Awareness Regarding Cervical Cancer among Women Residing in Bharatpur, Chitwan

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ABSTRACT

Introduction: Cervical cancer is one of the most prevalent cancer affecting women globally. It is the fourth most common cancer in women and the seventh overall. Cervical cancer can be cured and prevented by regular pelvic check-up, screening test and vaccination against human papilloma virus. The objective of this study was to find out awareness regarding cervical cancer among women aged 18-49 years residing in Bharatpur Metropolitan City-5, Chitwan.

Methods: A community based descriptive cross-sectional research design was used, 186 women were selected using simple random sampling method. Structured interview schedule was used to collect the data within 2 weeks. The collected data was entered in Epi data 3.1 and exported into IBM SPSS version 20. Data was analysed in terms of descriptive and inferential statistics.

Results: The study revealed that 72.6% of the women were >30 years and 93% of women were literate, among them 35.2% had completed secondary level of education. It was found that only 28.0% of women had good level of awareness and 43.5% of them had poor level of awareness regarding cervical cancer. There was statistically significant relationship between level of awareness with age (p=0.029), ethnicity (p=0.013), marital status (p=0.018) and heard about organism that causes cervical cancer (p=<0.001).

Conclusions: Based on the findings of the study, it is concluded that, almost half of the women have poor level of awareness regarding cervical cancer. Hence, there is need for community awareness program on cervical cancer, its screening and preventive measures through the medium of health personnel, friends and mass media.

Keywords: Awareness, Cervical Cancer, Women.
a crude incidence rate of cervical cancer in Nepal is 24.2 per 100,000 women per year, with 3,504 new cases diagnosed every year and 1,872 deaths. According to GLOBOCAN 2018 in Nepal, out of 26,184 total new cases of cancer in both sexes, all ages, 2942 (11.2%) were new cases of cervical cancer and 1928 (9.9%) were death from cervical cancer. Among 15,912 female all ages cancer cases, there were 2,942 cases of cervical cancer which accounts for 18.5%. According to B. P. Koirala Memorial Cancer Hospital (BPKMCH) Annual Report, 10.40% of cervical was reported in 2014, 11.87% in 2015 and 12.67% in 2016.

Human papillomavirus (HPV) is the virtually necessary (but not sufficient) cause of cervical cancer. Other important co-factors include immunosuppression (particularly human immunodeficiency virus), smoking, parity (a higher number of full-term pregnancies increases risk), and oral contraceptive use.

HPV vaccination programs potentially can reduce the long term future burden of cervical cancer, and the WHO currently recommends as best buys (effective and cost-effective interventions) vaccinations against HPV of girls aged 9 to 13 years. High-quality screening programs are also important to prevent cervical cancer among unvaccinated older women. The WHO recommends the screening of women aged 30 to 49 years—either through visual inspection with acetic acid in low-resource settings, Papanicolaou tests (cervical cytology) every 3 to 5 years, or HPV testing every 5 years—coupled with a timely treatment of precancerous lesions.

Cervical cancer screening and prevention guideline is developed in 2010 in Nepal and the target age group for screening between 30-60 years old and screening interval to be 5 years. The screening method is used visual inspection Acetic Acid (VIA) and Pap smear. Though cervical cancer screening is available in some areas of Nepal, screening is mostly conducted when women come to the hospital for other medical problems and sometimes only when women present with symptoms. Despite the evidence that universal coverage is important, women in Nepal are not routinely screened before symptoms appear. The success and benefit of screening at a national level as a public health program to control and prevent cervical cancer depends to a great extent on the level of awareness of the potential beneficiaries.

B. P. Koirala Memorial Cancer Hospital is situated in Bharatpur, Chitwan, Nepal; is the center of excellence for cancer in Nepal. Adequate health infrastructure and expert human resources are available to conduct cervical cancer screening. But despite its availability for more than decades lack of knowledge about cervical cancer screening, behavioral risk factors such as husband's extramarital affair and early age at marries, tobacco smoking among participants is quite prevalent. So women's awareness regarding cervical cancer and screening is very important for early diagnosis and treatment of cervical cancer.

Methods

The descriptive cross-sectional study design was used to find out awareness regarding cervical cancer among women in Bharatpur Metropolitan, 5 Chitwan. According to the 2074 Bharatpur Metropolitan-5 profile, the total population was 5549, among them 2935 were female and 2614 are male population. All the females aged 18-49 were the population of the study. Bharatpur Metropolitan 5 was selected purposively. The sampling frame (1748) from the voting list 2074 was taken from the ward office of Bharatpur Metropolitan 5. The required number of samples were selected by simple random sampling technique (lottery method).

The sample size was calculated as, \( n = \frac{z^2pq}{e^2} \) (Cochran, 1977). Where \( z \) signified 95% confidence level which is 1.96; Prevalence of the study (p) = 47% (Khadka et al., 2017). Margin error (e) = ±7% = 0.07

Then, \( n = \frac{(1.96)^2 \times 0.47 \times (1 - 0.47)}{(0.07)^2} \)

The sample size \( (n_0) = 196 \)

Sampling frame (population) \( (N)= 1748 \) (women aged 18-49 years)

Adjusting the above sample size for a finite population

\[ n = \frac{n_0}{N} \times (N-1) \] (Cochran, 1977)

\[ n = \frac{196}{1748} \times (1748-1) \]

Required sample = 177
To reduce non-response error additional 10% is sample = 195

Ethical approval was taken from CMC-IRC, Chitwan Medical College (p) Ltd. Bharatpur, Chitwan. For the study, the request letter was submitted to the ward office of Bharatpur Metropolitan. The purpose of the study was explained to each respondent. The verbal informed consent was taken from each respondent. The respondents’ dignity was maintained by giving the right to reject or discontinue from the research study at any time. The respondents’ privacy was maintained during data collection by keeping them in a separate place and confidentiality was maintained by not disclosing the information giving by them. Data were collected in 2 weeks (from 2075/03/06 to 2075/03/20) from a household survey at any time in the day by using a structured interview schedule. In a day 13 – 14 respondents were interviewed.

All collected data were reviewed and checked for completeness, consistency, and accuracy. Coded data were entered in EPI data 3.1. The entered data was exported into IBM SPSS version 20. Data were analyzed by using descriptive statistics (frequency, percentage, median, and standard deviation) and inferential statistics (chi-square).

The level of awareness was categorized based on Modified Bloom's cut off points adopted from James John’s study (the knowledge, attitude, practice, and perceived barriers towards screening for premalignant cervical lesions among women in 2011) in which respondents score 80-100 percent were categorized as good awareness, those with the score 60-79 percent were categorized as moderate awareness and those with score <60 percent were categorized as poor awareness level. Therefore, the scores with the respective knowledge levels were good knowledge with a score of more than 10, satisfactory knowledge between 8 and 10, and poor knowledge with a score of less than 8.

**Results**

Table 1 shows that the majority (72.6%) of the respondents were age group more than or equal to 30 years with a mean age was 35 years minimum age was 19 years and the maximum age was 49 years, 93% were literate. Among the literate women, 32.8% had completed the secondary level of education. As regards occupation, 49.5% were involved in household work, 66.6% of the respondents were Brahmin/Chhetri, 87.6% of women followed the Hindu religion, 83.9% were married and 57.1% of respondents had less than 20 years long duration of marriage with mean duration was 17 years.

**Table 1: Demographic characteristics of the respondents**  
N=186

| Variables                        | Number | Percentage |
|----------------------------------|--------|------------|
| **Age in years**                 |        |            |
| <30 years                        | 51     | 27.4       |
| ≥30 years                        | 135    | 72.6       |
| **Mean ±SD=35.18±8.46**         | 34     |            |
| **Min=19, Max=49**               | 34     |            |
| **Educational status**           |        |            |
| Illiterate                       | 13     | 7.0        |
| Literate                         | 173    | 93.0       |
| **Level of education (n=173)**   |        |            |
| General Literate                 | 13     | 7.5        |
| Basic Education                  | 44     | 25.4       |
| Secondary Education              | 61     | 35.2       |
| Bachelor and Above               | 55     | 31.7       |
| **Occupation**                   |        |            |
| Service                          | 40     | 21.5       |
| Business                         | 31     | 16.7       |
| Agriculture                      | 7      | 3.8        |
| Housework                        | 92     | 49.5       |
| Student                          | 16     | 8.6        |
| **Ethnicity**                    |        |            |
| Dalit                            | 15     | 8.1        |
| Janajati                         | 47     | 25.3       |
| Brahmin/ Chhetri                 | 124    | 66.6       |
| **Religion**                     |        |            |
| Hindu                            | 163    | 87.6       |
| Buddhist                         | 21     | 11.3       |
| Christian                        | 2      | 1.1        |
| **Marital Status**               |        |            |
| Married                          | 156    | 83.9       |
| Unmarried                        | 29     | 15.6       |
| Widow                            | 1      | 0.5        |
| **Duration of marriage (n=156)** |        |            |
| < 20 years                       | 89     | 57.1       |
| ≥ 20 years                       | 67     | 42.9       |

Mean±SD=17.26±8.35 Min=2, Max=35
Table 2 shows that 2.2% of the respondents had a family history of cervical cancer. Among them, 75% of the mothers of respondents were suffered from cervical cancer. Regarding the history of cervical cancer screening, 28.5% had done the screening, 43.5% of the respondents said that there is the availability of screening services in their locality, 69.1% said that it takes ≤30 minutes to reach the screening service site. Only 14.5% were involved in the awareness programs, 32.3% had heard about the organism that causes cervical cancer and 3.8% were vaccinated against cervical cancer. The majority (89.94%) of the respondents had received information from electronic media (not shown in table).

Table 2: Disease-related information of respondents N=186

| Variables                                              | Number | Percentage |
|--------------------------------------------------------|--------|------------|
| Family history of cervical cancer                      |        |            |
| Yes                                                    | 4      | 2.2        |
| No                                                     | 182    | 97.8       |
| Relationship (n=4)                                     |        |            |
| Grandmother                                            | 1      | 25         |
| Mother                                                 | 3      | 75         |
| Cervical cancer screening done (n=186)                  |        |            |
| Yes                                                    | 53     | 28.5       |
| No                                                     | 133    | 71.5       |
| Availability of cervical cancer screening service (n=186)|        |            |
| Yes                                                    | 81     | 43.5       |
| No                                                     | 105    | 56.5       |
| The distance of services in minutes by walking (n=81)   |        |            |
| ≤30 minutes                                            | 56     | 69.1       |
| >30 minutes                                            | 25     | 30.9       |
| Involvement in cervical cancer prevention and screening awareness program | | |
| Yes                                                    | 27     | 14.5       |
| No                                                     | 159    | 85.5       |
| Heard about the organism that causes cervical cancer   |        |            |
| Yes                                                    | 60     | 32.3       |
| No                                                     | 126    | 67.7       |
| Vaccinated against cervical cancer                     |        |            |
| Yes                                                    | 7      | 3.8        |
| No                                                     | 179    | 96.2       |

Table 3 shows that the majority (95.7%) of the respondents responded that women who have multiple sexual partners is a risk factor of cervical cancer and only 12.4% responded that visual Inspection with Acetic acid is a method of cervical cancer screening.

Table 3: Awareness of the respondents on cervical cancer N=186

| Statements                                                                 | Correct Response Number | Percentage |
|---------------------------------------------------------------------------|-------------------------|------------|
| Abnormal growth of tissue of cervix is meaning of cervical cancer          | 70                      | 37.6       |
| Early age of sexual intercourse before 16 years is risk factor of cervical cancer | 94                      | 50.5       |
| Women who delivered more than three children is risk factor of cervical cancer | 146                     | 78.5       |
| Women who have multiple sexual partners is risk factor of cervical cancer  | 178                     | 95.7       |
| Pelvic pain/lower abdominal pain/post coital bleeding is sign and symptom of cervical cancer | 146                     | 78.5       |
| Procedure for detecting cervical cancer is meaning of cervical cancer screening | 79                      | 42.5       |
| Pap smear test is measure of cervical cancer screening                     | 124                     | 66.7       |
| Visual Inspection with Acetic acid is method of cervical cancer screening  | 23                      | 12.4       |
| Cervical Screening is done after 3 years of sexual exposure               | 31                      | 16.7       |
| Appropriate time interval of cervical screening is every 3 years           | 65                      | 34.9       |
| Best time to perform cervical screening is after 7 days of menstruation   | 104                     | 55.9       |
| Duration of abstinence from sexual intercourse before cervical screening is 3 days | 52                      | 28.0       |
| Duration of discontinuation of vaginal medication prior to screening is 3 days | 74                      | 39.8       |
| Radiotherapy/chemotherapy/surgery is treatment of cervical cancer          | 138                     | 74.2       |
| Vaccination, avoid early and multiple sexual relationships and doing cervical screening is preventive measure of cervical cancer | 177                     | 95.2       |
Table 4 reveals that 43.5% of respondents had a poor level of awareness and 28% had a good level of awareness regarding cervical cancer.

**Table 4: Level of awareness of the respondents on cervical cancer**

| Level of Awareness | Number | %   | CI          |
|--------------------|--------|-----|-------------|
| Good               | 52     | 28.0| 21.54-34.45 |
| Satisfactory       | 53     | 28.5|             |
| Poor               | 81     | 43.5|             |

Table 5 shows that the level of awareness was statistically significant with the age of respondents (p= 0.029), ethnicity (p=0.013), marital status (p=0.018) and heard about the organism that causes cervical cancer (p=< 0.001).

**Discussion**

In this study, 37.6% of the respondents correctly said the meaning of cervical cancer. Contradict findings show that 56% of the respondents knew the meaning of cervical cancer. In this study, 50.5% and 95.7% of the respondents responded that initiation of sexual intercourse before 16 years of age and having multiple sexual partners are the risk factors of cervical cancer respectively. Contrast findings are reported in the study done in India, Nepal, and Srilanka in which awareness...
in relation to sexually active at an early age can cause cervix cancer was 26.1% (India), 38.8% (Nepal) and 27.7% (Srilanka). Awareness in relation to multiple sex partners can cause cervix cancer was 39.8% (India), 51.3% (Nepal) and 43.85 (Srilanka).17

In this study, 66.7% of the respondents responded that the Pap smear test is a measure of cervical cancer screening. A similar finding is reported in the study by Shrestha and Dhakal revealed that 68.8% were aware that pap smear is a screening test for cervix cancer18 and it is contradicted with the study done by Shrestha, Saha and Tripathi revealed that only 18.1% of respondents were aware of Pap smear test19 and with the findings of the study done by John (2.9%).15 In this study 12.4% of respondents mentioned that VIA as the screening test for cervical cancer screening. The finding is supported by John (11.3%)15 and inconsistent finding with the finding of Shrestha and Dhakal 2017 which revealed that 21.5% mentioned Visual Inspection with Acetic Acid (VIA) as the screening test for cervical cancer.18 Similarly, 34.9% of the respondents revealed that an appropriate time interval for cervical screening is every 3 years. The finding is inconsistent with the study of Shrestha and Dhakal 2017 and Shrestha (2014) showed that 7.3% and 21.0% of them said that screening should be done every 3 years interval respectively.18, 20 As per findings, 55.9% said that the best time to perform cervical screening is after 7 days of menstruation. In the study Shrestha and Dhakal (2017) and Shrestha (2014), 33.3% and 34% of the respondents knew screening should be done 10-20 days of menstruation respectively.18, 20

In the present study, 28% of the respondents had a good level of awareness, 28.5% of the respondents had a satisfactory level of awareness, and 43.5% of the respondents had a poor level of awareness. The study conducted in Chitwan by Ranabhat and Thapa (2018) reported similar findings that 27.4% of the women had a good level of awareness, 22.9% had a fair level of awareness, and 49.7% of women had a poor level of awareness in cervical cancer.21 The study conducted by Harsh and Tanya (2014) in Mangalore, India demonstrated contrast finding that 6% of the respondents had good awareness, 12% had satisfactory awareness, and 81.9% had poor awareness in cervical cancer.22 A low level of awareness might be due to lack of population-based screening programs, inefficient mass media campaigns, and cultural barriers wherein women in Nepal feel shy to discuss the diseases affecting the sexual organs.

This study demonstrated a significant relationship between the level of awareness of cervical cancer and age of respondents (p=0.029) which is in accordance to the study conducted by Shrestha et al. (2013) in Nepal (p=0.013).19

Conclusion
Based on the findings of the study, it is concluded that almost half of the women have a poor level of awareness regarding cervical cancer. There is a statistical association between level of awareness with age, ethnicity, and marital status and heard about the organism that causes cervical cancer. Therefore, there is a need to conduct an awareness program on cervical cancer, it’s screening, and preventive measures through the medium of health personnel, friends, and mass media like television, radio, and newspaper as these are the common source of information. Cervical cancer screening health camps and awareness programs can also be conducted at the community level.

References
1. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. American Cancer Society Journals. Retrieved from https://acsjournals.onlinelibrary.wiley.com/doi/full/10.3322/caac.21492
2. Jacob M. Information, education & communication: Corner stone for preventing cancer of the cervix. Indian J Med Res 2012; 136 : 182
3. Information Center on HPV and Cervical Cancer. Human papillo- mavirus and related cancers, fact sheet 2013. Available from: http:// www.hpvcentre.net/statistics/reports/NPL_FS.pdf. Accessed April 25, 2014.
4. World Health Organization. Globocan 2018. Retrieved from file:///D:/1.%20BT%20
5. B.P. Koirala Memorial Cancer Hospital (2016). Annual report 2016. Retrieved http://www.bpkmch.org.np/sites/default/files/BPKMCH/Annual Report 2016New.pdf

6. 62Walboomers JM, Jacobs MV, Manos MM, et al. Human papillomavirus is a necessary cause of invasive cervical cancer worldwide. J Pathol. 1999; 189: 12-19. Wiley Online LibraryCASPubMedWeb of Science®Google Scholar

7. Herrero R, Murillo R. Cervical cancer. In: MJ Thun, MS Linet, JR Cerhan, CA Haiman, D, Schottenfeld eds. Cancer Epidemiology and Prevention. 4th ed. New York: Oxford University Press; 2018: 925-946.

8. Ronco G, Dillner J, Elfstrom KM, et al. Efficacy of HPV-based screening for prevention of invasive cervical cancer: followup of four European randomised controlled trials. Lancet 2014; 383: 524-532.

9. Department of Health Service. National Guideline for cervical cancer screening and prevention in Nepal 2010.

10. Pradhan N, Giri K, Rana A. Cervical cytological study in unhealthy and healthy looking cervix. Nepal Journal of Obstetrics and Gynaecology. 2007;2(2):42-7.

11. Shrestha P. Knowledge, attitude, and practice regarding Pap smear test among women in ward no. 14, Dharan. 2014. [Master’s Thesis in Public Health: The Arctic University of Norway] Retrieved from: http://munin.uio.no/bitstream/handle/10037/7995/thesis.pdf?sequence=2&amp;isAllowed=y.

12. Sherpa AT, Karki BS, Sundby J, Nygard M, Franceschii S, Clifford G. Population based study of cervical cancer screening in Bharatpur, Nepal. Journal of Manmohan Memorial Institute of Health Sciences 2015; 1(4):3-8.

13. Cochran, W.G. (1997). sampling techniques (3rd ed.).New York. Retrieved from https://gist.githubusercontent.com/marcoscaceres/7137166.

14. Khadka K, Shah SK, Sanal TS, Mathias J, Upadhyay A, Ghimire R, Ghimire S. Knowledge and Awareness about Cervical Cancer Screening and HPV vaccine among Females aged 15-49 years in Rukum District of Nepal. American Journal of Cancer Prevention. 2017;5(1):10-6.

15. John J. The knowledge, attitude, practice and perceived barriers towards screening for premalignant cervical lesions among women aged 18 years and above, in Songea urban, Ruvuma (Doctoral dissertation, Muhimbili University of Health and Allied Sciences). URI: http://hdl.handle.net/123456789/50,2011

16. KC R, Giri R. Knowledge regarding cervical cancer among undergraduate female students at a selected college of Lalitpur, Nepal. Canadian Oncology Nursing Journal 2019; 29(3): 184–188. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6970460/

17. 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 Pacific Journal of Cancer Prevention 2011; 12:1707-12.

18. Shrestha S, & Dhakal P. Knowledge, Attitude and Practice Regarding Cervical Cancer Screening among Women attending a Teaching Hospital, Bharatpur, Chitwan. Journal of Family and Reproductive Health 2017; 11(1):18-23.

19. Shrestha J, Saha R, Tripathi N. Knowledge, Attitude and Practice regarding Cervical Cancer Screening Amongst Women visiting Tertiary Centre in Kathmandu, Nepal. Nepal Journal of Medical sciences 2013;2(2):85-90.

20. Shrestha P. Knowledge, attitude, and practice regarding Pap smear test among women in ward no. 14, Dharan. 2014. [Master’s Thesis in Public Health: The Arctic University of Norway] Retrieved from: http://munin.uio.no/bitstream/handle/10037/7995/thesis.pdf?sequence=2&amp;isAllowed=y.

21. Ranabhat MK, Thapa B. Factors influencing utilization of cervical cancer screening services among married women in community, Chitwan. Journal of Chitwan Medical College 2017; 7(3):42-9.

22. Kumar HH, Tanya S. A study on knowledge and screening for cervical cancer among women in Mangalore city. Annals of medical and health sciences research. 2014; 4(5):751-6.