampling method was used to collect data from 280 study participants. Participants residing at Biratnagar since last

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6 months fulfilling the inclusion criteria were included for the study. The succeeding participants were enrolled accordingly till the expected sample size is met. Since the data was collected during a pandemic situation, households confirmed or suspected of COVID-19 positive were excluded from study. Sample size was calculated based on a study from Chitwan which reported 58.1% prevalence of good knowledge on cervical cancer screening.⁸ We enrolled 280 study participants after calculating sample size based on formula $n = Z^2PQ/L^2$, at 95% level of significance and allowable error at 10% of prevalence. Data was collected by door to door visit with an interview method using a semi structured questionnaire. All the preventive measures against COVID-19 transmission were maintained. The approximate time for data collection was about 10 minutes. The questionnaire consisted of four parts. Part I consisted of socio-demographic characteristics, Part II consisted of knowledge of cervical cancer screening, Part III: practice of cervical cancer screening and Part IV: barriers of cervical cancer screening. Barriers were operationalised as factors hindering cervical cancer screening. For this, participants who did not have cervical cancer screening were asked openly and the responses were filled accordingly. Collected data were entered in Microsoft Excel, checked for completeness, consistency and accuracy. The confidentiality and anonymity of data were maintained. Data cleaning and coding was done. Then it was transferred to the statistical package for the social science (SPSS) version 23 software for further analysis.

RESULTS

Maximum number 146 (52.1%) of participants were from age group of 30-40 years with mean \pm SD of 40.2 \pm 9.16 years. Majority 201(71.8%) were brahmin/chhetri and most 274 (97.9%) were Hindu. Forty-nine (17.5%) were illiterate and 193 (68.9%) were housemaker. The maximum number of participants 183(65.4%) had an average monthly family income between NPR 10000-30000 (Table 1).

Characteristics	n	%
Age (years)		
30-40	146	52.1
41-50	76	27.1
51-60	58	20.8
Mean \pm SD	40.2 \pm 9.16	
Ethnicity		
Brahmin/Chhetri	201	71.8

Table 1. Baseline characteristics of study participants (n=280)

Characteristics	n	%
Dalit	4	1.4
Janajati	56	20.0
Madhesi	17	6.1
Muslim	2	0.7
Religion		
Hindu	274	97.9
Other than Hindu	6	2.1
Education		
Formal	200	71.4
Informal	31	11.1
Illiterate	49	17.5
Marital status		
Divorced	2	0.7
Living together	259	92.5
Separated	1	0.4
Widow	18	6.4
Occupation		
Housemaker	193	68.9
Service	22	7.9
Shopkeeper	51	18.2
Agriculture	7	2.5
Daily wages	7	2.5
Average monthly family income		
10,000-30,000	183	65.4
31,000-50,000	87	31.1
\geq 51,000-70,000	10	3.5

*Grand Multiparous: \geq 5 children

Table 2. Reproductive history of participants (n=280).

Characteristics	n	(%)
Age of menarche (Mean \pmSD) (In years)	13.6 \pm 1.49	
Type of menstrual cycle		
Regular cycle	203	72.5
Sometime irregular	30	10.7
Always irregular	2	7.0
Menopause status (Yes)	45	16.1
Parity		
Nulliparous	17	6.1
Primiparous	58	20.7
Multiparous	194	69.3
Grand Multiparous	11	3.9
Family history of cervical cancer (Yes)	13	4.6
History of Pelvic Inflammatory Disease (Yes)	16	5.7
History of Sexually Transmitted Infections (STIs)	0	0
Partner's history of STIs	0	0
History of smoking (yes)	14	5

Table 3. Knowledge of participants on cervical cancer (n=280).

Characteristics	n	(%)
Ever heard of cervical cancer	280	100
Risk factors of cervical cancer**		
Early marriage	233	83.2
Early pregnancy	218	77.8
Multiple sex partner	263	93.9
Positive family history	133	47.5
Smoking	84	30
Sign/symptoms^a *		
Excessive vaginal bleeding	274	97.9
Foul smelling vaginal secretions	268	95.7
Post coital bleeding	167	59.6
Post-menopausal bleeding	253	90.4
Cervical cancer is preventable ^a	272	97.1
Preventive methods**(n=272)		
Regular screening	272	100
Smoking cessation	114	41.9
Vaccination against Human Papillomavirus	72	26.47
Screening methods** (n=272)		
Pap smear test	39	14.3
Visual Inspection of cervix with Acetic acid (VIA)	29	10.66
Colposcopy	13	4.78
Human Papillomavirus (HPV) test		
Time Interval of cervical cancer screening (n=272)		
Once in every 5-year ^a	3	1.1
Cervical cancer is curable if treated early ^a	272	97.1
Treatment options mentioned**^a (n=272)		
Surgery	131	48.16
Radiation		
Chemotherapy		

* Multiple responses ^a correct responses

The mean age of menarche was 13.6±1.49 years. Majority 203 (72.5%) had a regular cycle. Fourth five (16.1%) already had menopause. More than two third 194 (69.3%) were multiparous. Thirteen (4.6 %) participants had a family history of cervical cancer and 16 (5.7%) had a past history of pelvic inflammatory diseases (PIDs). Fourteen (5%) had a history of smoking (Table 2).

All participants had heard of cervical cancer. Most 263 (93.9%) responded to multiple sexual partners as the risk factor for cervical cancer and 274 (97.9%) responded to excessive vaginal bleeding as signs and symptoms. Two

hundred seventy-two (97.1%) responded that cervical cancer is preventable and 120 (44.1%) were aware of pap smear tests. Only three participants correctly responded to the time interval of cervical cancer screening. Most 272 (97.1%) participants correctly responded that cervical cancer is curable if treated early (Table 3).

Eighty-four (30%) participants have had cervical cancer screening, among them the majority 74(88.2%) had screened for once. Fifty-one (60.7%) were unaware of the method used for screening among the screening group. Thirty-six (42.9%) screened at the age of 31-40 years. Twenty (23.8%) among those screened had abnormal findings and eleven participants had undergone hysterectomy while one participant used chemotherapy (Table 4).

Table 4. Cervical cancer screening practices of participants (n=280).

Characteristics	n	%
Ever been screened for cervical cancer(n=280)		
Yes	84	30
No	196	70
Frequency of screening (n=84)		
Once	74	88.2
Twice	9	10.7
Thrice	1	1.1
Screening method used (n=84)		
Pap smear	26	31
Visual inspection with acetic acid (VIA)	7	8.3
Don't know the method used	51	60.7
Age of first screening (n=84)		
21-30 years	16	19
31-40 years	36	42.9
41-50 years	32	38.1
Time of previous screening (n=84)		
≤ 5 years	73	86.9
≥6 years	11	13.1
Findings of screening tests (n=84)		
Abnormal findings	20	23.8
Normal findings	57	67.9
Don't know about their findings	7	8.3
Advice received for abnormal findings (n=20)		
Hysterectomy	11	55
Chemotherapy	1	5
Regular follow up	8	40

Among the participants who didn't have screening, 167 (85.2%) reported unavailability of health insurance ensuing by high cost of treatment 163 (83.1%) were the barriers to cervical cancer screening (Table 5).

Table 5. Barriers related to cervical cancer screening (n=196)

Barriers	n	(%)
No health insurance	167	85.2
High cost of treatment	163	83.1
Lack of nearby service available	139	70.9
Feeling of embarrassment	88	44.8
Presence of male doctor	86	43.8
Problem in time management	55	28.01
No advice from health care provider	45	22.9
Unaware of screening	31	15.8
Belief of traditional healer	14	7.1
Does not feel importance	3	1.5
Suspicious husband	1	0.5

DISCUSSION

We explored the knowledge, practices and the barriers related to cervical cancer screening. Knowledge remains an important predictor for screening behaviors. In developed countries, people are aware of cervical cancer screening while disparities exist in developing countries and within the rural and urban setting and among educated and uneducated population.¹ The fact that despite having adequate knowledge on cervical cancer screening, barriers exist that obstruct women from seeking screening for cervical cancer.

We found all participants had heard of cervical cancer screening. Every nine in ten participants responded to multiple sexual partners as a major risk factor and excessive vaginal bleeding as a symptom of cervical cancer. Studies from other settings of Nepal responded poor perineal hygiene as a major risk factor^{9,10} and lower abdominal pain was considered as a major symptom.¹⁰ Symptoms responded by the participants from different settings are commonly encountered which might reflect their experiences. There is also a possibility that participants might have responded in hunch.

We found every nine in ten were aware that cervical cancer is preventable but less than half were aware of pap smear as a test for cervical cancer screening. A study at teaching hospitals of Bharatpur, Nepal reported more than two third of the respondents were aware of the

pap smear for cervical cancer screening.⁷ A study from midwestern rural Nepal found that the majority had inadequate knowledge on cervical cancer screening.¹¹ The difference in findings might be due to study setting as community and hospital.

We found very few participants were aware of the time interval of cervical cancer screening but most of them knew it is curable if treated early. Study from Kathmandu also reported the same findings where the majority of participants don't know the time interval of cervical cancer screening.¹⁰ The similarity in findings suggest that people had less awareness on the importance of follow-up in medical care. This might also cause the delay in seeking care. This highlights that service providers need to emphasize the awareness of time intervals and follow up for cervical cancer screening.

Despite having knowledge on cervical cancer screening, we found very few (30%) attended for cervical cancer screening. Among participants having cervical cancer screening done, 31% went for a pap smear test. Regarding frequency of cervical cancer screening, two out of five had screened at least once. Similar findings were reported by the studies where the practice of cervical cancer screening was 17.3%,¹¹ 20.9%⁹ and 7.8%.¹² In contrast to our study, more than three fourths (77.8%) performed cervical cancer screening.⁷ The difference in practice might be due to the difference in study setting.

Our study found, majority of participants were unaware of the cervical cancer screening method they were attending. This shows that women are not aware of the cervical cancer screening method despite having practiced for it. It can also be considered as women seeking healthcare services perceive that it is the role of health care professionals to perform the test and they don't need to take the burden of recalling all these things.

It is a known fact that girls and women above the age 15 years are at increased risk of developing of cervical cancer once they are sexually active.¹³ Nepal national guidelines for cervical cancer screening 2010 AD aimed to achieve about 50% cervical cancer screening for women aged 30-60 years by 2015 AD. The guideline also advocated that visual inspection with acetic acid (VIA) as a primary screening method that can be used for all levels of healthcare setting. But even after a decade of the release of the guideline, studies from different parts of Nepal revealed that it has not been fully implemented to meet its targets.

In addition, there are still many barriers for effective cervical cancer screening. Our study found that no insurance policy for cervical cancer screening and high cost of treatment are the main barriers of service utilization. But other studies found that embarrassment and no visible presence of signs and symptoms of cervical cancer were the main barriers.^{7,9,11} These differences might be due to differences in treatment behaviors, economic status of population as well as availability of facilities. Further we found barriers like lack of nearby service availability, embarrassment, presence of male doctors, problems in time management, no advice from doctors, unaware of treatment and beliefs on traditional healers.

A qualitative study conducted in Dhulikhel Nepal mentioned sociocultural factors, mistrust and gossip, negative experience in previous meetings with service providers, geographical constraints, and financial barriers to the practice of cervical cancer screening.¹⁴ Women seeking services only after the presence of signs and symptoms signify the failure of our preventive and promotive approaches. This eventually will lead to failure of the prevention programme and which ultimately increases its incidence. Awareness and health education is an integral part of cervical cancer screening programme which was also one of the objectives of national cervical cancer screening programme.⁴ Hence comprehensive behaviour change communication strategy, mass media campaigns, mobilization of women's group, and door-to-door approaches through female community health volunteers can be helpful to implement the know do gap.

Women tend to listen to local people and women of the same age groups which is evident by a research done in rural Nepal where participation in screening programme was increased by peer influences.¹⁶ Nurses carry a diverse role in health and illness. They can be instrumental to raise awareness in communities and hospitals. As of now the government of Nepal is implementing school health nurses programme- sharing information and education to the adolescence of both sex can help raise awareness and practice of screening behaviours and eliminate the barriers.¹⁷

The World Health Organisation (WHO) initiated a cervical cancer elimination programme in the year 2018. It aimed to meet the 90-70-90 (vaccination, screening and treatment respectively) targets by 2030 by each country. All countries must reach and maintain an incidence rate of <4 per 100000 women.¹⁵ For these policymakers need to be extra careful to emphasize on

elimination of barriers to effectively implement the cervical cancer screening services.

Strengthening health promotion and preventive activities among the target population will increase the acceptability and fill the know-do gap on cervical cancer screening and its treatment.¹⁶

Generalisation of these finding is difficult as we used consecutive sampling. We did not observe the actual practice of cervical cancer screening. No document verification was done to authenticate the screening behaviors. Participants might have responded to some questions based on hunch which can't be avoided. Since our study is quantitative based and clients focused, barriers are observed mainly on the parts of clients. It would have been better if we conducted mixed method study enrolling both clients and providers perspective.

CONCLUSIONS

In comparison to knowledge, practice of cervical cancer screening is low suggesting existence of know-do gap. Various barriers that prevent cervical cancer screening are evident.

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REFERENCES

1. World Health Organization. Cervical cancer. [cited 2022 Jan 15]. Available from: <https://www.who.int/health-topics/cervical-cancer>.
2. World Health Organization. Comprehensive cervical cancer prevention and control: a healthier future for girls and women. 2013 [cited 2022 Jan 14]. [Download PDF]
3. Bruni L, Albero G, Serrano B, Mena M, Collado JJ, Gómez D, et al. Human Papillomavirus and Related Diseases in Asia. ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre); 2021 [cited 2022 Jan 14]. [Download PDF]
4. Family Welfare Division. Cervical and Breast Cancer Screening Program Implementation Guideline 2077. 2020 [cited 2022 Jan 6]. Available from: <https://publichealthupdate.com/cervical-and-breast-cancer-screening-program-implementation-guideline-2077/>

5. Rai G, Shrestha M, Shah T, Mandal G, Agrawal A, Bharati M. Knowledge and Practice Regarding Cervical Cancer Screening Among Women Attending Gynecology OPD, BP Koirala Institute of Health Sciences, Dharan, Nepal. [\[Article\]](#)
6. Acharya Pandey R, Karmacharya E. Cervical cancer screening behavior and associated factors among women of Ugrachandi Nala, Kavre, Nepal. *Eur J Med Res.* 2017;22(32):1-9. [\[Article\]](#)
7. Shrestha S, Dhakal P. Knowledge, Attitude and Practice Regarding Cervical Cancer Screening Among Women Attending a Teaching Hospital, Bharatpur, Chitwan. *J Family Reprod Health.* 2017;11(1):18–23. PMID: 29114264
8. Shrestha BK, Sapkota DK, Sapkota M. Knowledge and Acceptability of Cervical Cancer Screening among Adult Women Visiting in Gynecological OPD. *Journal of College of Medical Sciences-Nepal.* 2019;15(1): 67–70. [\[Article\]](#)
9. Bharati M, Chalise GD, Ambu KC, Khadka S, Bharati N, Lakhaju L. Awareness on cervical cancer and practice of pap smear test among the married women of Changunarayan municipality. *Journal of Chitwan Medical College.* 2021;11(3): 6–10. [\[Article\]](#)
10. Devkota P, Aryal S, Shrestha PD, Shrestha R. Awareness on Cervical Cancer among Reproductive Aged Women of Kathmandu, Nepal. *International Journal of Health Sciences and Research.* 2020;10(8):75-82. [\[Article\]](#)
11. Thapa N, Maharjan M, Petrini MA, Shah R, Shah S, Maharjan N, et al. Knowledge, attitude, practice and barriers of cervical cancer screening among women living in mid-western rural, Nepal. *J Gynecol Oncol.* 2018;29(4):e57. [\[Article\]](#)
12. Ranabhat S, Dhungana G, Neupane M, Shrestha R, Tiwari M. Pap smear coverage and effect of knowledge and attitude regarding cervical cancer on utilization of the test by women in Udayapur district of Nepal. *Journal of Chitwan Medical College.* 2014;4(4):31–5. [\[Article\]](#)
13. Joy T, Sathian B, Bhattarai C, Chacko J. Awareness of cervix cancer risk factors in educated youth: a cross-sectional, questionnaire based survey in India, Nepal, and Sri Lanka. *Asian Pac J Cancer Prev.* 2011;12(7):1707–12. PMID: 22126549
14. Darj E, Chalise P, Shakya S. Barriers and facilitators to cervical cancer screening in Nepal: A qualitative study. *Sex Reprod Healthc.* 2019;20:20-26. [\[Article\]](#)
15. Cervical cancer elimination initiative. Global strategy to accelerate the elimination of cervical cancer as a public health problem. World Health Organization; 2020 [cited 2022 Jan 11]. Available from: <https://www.who.int/publications/i/item/9789240014107>
16. Shakya S, Karmacharya BM, Afset JE, Bofin A, Åsvold BO, Syversen U, et al. Community-Based Health Education has Positive Influence on the Attitude to Cervical Cancer Screening among Women in Rural Nepal. *J Canc Educ.* 2016;31:547–553. [\[Article\]](#)
17. Hilton LW, Dozier KJ, Bradley PK, Rayermann SL, DeJesus Y, Stephens DL, et al. The role of nursing in cervical cancer prevention and treatment. *Cancer Supplement.* 2003;98(9):2070-74. [\[Article\]](#)