

Awareness of cervical cancer and its prevention among women of reproductive age group (15-49 years) in Bishenpur District, Manipur: A cross-sectional study

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Abstract:Background: Cervical cancer is the commonest cancer causing death among women in developing countries. Key to reduce cervical cancer morbidity and mortality is early detection and treatment of cervical pre-cancerous lesions. Knowledge and awareness of cervical cancer are important determinants of participation in cervical cancer prevention and control. Objectives: To assess the knowledge, attitude and practice related to cervical cancer and its prevention among women of reproductive age group (15-49 years) in Bishenpur, Manipur. Methods: Community based cross-sectional study among 500 women belonging to reproductive age group. Data were collected by interview method using pre-tested questionnaire. Scores were given to assess level of knowledge and attitude. Descriptive statistics were used. Results: Out of the total 500 participants, 384 (76.8%) have never heard of cervical cancer. For those who have heard, the most common source of information was radio (40.5%). Majority of the participants (69.8%) had poor knowledge and only 25.9% had favourable attitude towards cervical cancer prevention. Only one of the participants had received HPV vaccination. Conclusion: Majority of the women had a low level of awareness of cervical cancer and uptake of screening services was low.

Keywords: Awareness, cervical cancer, prevention, reproductive age group women, screening.

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I. Introduction

Cervical cancer is the commonest cancer causing death among women in developing countries.¹ Every year in India, 96,922 women are diagnosed with cervical cancer and 60,078 die from the disease.² It is the second most common cancer in women aged 15–44 years.³ In South Asia, India is also one of the highest contributors to age standardized incidence of cervical cancer at 14.7, compared to 10.6 in Bangladesh, 7.8 in Sri Lanka and 2.2 in Iran.⁴ Age adjusted incidence rate for cervical cancer in Manipur is 6.1 per 1,00,000 population.⁵ Cancer control became a part of a more comprehensive, larger program for non-communicable diseases called National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular diseases and Stroke (NPCDCS), where the common risk factors are addressed in an integrated manner.⁶

HPV types 16 and 18 causes 70% of cervical cancer and pre-cancer lesions.⁷ Key to reduce cervical cancer morbidity and mortality is early detection and treatment of cervical pre-cancerous lesions.⁸ Women in the reproductive age group, being very crucial due to increased chances of exposure to risk factors, with proper knowledge and hygienic practices, can prevent the occurrence of this cancer, along with regular screening and timely vaccination.^{9, 10, 11} In Indian women, HPV infection is common at 26–35 years of age, which is a decade later than that in developed countries, and cancer occurs between 45–59 years of age. Hence, there is a long gap between infection and invasive cancer, which gives ample scope for preventive activities.¹² However, many women in Manipur do not go for screening and even if they do, they go only after developing signs and symptoms. By then, the women might have crossed the treatable stage. Most of the times, this occurs due to lack of awareness. Awareness of cervical cancer is of paramount importance for participation in prevention and control activities. Hence this study was conducted to assess the knowledge, attitude and practice related to cervical cancer and its prevention among women of reproductive age group in Bishenpur.

II. Material and Methods

Study Design: Community-based cross-sectional study

Study Location: 12 wards of Bishenpur sub-division of Bishenpur District in Manipur.

Study Duration:Data were collected between 27th March– 22nd April 2019.

Sample size: 500 women of reproductive age group (15-49 years).

Sample size calculation: Sample size was calculated assuming prevalence of 50%. A sample size of 384 was obtained however a non-response rate of 20% was added and final calculated sample size was rounded up to 500. Ward wise sample calculation was done by probability proportionate to size and convenience sampling was used to select the participants from the wards (Table 1). The total number of women in the age group 15-49 years was obtained from the 2011 census data for Bishenpur Municipal area. Adding a compound increase in population for this age group by 10% per year for 8 years, we got a total of 3332 women for the 12 wards under Bishenpur Municipal area. Ward wise population distribution along with number of samples taken from each ward is depicted below in the table.

$$\text{No. of participants for each ward using PPS was calculated using the formula} = \frac{\text{No. of women in the age group 15-49 years in the ward}}{\text{Total number of women in the age group 15-49 years under Bishenpur Municipal area}} \times 500$$

Table-1: Ward wise distribution of women in reproductive age group and sample size by PPS

| Ward no. | No. of women in 15-49 years | Sample size by PPS |
|-------------|-----------------------------|--------------------|
| 1 | 281 | 42 |
| 2 | 231 | 35 |
| 3 | 285 | 43 |
| 4 | 324 | 49 |
| 5 | 287 | 43 |
| 6 | 327 | 49 |
| 7 | 387 | 58 |
| 8 | 368 | 55 |
| 9 | 168 | 25 |
| 10 | 226 | 34 |
| 11 | 294 | 44 |
| 12 | 154 | 23 |
| Grand total | 3332 | 500 |

Subjects: Women of reproductive age group (15-49 years) in Bishenpur sub-division.

Exclusion criteria:

1. Those who refused to participate
2. Women who have had total hysterectomy
3. Unavailability of eligible participants at the time of visit
4. Severely ill women and
5. Women already diagnosed and/or on treatment for cervical cancer

Procedure methodology:

For each ward, we stood in a position which was considered as the center of the ward and a bottle/pen was spun to select direction of the first household. Participants were chosen from the subsequent household consecutively till the required number was attained. If a house was locked, the house next to it was taken. When there were more than one eligible participants in the same household, only one person was chosen using lottery method. After explaining the purpose of the study, an informed verbal consent was taken from the participants. The participants were reassured about their anonymity at the time of interview. Pre-tested questionnaire was used for data collection.

Knowledge about cervical cancer was assessed by 14 questions and the level of knowledge of the participants was analyzed after assigning scores to the responses to knowledge questions with a score of 1 for every correct answer and 0 for every wrong answer/don't know. The highest and the lowest scores attainable by the participants for knowledge was 19 and 0 respectively. Those who scored below 25th percentile, i.e. <5/19, were said to have poor knowledge, those who scored between 25th to 50th percentile, i.e. 5 to 9, were said to have fair knowledge, those who scored between 50th to 75th percentile, i.e. 10 to 14, were said to have average knowledge and those who scored ≥75th percentile, i.e. ≥15 were said to have good knowledge.

For assessment of attitude of the participants, there were six statements and scores were given based on 5 point Likert scale with a minimum of 1 and a maximum of 5. The total score ranged from 6 to 30. Reverse scoring was done for statement 6. Those who scored ≥75th percentile (≥26/30) was considered to have favourable attitude.

Statistical analysis:

Data collected were checked for consistency and completeness and were entered in IBM SPSS statistics for Windows, Version 21.0 Armonk, New York. Descriptive statistics like mean, standard deviation, quartile, frequency and percentages were used. Ethical approval was obtained from the Research Ethics Board of RIMS, Imphal.

III. Result

The total number of women who participated in this study was 500. Of these, 35.4% belonged to 30-39 years and 33.2% belonged to 20-29 years age group. Mean age of the participants was 31.3±8.9 years. More than half (56.6%) were Hindu by religion. Majority of the women (54.4%) were educated up to secondary level. More than two-third (70.8%) of the participants were married and majority(68.8%) of these women were living with their husbands. A little more than half (50.4%) of the participants were homemakers. Less than one-third (30.6%) were earning (Table 2).

Table 2: Socio-demographic characteristics of the participants (N=500)

| Variables | n | % |
|-------------------------------------|-----|------|
| Age group (in years) | | |
| ≤19 | 55 | 11.0 |
| 20 to 29 | 166 | 33.2 |
| 30 to 39 | 177 | 35.4 |
| ≥40 | 102 | 20.4 |
| Religion | | |
| Hindu | 283 | 56.6 |
| Christian | 86 | 17.2 |
| Islam | 35 | 7.0 |
| Sanamahi | 96 | 19.2 |
| Education | | |
| Illiterate | 27 | 5.4 |
| Primary | 97 | 19.4 |
| Secondary | 272 | 54.4 |
| College/University | 104 | 20.8 |
| Marital status | | |
| Unmarried | 121 | 24.2 |
| Married and living with husband | 344 | 68.8 |
| Married and not living with husband | 10 | 2.0 |
| Divorced | 8 | 1.6 |
| Widow | 17 | 3.4 |
| Occupation | | |
| Home maker | 252 | 50.4 |
| Self-employed | 110 | 22.0 |
| Student | 95 | 19.0 |
| Others* | 43 | 8.6 |
| Earning status | | |
| Earning | 153 | 30.6 |
| Not earning | 347 | 69.4 |

*Others-teacher, daily wager, health worker, police, banker, cook in Government school

Table 3: Distribution of risk factors associated with cervical cancer among married participants (N=379)

| Variables | n | % |
|---|-----|------|
| Age at marriage (in years) | | |
| < 18 | 37 | 9.8 |
| 18 to 34 | 335 | 88.4 |
| >34 | 7 | 1.8 |
| Age at first pregnancy (in years) [N=366]* | | |
| < 18 | 25 | 6.8 |
| 18 to 34 | 335 | 91.5 |
| >34 | 6 | 1.7 |
| Number of living children | | |
| 0 | 16 | 4.2 |
| 1 | 93 | 24.5 |
| 2 | 161 | 42.5 |
| 3 | 81 | 21.4 |
| 4 | 24 | 6.3 |
| 5 | 2 | 0.5 |
| 6 | 2 | 0.5 |
| History of miscarriage/abortion | | |
| Yes | 142 | 37.5 |
| No | 237 | 62.5 |
| Use of contraception (N=81) | | |
| OCP | 57 | 70.4 |

| | | |
|------------------|----|------|
| IUCD | 11 | 13.6 |
| Condom | 5 | 6.2 |
| Natural method | 1 | 1.2 |
| Permanent method | 7 | 8.6 |

*13 were never pregnant

The mean age at marriage was 22.8 ± 4.8 years with a range of 11 to 40. Out of the total 379 participants who were married, 9.8% were married before the age of 18 years and 1.8% of the participants got married after the age of 34 years. The mean age at first pregnancy was 23.4 ± 4.7 years with a range of 13 to 39 years. Most of them (91.5%) had their first pregnancy between the age range of 18 to 34 years. Majority of them (42.5%) had two living children. Out of the 379 participants, 142 (37.5%) had history of miscarriage/abortion. Among those who used contraceptive method, OCP (70.4%) was the most common (Table 3). Out of the total 500 participants, 384 (76.8%) have never heard of cervical cancer. For those who have heard, the most common source of information was radio (24.6%) [Table 4].

Table 4: Awareness about cervical cancer (N=500)

| Variables | n | % |
|---|-----|------|
| Ever heard of cervical cancer (N=500) | | |
| Yes | 116 | 23.2 |
| No | 384 | 76.8 |
| If yes, what was the source of information? (N=116) n* % | | |
| Radio | 47 | 40.5 |
| Friend | 45 | 38.8 |
| Health care provider | 22 | 19.0 |
| Television | 22 | 19.0 |
| Newspaper | 16 | 13.8 |
| Internet | 14 | 12.1 |
| School/College | 13 | 11.2 |
| Parents/Family member | 11 | 9.5 |
| Magazine | 1 | 0.9 |

*multiple answers allowed

Table 5: Knowledge about cervical cancer (N=116)

| Parameters | n | % [†] |
|---|----|----------------|
| Risk factors for cervical cancer* | | |
| Having multiple sexual partners | 27 | 12.4 |
| Tobacco consumption | 21 | 9.7 |
| Infection by HPV | 18 | 8.3 |
| Having sexually transmitted infections | 18 | 8.3 |
| Early age of sexual intercourse | 17 | 7.8 |
| Cigarette smoking | 14 | 6.5 |
| Increased parity | 13 | 6.0 |
| Early age at first pregnancy | 7 | 3.2 |
| Having weakened immunity | 5 | 2.3 |
| Not using condom during sex | 4 | 1.9 |
| Don't know | 73 | 33.6 |
| Signs and symptoms of cervical cancer* | | |
| Abnormal vaginal bleeding | 30 | 16.7 |
| Menstrual abnormalities | 25 | 13.9 |
| Persistent pelvic pain | 24 | 13.3 |
| Abnormal vaginal discharge | 16 | 8.9 |
| Unexplained weight loss | 7 | 3.9 |
| Pain during sex | 4 | 2.2 |
| Pain during micturition | 3 | 1.7 |
| Don't know | 71 | 39.4 |
| Ways to prevent cervical cancer* | | |
| Avoiding multiple sexual partners | 20 | 11.2 |
| Maintaining good genital hygiene | 17 | 9.5 |
| Sexual abstinence before marriage | 13 | 7.3 |
| Using condom during early sexual intercourse | 13 | 7.3 |
| Going for screening tests | 13 | 7.3 |
| Avoiding early marriage | 12 | 6.7 |
| Vaccination | 11 | 6.1 |
| Regular exercise | 2 | 1.1 |
| Don't know | 78 | 43.5 |
| Ways to detect cervical cancer* | | |
| Test done with samples taken from cervix | 27 | 17.2 |
| Ultrasonography | 27 | 17.2 |
| Gynaecological examination | 21 | 13.3 |
| Blood tests | 8 | 5.1 |
| Chest X-ray | 2 | 1.3 |

| | | |
|---|----|------|
| Don't know | 72 | 45.9 |
| Is cervical cancer curable? | | |
| Yes | 97 | 83.6 |
| No | 19 | 16.4 |
| If yes, when is it curable? (N=97) | | |
| Early stage | 85 | 87.6 |
| Curable till late stage | 1 | 1.0 |
| Curable after surgery | 2 | 2.1 |
| Don't know | 9 | 9.3 |
| Treatment options for cervical cancer* | | |
| Surgery | 48 | 30.2 |
| Chemotherapy | 32 | 20.1 |
| Radiotherapy | 20 | 12.6 |
| Antibiotics | 2 | 1.3 |
| Don't know | 57 | 35.8 |

*multiple answers allowed; †percentages are out of total response

Among those participants who were aware about cervical cancer, one-third (33.6%) were not aware of even a single risk factor of cervical cancer. Nearly four out of ten participants (39.4%) were not aware of even a single sign or symptom. Similarly, participants had poor knowledge regarding ways of prevention and detection of cervical cancer. Out of the 116 participants, majority (83.6%) responded cervical cancer was curable. Out of those women who responded cervical cancer was curable, majority (87.6%) correctly responded that it was curable in the early stage (Table 5). Based on the scores obtained, majority of the participants (69.8%) had poor knowledge about cervical cancer (Table 6).

Table 6: Classification of participants based on knowledge of cervical cancer (N=116)

| Knowledge category | Quartile | Scores | n | % |
|--------------------|----------|----------|----|------|
| Poor | First | 0 to 4 | 81 | 69.8 |
| Fair | Second | 5 to 9 | 31 | 26.7 |
| Average | Third | 10 to 14 | 3 | 2.6 |
| Good | Fourth | 15 to 19 | 1 | 0.9 |

Table 7: Attitude towards cervical cancer screening and its prevention (N=500)

| Statement | Strongly disagree, n (%) | Disagree, n (%) | Neutral/ Don't know, n (%) | Agree, n (%) | Strongly agree, n (%) |
|---|--------------------------|-----------------|----------------------------|--------------|-----------------------|
| If offered free clinical cervical cancer screening, I would be willing to go for it | 0 (0.0) | 2 (1.7) | 1 (0.9) | 57 (49.1) | 56 (48.3) |
| Women should get an internal examination by a Gynaecologist regularly | 0 (0.0) | 5 (4.3) | 7 (6.0) | 74 (63.8) | 30 (25.9) |
| HPV vaccine is effective in preventing cervical cancer | 1 (0.9) | 2 (1.7) | 29 (25.0) | 64 (55.2) | 20 (17.2) |
| Even if HPV vaccine is expensive, I will take it since it is beneficial | 0 (0.0) | 0 (0.0) | 10 (8.6) | 80 (69.0) | 26 (22.4) |
| I would recommend the vaccine to other women | 0 (0.0) | 2 (1.7) | 9 (7.8) | 81 (69.8) | 24 (20.7) |
| Cervical cancer is incurable even if screening is effective | 4 (3.4) | 45 (38.8) | 45 (38.8) | 21 (18.1) | 1 (0.9) |

Attitude related to prevention of cervical cancer was assessed by six statements (Table 7). Only about a quarter of them (25.9%) had favourable attitude towards cervical cancer prevention.

Table 8: Practice related to cervical cancer (N=116)

| Variables | n | % |
|--|-----|------|
| Vaccinated with HPV vaccine? | | |
| Yes | 1 | 0.9 |
| No | 115 | 99.1 |
| If no, why? (N=115) | | |
| Not aware | 112 | 96.5 |
| No reason | 3 | 2.6 |
| Ever discussed about cervical cancer with anyone? | | |
| Yes | 25 | 21.6 |
| No | 91 | 78.4 |
| If yes, with whom? (N=25) | | |
| With health care providers | 4 | 16.0 |
| With peers | 20 | 80.0 |
| With elders | 1 | 4.0 |
| Ever undergone screening for cervical cancer? | | |
| Yes | 4 | 3.4 |
| No | 112 | 96.6 |

| If no, why? (N=112) | | |
|---------------------|-----|------|
| Not aware | 101 | 90.2 |
| No time | 2 | 1.8 |
| No reason | 9 | 8.0 |

Out of the 116 participants, who have heard about cervical cancer, only one had received HPV vaccine. Lack of awareness of the existence of vaccine (96.5%) was the commonest reason for not vaccinating. Only one-fifth of the participants (21.6%) had ever discussed about cervical cancer and of those who have ever discussed, majority of them (80%) discussed with their peers. Only 3.4% of the participants had ever gone for cervical cancer screening. Majority(90.2%) did not go for screening because they were not aware of it (Table 8).

IV. Discussion

In this study, only few participants were exposed to some of the risk factors of cervical cancer such as early age at marriage, early age at first pregnancy and increased parity which were less than the study conducted in Tamil Nadu.¹³ Use of oral contraceptive pills was the commonest contraceptive method used by the married participants in this study. Several factors increase the risk of cervical cancer. Early age at onset of sexual activity and multiple sexual partners have been identified as risk factors. The risk may also be increased in women taking immunosuppressive medications, women on a diet low in fruits and vegetables, women with long term use of oral contraceptives and women in poverty¹⁴ although these factors could not be assessed in the current study.

Less than one-fourth of the participants (23.2%) have ever heard about cervical cancer which was in contrast with the findings of Aswathy et al¹¹ in Kerala, Krishnaveni et al¹³ in Tamil Nadu and Ramaiah et al¹⁵ in Karnataka which showed higher level of awareness. This may be probably due to higher literacy levels in the South Indian states. The women who have ever heard of cervical cancer were asked about the source of their information. The most common source of information was the radio (40.5%) which was consistent with findings in Ethiopia¹⁶ and Nigeria.¹⁷ This may be because radio is the most commonly used mass media in remote areas. This highlights the importance of mass media in dissemination of health information

Out of those participants who had ever heard of cervical cancer, majority of the respondents (87.6%) were aware that cervical cancer was curable if diagnosed at an early stage which was similar to the findings of Basu et al²⁰ in Maldives where 85% of the women agreed that cervical cancer was curable if detected early. Like the participants in the study of Mutambara et al²¹ in Zimbabwe, the participants in this study were aware that if early interventions were made, treatment could reduce the chances of disease progression. When asked about the ways to detect cervical cancer, around a quarter of them (23.3%) responded by testing samples obtained from the cervix (although only a few could name Pap test correctly) which is similar to the findings in Kerala¹¹ and Nepal.²² Only few of the participants have heard about Visual Inspection with Acetic acid (VIA), which is the test recommended by NPCDCS for cervical cancer screening.

Although there were variations in the level of awareness regarding cervical cancer, poor knowledge was a common observation in some of the studies conducted in India^{11, 13, 14, 18}, including the current study. The lack of knowledge is mainly due to lack of population-based screening programs, inefficient mass media campaigns and cultural barriers that prevent women in India to discuss freely and publicly about diseases affecting sexual organs.¹⁹ Based on the scores obtained, it was found that majority of the participants (69.8%) had poor knowledge about cervical cancer which was similar to the findings of the studies from Kerala¹¹ and Karnataka¹⁵ where majority had poor knowledge on the various aspects like symptoms, risk factors, screening tests, etc. A study in Maldives concluded that the knowledge of cervical cancer was poor among all age groups irrespective of their literacy levels.²⁰ The assessment of status of knowledge, attitude and practice, and screening for cervical cancer in countries at different levels of development by Raychaudhuri et al¹⁸ concluded that there was lack of knowledge and favourable attitude among the concerned population regarding the importance of early detection of cervical cancer as well as its rate of mortality. India, which has got the second largest population in the world, has been specially mentioned to highlight the absence of knowledge towards cervical cancer.¹⁸

A vast majority of the participants were willing to go for cervical cancer screening if the services were provided for free which was consistent with the findings of Krishnaveni et al¹³ and Ramaiah et al¹⁵ although 1.7% said they would still disagree to the offer. Similar findings were observed in studies done in Kuwait.²⁴ Overall, in this study, only a quarter (25.9%) of the participants showed favourable attitude towards cervical cancer screening and prevention. This may be due to lack of awareness about this cancer among women in this part of the country due to lack of information, education and communication (IEC) activities by health professionals.

In the current study, majority (96.6%) of the participants had never gone for cervical cancer screening due to lack of awareness, lack of time and some even said they had no reason. Similar observations were also made in other places of India.^{11, 13, 15} The screening coverage in the age group of 18 to 69 years among Indian women was 2.6% (4.9% among urban and 2.3% among rural)²⁵, and was found to vary between 4 to 6% in poor

and rich women in India.²⁶ The other reasons given in some studies included due to shy factor, fear of procedure and fear of bad result.^{13, 27} This points to the fact that due to lack of knowledge about this cancer, most women were not aware and were ignorant to go for screening. Among the study participants of this study, only one participant had received HPV vaccination and majority of them had not taken HPV vaccination due to lack of awareness. The high cost of vaccination and lack of knowledge about the vaccine were the most important barriers to HPV vaccination in the study of Touch et al²⁸ in Cambodia.

Probably, this study was one of the first studies conducted in the community to assess women's awareness related to cervical cancer prevention in Bishenpur District and since all the wards in Bishenpur municipal area were covered, the study findings may be generalizable. However, the age of initiation of sexual activity could not be elicited as most of the participants gave socially desirable answers by responding that it started after marriage. Hence inquiring about the same to unmarried participants was not possible. We also could not elicit the use of contraceptive measures among widows and divorcees due to sensitivity issues.

Lack of knowledge about the disease, absence of the concept of preventive behaviour appear to be important factors.²⁹ Evidence based studies have found that the optimal age for cervical cancer screening to achieve greatest public health impact is between 30-39 years. A single visit or two visits can reduce the lifetime risk of cervical cancer by 25% and 35%, respectively.³⁰ Specific health education exercises can motivate women to go for Pap test. These exercises should involve community leaders and also the males in the family. It should not just provide information but should involve a process of reconstructing concepts in the context of women's lives.³¹ Knowledge about cervical cancer is thus an essential element in determining whether a woman will practice the measures to prevent cervical cancer.

V. Conclusion

Only three in 13 participants have ever heard of cervical cancer. Among those women who were aware about cervical cancer, seven out of ten participants had poor knowledge. Three out of four participants had an unfavourable attitude. Only three out of 500 participants had ever gone for screening and only one had taken the HPV vaccine. The uptake of screening services as well as vaccination was poor even though they showed willingness to go for cervical cancer screening and vaccination. This study showed that women in Bishenpur Municipal area had low level of awareness regarding cervical cancer and its prevention. Hence it is recommended that specific health education activities about cervical cancer should be conducted, along with the active participation of the community to raise the awareness level of reproductive age women.

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