

Original Article***Risk factors of Cervical Cancer Among the Patients Attending Selected Tertiary Level Hospitals***

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Abstract

Introduction: *In Bangladesh cervical cancer is the second leading carcinoma in women and worldwide it is the most common prevalent cancer.*

Objective: *The study was done to determine the risk factors of cervical cancer among the patients attending selected tertiary level hospitals in Dhaka city.*

Materials & methods: *This was a cross-sectional study. Data were collected purposively among fifty one respondents' during the period of January 2015 to December 2015.*

Results: *Among the respondents, 33.3% were in the age group of ≤ 40 years and 9.8% was in age group of ≥ 56 years, the mean age was 45.39 ± 7.74 years. Almost all (96.1%) of the respondents were married. Majority (57%) were illiterate and one third (33%) completed primary level of education. Accordingly all of the respondents were homemaker, majority (62.7%) of them had regular menstrual cycle and around 68.6% of the respondents were developed menarche at the age of ≤ 13 years where rest of them at the age of ≥ 14 years.*

Their number of mean gravidity was 4.06 ± 1.406 and their parity mean was 3.65 ± 1.446 . Mean age at marriage was 15.6 ± 1.364 and majority (54.9%) of them were aged 15-16 years, where mean age at first pregnancy was 17.82 ± 2.471 and nearly half of them were in age group 16-17 years. Most (90%) of the respondents did not maintained genital hygiene and 61% had history of abortion. Most (90.2%) of the respondents had no exposure to multiple sexual partner. Around 54.9% had no history of vaginal discharge and majority of the respondents (56.9%) had no history of postmenopausal bleeding. About 56.9% had no history of current tobacco use and nearly half

(47.0%) of them were taking oral contraceptive pill while 31.4% did not use any method and only 2.0% used intrauterine contraceptive device. Around 42.9% used contraceptive method for 6-10 years duration. Majority (70.60 %) of the respondents suffered from squamous cell carcinoma and only 14.7% had family relation with the disease. No respondents were vaccinated against Human Papilloma Virus.

Conclusion: Cervical cancer is the most common genital tract tumor in the developing country. Unfortunately the cervical cancer is the second leading cause of deaths in Bangladeshi women having the lack of preventive care. The present study explores the risk factors of Cervical cancer are multigravida, early marriage, first pregnancy at early age, poor genital hygiene and history of abortion.

Keywords: Cervical cancer, risk factors, Human Papilloma Virus

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Introduction

Cervical cancer is a type of cancer that occurs in the cells of the cervix - the lower part of the uterus that connects to the vagina. Human Papilloma Virus (HPV) is now been identified as the etiological agent responsible for cervical cancer. Various strains of the HPV, a sexually transmitted infection, play a role in causing most cervical cancer. Cervical cancer is due to the abnormal growth of cells that have the ability to invade or spread to other parts of the body¹. At early stage no typical symptom is seen. Later symptoms may include abnormal vaginal bleeding, may also indicate the presence of cervical cancer². Cervical cancer develops from precancerous changes over 10 to 20 years³. About 90% of cervical cancer cases are squamous cell carcinomas, 10% are adenocarcinoma, and a small number is of other types⁴.

Several risk factors increase the chance of developing cervical cancer. Women without any of these risk factors rarely develop cervical cancer. Some important risk factors are: Human papilloma virus infection: The most important risk factor for cervical cancer is infection by the human papilloma virus (HPV). Human papilloma virus (HPV) infection appears to be involved in the development of more than 90% of case⁵. Long term use of oral contraceptives (birth control pills): Women who have used oral contraceptives for 5 to 9

years have about three times more incidence of invasive cancer, and those who used them for 10 years or longer have about four times the risk. Having multiple full-term pregnancies, early pregnancy, Smoking: Women who smoke are about twice as likely as non-smokers to get cervical cancer. Poverty: Poverty is also a risk factor for cervical cancer. Many low-income women do not have ready access to adequate health care services, including Pap tests. Immunosuppression, Intrauterine device use, having a family history of cervical cancer.

Worldwide, cervical cancer is the fourth-most common cancer and the fourth-most common cause of death from cancer in women. In 2012, an estimated 528,000 cases of cervical cancer occurred, with 266,000 deaths. This is about 8% of the total cases and total deaths from cancer. About 70% of cervical cancers occur in developing countries³. In low-income countries, it is the most common cause of cancer death⁶. In both developed and developing countries, women of low socioeconomic status have a higher risk of cervical cancer. The widespread use of cervical screening programs has dramatically reduced the rates of cervical cancer.

In Bangladesh, 50.19 million women are at risk of cervical cancer and the annual incidence number is 17.686 cases. Cervical cancer covers about 22.4% of all cancer according to WHO report (September, 2010).

In 2013, WHO launched the Global Action Plan for the "Prevention and Control of Non communicable Diseases 2013-2020" that aims to reduce by 25% premature mortality from cancer, cardiovascular diseases, diabetes and chronic respiratory diseases by 2025. Cervical cancer can overcome by awareness about disease, screening program like, Pap smear, VIA and HPV vaccination. In Bangladesh, government took "National Cancer Control Strategy Plan of Action 2009-2015" by Directorate General of Health Services and Ministry of Health and Family Welfare.

HPV education regarding sexual hygiene and safe sexual behavior may be provided for prevention of cancer cervix. Safe sexual behavior protects women from the risk of cervical cancer by preventing infection by HPV. HPV vaccines protect against between two to seven high-risk strains viruses of this family and may prevent up to 90% of cervical cancers⁷. Early diagnosis of cancers can cure the disease. It can be implemented in Bangladesh using health education and training of primary health care workers. Health professionals should be trained for early detection and prompt referral of suspected cases. Early detection of 3 common forms of cancer such as oral, breast and cervix has been attempted by Government of Bangladesh under HNPS (2003-2011). Cervical cancer can be curable but it demand, specialized treatment facilities.

Materials & Methods

This hospital based cross-sectional study was done from January 2015 to December 2015. The study place was three selected tertiary level hospitals of Dhaka city. Dhaka Medical College Hospital, Ahsania Mission Cancer Hospital, Uttara. National Institute of Cancer Research Hospital, Mohakhali, Dhaka, Bangladesh. Purposive sampling was followed to select the sample from selected tertiary level hospitals. All the patients of cervical cancer were selected from tertiary level hospitals during data collection period. After exclusion of incomplete and faulty data, final sample size was 51 from whom data were collected. Respondents in selected tertiary level hospitals willing to participate and fulfilled the selection criteria (25 to 65 years) were recruited. Respondents who did not fulfill the criteria were not included. Semi structured questionnaire which was duly pretested and contained five major sections and also used checklist. Data were collected by face to face interview with the help of a semi structured questionnaire. They will be interviewed after giving informed consent. After meticulous checking and rechecking all data were entered and analyzed by Computer using statistical package for social science (SPSS), version- 17.

Results

Information's were collected from fifty one respondents.

Table 1: Distribution of respondents by their age in group

Age in group (years)	Frequency	Percent
≤ 40	17	33.3
41 -45	9	17.7
46 -50	14	27.5
51 -55	6	11.7
≥ 56	5	9.8
Total	51	100.0
Mean (±SD)	45.39(± 7.738)	

Table 1 shows that, the highest (33.3%) of the respondents were found at age ≤ 40 years. The age groups 46-50 years were in second highest (27.5%) position and ≥ 56 years were at least position.

Table 2: Distribution of respondents by number of gravida.

Number of gravidity	Frequency	Percent
≤ 2	8	15.7
3 -4	25	49.0
5 -6	15	29.4
≥ 7	3	5.9
Total	51	100.0
Mean (± SD) 4.06 ± 1.406		

Among 51 respondents, 49% of the respondents had 3-4 number of gravida and 15(29.4%) had 5-6 number of gravida, least 3(5.9%) had ≥7 number of gravida. Mean gravida 4.06 ± 1.406.

Table 3: Distribution of the respondents by age at first marriage

Age at firstmarriage (Years)	Frequency	Percent
≤ 14	10	19.6
15 -16	28	54.9
17 -18	11	21.6
≥ 19	2	3.9
Total	51	100.0
Mean (± SD) 15.6 ± 1.364		

Among 51 respondents, majority 28 (54.9%) respondents were found between the age group of 15-16 years when they were married first.11(21.6%) respondents were found between 17-18 years,10(19.6%) respondents were married ≤ 14 years and rest 2(3.9%) were married ≥ 19 years age group. Mean age 15.6 ± 1.364.

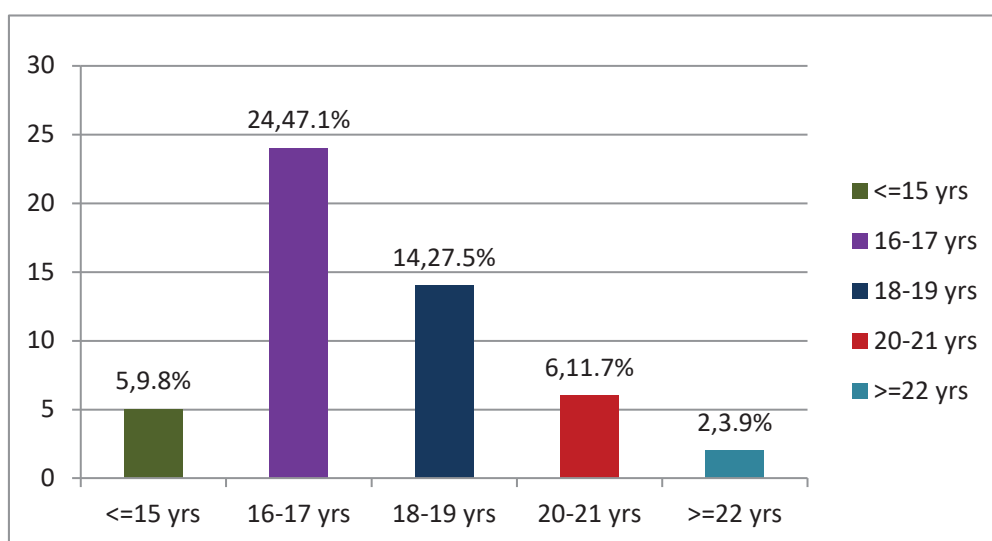


Figure 1: Distribution of the respondents by age at first pregnancy.

Mean 17.82 ± 2.471 years

Among 51 respondents, majority 24(47.1%) of the respondents become pregnant for the first time between 16-17 years of age, 14(27.5%) respondents were between 18-19 years and 2(3.9%) were ≥ 22 years age group.

Table 4: Distribution of the respondents by history of multiple sexual partners.

Multiple sexual partner	Frequency	Percent
Yes	5	9.8
No	46	90.2
Total	51	100.0

Table 4 shows that, majority of the respondents 46 (90.2%) had no history of multiple sexual partner but rest 5 (9.8%) had history of multiple sexual partners.

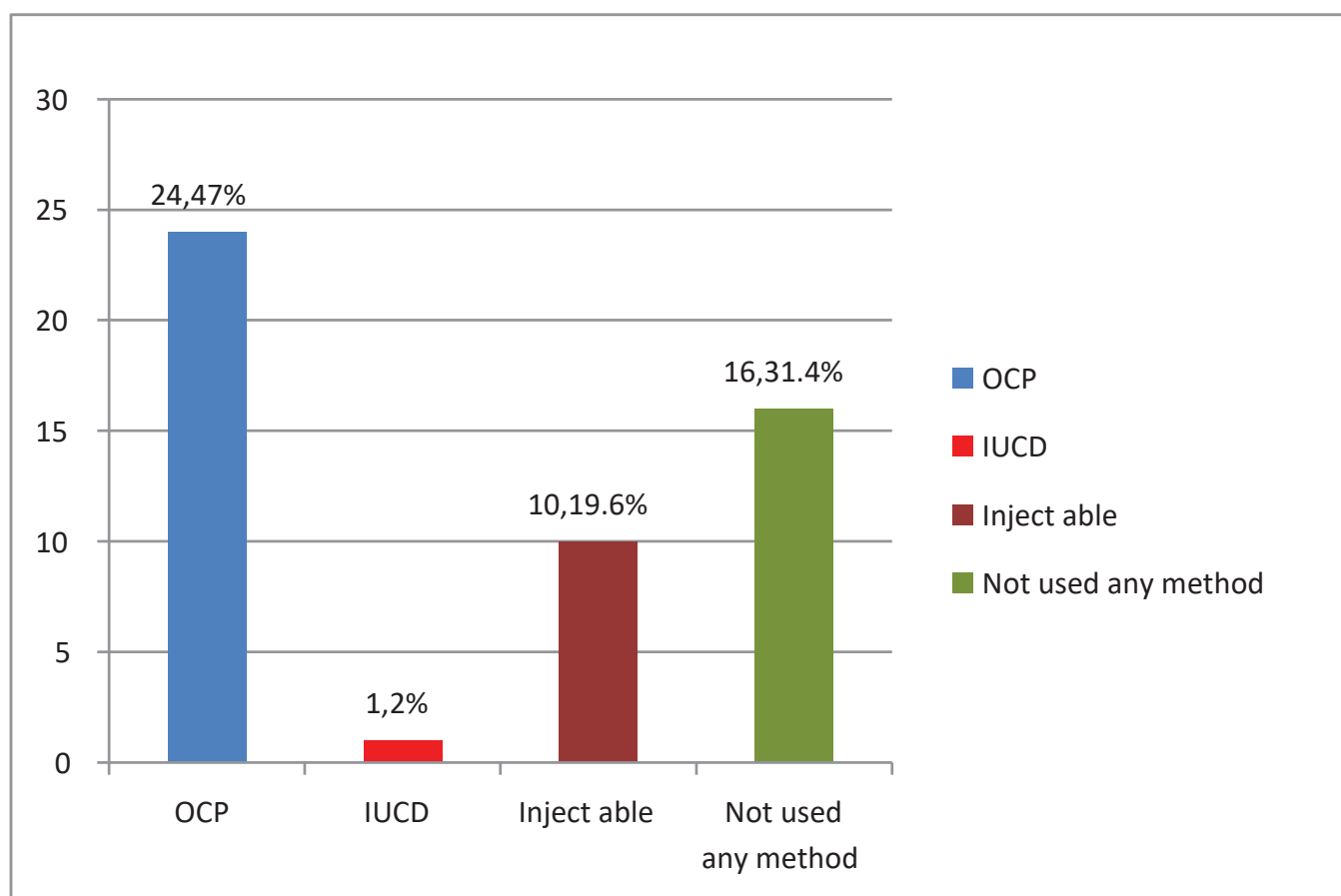


Figure 02: Distribution of respondents by contraceptive use.

Near half (47.0%) of the respondents were taking OCP.31.4% did not use any method, 10(19.6%) were taking inject table method and least number of the respondent 1(2.0%) took IUCD

Table 5: Distribution of the respondents by duration of tobacco consumption

Duration of tobacco consumption (years)	Frequency	Percent
≤ 5	3	13.6
6 - 10	8	36.4
≥ 11	11	50.0
Total	22	100.0
Mean(±SD)	10.14(± 3.550)	

Around 50.0% of the respondents consumed tobacco for ≥ 11 years, 36.4% consumed for 6-10 years and least number (13.6%) consumed tobacco for ≤ 5 year’s duration.

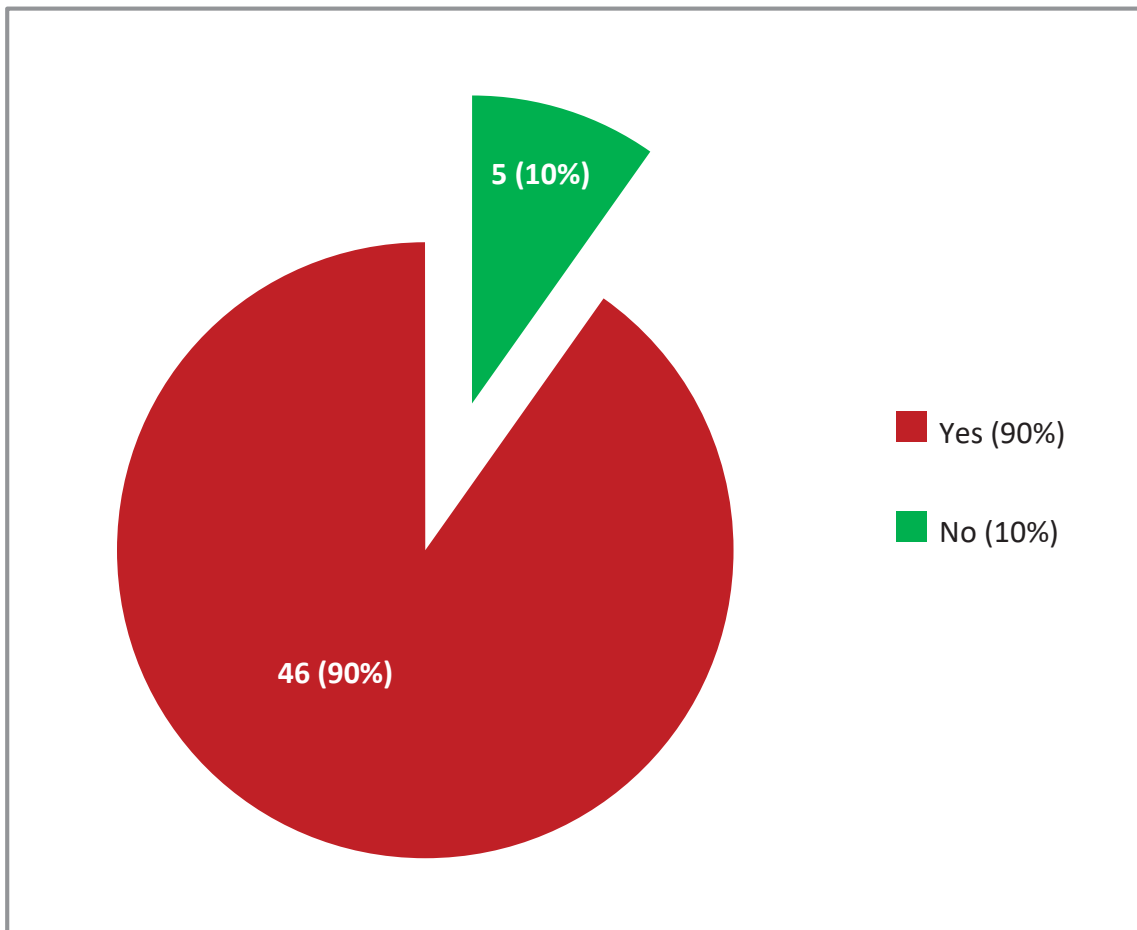


Figure 03: Distribution of the respondents by history of genital hygiene

Among 51 respondents, 90% of the respondents had not maintained genital hygiene and rest 10% of the respondents had maintained genital hygiene.

Discussion

This cross sectional study was conducted among fifty one respondents from three selected hospitals of Dhaka city. Most of the respondents (94.1%) were from outside Dhaka. The mean age of the respondents was 45.39 ± 7.738 years. Majority (33.3%) was 40 years or below and least 5 (9.8%) was 56 years or above age group. Similar result was found in other studies conducted in BSMMU where the mean age was 41.4 ± 10.6 years and also another study (2006 and 2013) in Kinshasa where the mean age for all participants was 43.0 ± 12.8 years^{8,9}. Out of 51 respondents 29 (57%) were illiterate. 17(33%) were educated up to Primary school and rest 5(10%) were educated up to secondary school. In another study 43% were illiterate, 41.3% were educated up to Primary school and rest (41.8%) were educated up to secondary school¹⁰. This variation may be due to different socio-economic conditions of these two study population. It was found that higher education had a decreased risk for cervical cancers. Another study 81.6% had no formal education. Presumably, decreased educational level causes an increase in intercourse at early age; sexual partner and poor genital hygiene¹¹. Many studies have found that risk of cervical cancer is more in low socio-economic condition, but particularly very few studies had given emphasis on occupation. In our country all of the women are home maker. Several studies showed that most of the cervical cancer patients were home maker, which identified that about 95% of cervical cancer patients were home maker¹².

Among 51 respondents, 32(62.7%) of the respondents had regular menstrual cycle and rest 19(37.3%) had irregular menstrual cycle. 25 (49%) of the respondent had 3-4 number of gravida and 15(29.4%) had 5-6 number gravida, least 3(5.9%) had >7 number of gravida. Mean gravidity was 4.06 ± 1.406 numbers. Among 58.8% of the respondents had 3-5 children, rest 6(11.8%) had > 6 children. Mean number of child/parity 3.65 ± 1.446 children. More or less similar

picture in the study found that 151 (32.07%) women were having three children's followed by 97 (20.99%) women having 4 children, 77(16.65%) had 5 children, 56 (12.11%) had more than 5 children. Average parity/number of child was found to be mean 3.47 ± 1.47 person¹³. Differences may be due to variation in place and number of study population.

In this study, 28 (54.9%) respondents were first marriage between 15-16 years, 11(21.6%) respondents were first marriage between 17-18 years, 10(19.6%) respondents were married 14 years or less and rest 2(3.9%) were married 19 years or above age group where mean 15.6 ± 1.364 years. More or less similar findings were present in other studies found that maximum women were married between 15-18 years i.e. 338 (73.16%) followed by 100 (21.44%) in 11-14 years of age, 22 (4.74%) in 19-22 years of age and only 2(0.42%) married in above 22 years of age. Minimum age at marriage was 11 years, and maximum was 26 years. Mean age at marriage was 15.58 years with S.D.1.86¹³.

Majority 24(47.1%) of the respondents were first pregnancy between 16-17 years, 14(27.5%) respondents were first pregnancy between 18-19 years and 2(3.9%) were >22 years age group where mean was 17.82 ± 2.471 years. Another study observed that maximum 143 (30.95%) women were had their childbirth at the age of 17 years, followed by 89 (19.25%) at 18 years, 35 (7.35%) at 19 years, 31(6.70%) at 20 years and 22 (4.76%) above 20 years of age. Minimum age at first childbirth was 13 years and maximum age was 32 years. Mean age at childbirth was 17.29 ± 1.91 ¹³. These are near about similar picture of our study.

Among cases of cervical carcinoma 9.8% had multiple sexual partner, 90.2% had no such relation. Another study found risk factors for contracting HPV was multiple sexual partners 33.8%, partner's multiple sexual partners 31.3%, failure to use condoms 26.3%, early sexual activity 18.0%. This dissimilarity of these results was may be due to chance of exposure to

multiple sexual partners in peoples of developed country like developing country.

Among 56.9% of the respondents were not current tobacco user and rest 43.1% were current tobacco user. Similar study found smoking as a risk factor ($p=0.0001$) with regard to smoking causing cervix cancer¹⁴. There are lots of studies to prove the hypothesis that genital hygiene affords some protection against the cervical cancer. In this study showed that 29 respondents had illiterate, where 3.9% had maintained genital hygiene and 52.9% not maintained genital hygiene. 33.3% had primary education, where 5.9% had maintained genital hygiene and 29.4% not maintained genital hygiene. 9.8% had secondary education where 2.0% had maintained genital hygiene and 7.8% not maintained genital hygiene. Education showed no significant association with genital hygiene for the development of cervical cancer.

Among the respondents, 54.9% had no history of vaginal discharge and rest 45.1% had history of vaginal discharge. 56.9% had no history of postmenopausal bleeding and 43.1% had history of postmenopausal bleeding. This was founds presence of *Trichomonas vaginalis* infection (aOR=2.62, 95%CI:1.35-5.07), cervical inflammation (aOR=4.22, 95%CI:3.39-5.26)¹⁵.

Most (47.0%) of the respondents were taking OCP. 31.4% did not use any method, 10(19.6%) were taking inject table method and least 1(2.0%) number of respondent took IUCD. Majority 15 (42.9%) of the respondents were using contraceptive between 6-10 years time period, 11(31.4%) were ≥ 11 years period and least number of the respondent 9(25.7%) were used ≤ 5 years period. Found 33.8% used oral contraceptives while 90.3% use less than 12 years of age duration and 9.7% were more than 12 years of age duration¹¹. All of the respondents (100%) were not-vaccinated. All of the respondents (100%) were taking treatment for cervical cancer.

The findings from this study will be helpful in strengthening the findings of previous studies conducted in the country and will help alert policy makers so they can plan timely interventions.

Conclusion

Cervical cancer is the most common genital tract tumor in the developing country. Unfortunately the cervical cancer is the second leading cause of deaths in Bangladeshi women having the lack of preventive care. In this study, more than one third was in the age group of forty years or less. Near half's of the respondents had three to four number of gravida, more than half of the respondents had three to five children. Majority of the respondent's first marriage were between fifteen to sixteen years, near half of the respondents had first pregnancy between sixteen to seventeen years. Majority had history of abortion and most of the respondents, did not maintained genital hygiene. As cervical cancer is one of the most common cancers among the women in most of the developing countries, substantial measures need to be taken to face such a situation.

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