Awareness of Cervical Cancer among Women in Bangladesh

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Abstract

In recent day cervical cancer is frequently occurring women disease in the world. It is the second most common cancer in women worldwide. In most countries in North America and Western Europe, the incidence of cervical cancer has been falling, although recently at a much slower rate. In many developing countries cervical cancer has changed little in incidence, except for those countries that have achieved the demographic (epidemiological) transition with increasing affluence from industrialization. In such countries, there has been a fall in incidence of cervical cancer. However the present study has conducted to assess the early diagnosis of cervical cancer and to find out associated risk factors of cervical cancer. A cross-sectional study was a descriptive study in which exposure the present status is measured simultaneously in a given population. The study unit was conducted at Bangabandhu Sheikh Mujib Medical University (BSMMU) and National Institute of Cancer Research & Hospital (NICRH). 300 respondents were selected through purposive sampling from BSMMU, NICRH. A total of 150 women's was interviewed in each study area. Data was collected from primary Sources. The primary data were collected purposively selected respondent for VIA of different hospital. The secondary data collection method has focused on extensive literature review covering relevant national-level studies and reports. Websites of relevant organizations were analytically surfed through. Besides, newspapers, conference proceedings, working papers, Journals, Articles, Term paper, Research Report, and other sources of information were also explored to the optimum level. Questionnaires were used as a form of collecting data. Data were collected through appropriate questionnaire which was prepared for the study. Closed-ended questions were used in the questionnaire. Data were collected through interview method, i.e. Interviewers collect data from the respondents through face to face interview. After entire collecting data, it was computerized using suitable data entry software, such a SPSS; MS. Excel etc Data was analyzed by using SPSS software. Statistical analysis was performed by using SPSS (Statistical Package for Social Sciences) for windows version 16. Table and graphs and statistical analysis were done by adequate tables and graphs. After the data had been collected, analyzed and interpreted, the final report was then written. The results showed trauma to the cervix as being a risk factor for infection which may result in cervical cancer. This finding points to the importance of safe delivery facilities and establishing guidelines and standard operation procedures for performing assisted vaginal delivery and episiotomy in obstetrics practice. Also, abandonment of female genital mutilation can have a great effect in decreasing the incidence of cervical cancer. Training of birth attendants on safe delivery services and increasing community awareness about female genital mutilation risks can play a great role in talking of the problem. Women with cervical cancer, who are elderly, not covered by health insurance, are of ethnicity and live in rural area, are more likely to be diagnosed at advanced stages of cervical cancer in Bangladesh. The results of this study showed that VIA has high sensitivity and lower specificity compared to Pap smear. Combination of VIA/Pap increased sensitivity and specificity of detection of cervical cancer. The findings of study indicate that VIA is useful for screening of cervical cancer in primary health care setting and it is also a feasible and acceptable screening method in the primary health care setting in Bangladesh. The study findings showed that obstetricians /gynecologists have more adequate knowledge on cervical cancer screening methods than general practitioners. More efforts are needed to develop and to adapt new strategies for promotion and improvement of cancer prevention methods in continuous medical education for general practitioners and in medical education curriculum at medical schools in Bangladesh. Cervical cancer screening programme should be included in primary health care services. VIA should be implemented as primary screening test for cervical cancer in Bangladesh. Community awareness should be increased about health consequences of female genital mutilation.

Key words: *Cervical cancer, Infection, Risk factor, Community, Awareness*

INTRODUCTION

Worldwide, cervical cancer comprises approximately 12% of all cancers in women. It is the second most common cancer in women worldwide, but the commonest in developing countries. Annual global estimates around the year 2000 are for 470 600 new cases and 233 400 deaths from cervical cancer annually. Eighty percent of these cases occur in developing countries. In most countries in North America and Western Europe, the incidence of cervical cancer has been falling, although recently at a much slower rate. In many developing countries, however, cancer of the cervix has changed little in incidence, except for those countries that have achieved the demographic (epidemiological) transition with increasing affluence from industrialization. In such countries, there has been a fall in incidence of cancer of the cervix, and a rise in incidence in cancer of the breast, similar to changes that occurred in North America and Western Europe in the early part of the last century. Many of the countries that have been through this transition are in the "middle-income" category. It has been estimated that the number of prevalent cervical cancer cases diagnosed in the previous five years was around 1 401 400 in the year 2000 compared with 3 860 300 for breast cancer, with 1 064 000 and 1 522 000 of these occurring in developing countries, respectively. Thus although breast cancer is increasing in importance in many developing countries, cervical cancer remains a major cause of morbidity and mortality.

Data are available internationally on trends and incidence of cancer of the cervix and, with some notable exceptions, tend to show declines. This is true for nearly all registries in the Americas, Asia, Australasia and Hawaii, and Europe. The reductions have been quite striking in Hawaii, Denmark, Finland, Sweden, Japan, and more recently in the Maoris of New Zealand but also in Cali, Colombia and Puerto Rico. In Cali, Colombia, screening programmes have been operational, and a case-control study confirmed that screened women had a reduced risk of disease. However, since overall coverage does not sufficiently explain all of this incidence reduction, much of it may reflect epidemiological transition. Reductions have been quite small recently in many countries with low incidence in the early 1960's including Canada, many parts of the United States, and the Caucasian population of New Zealand. In Finland there has been some recent increase in incidence, but not in mortality, in women aged 25–54.

Overview of Cervical Cancer

Cervical cancer is a cancer arising from the cervix. It is due to the abnormal growth of cells that have the ability to invade or spread to other parts of the body. Early on, typically no symptoms are seen. Later symptoms may include abnormal vaginal bleeding, pelvic pain, or pain during sexual intercourse. While bleeding after sex may not be serious, it may also indicate the presence of cervical cancer.

Human papillomavirus (HPV) infection appears to be involved in the development of more than 90% of cases; most people who have had HPV infections, however, do not develop cervical cancer. Other risk factors include smoking, a weak immune system, birth control pills, starting sex at a young age, and having many sexual partners, but these are less important. Cervical cancer typically develops from precancerous changes over 10 to 20 years. About 90% of cervical cancer cases are squamous cell carcinomas, 10% are adenocarcinoma, and a small number are other types. Diagnosis is typically by cervical screening followed by a biopsy. Medical imaging is then done to determine whether or not the cancer has spread. HPV vaccines protect against between two and seven high-risk strains of this family of viruses and may prevent up to 90% of cervical cancers. As a risk of cancer still exists, guidelines recommend continuing regular Pap smears. Other methods of prevention include: having few or no sexual partners and the use of condoms. Cervical cancer screening using the Pap smear or acetic acid can identify precancerous changes which when treated can prevent the development of cancer. Treatment of cervical cancer may consist of some combination of surgery, chemotherapy, and radiotherapy. Five year survival rates in the United States are 68%. Outcomes, however, depend very much on how early the cancer is detected. Worldwide, cervical cancer is both the fourth-most common cause of 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 countries. In low-income countries, it is the most common cause of cancer death. In developed countries, the widespread use of cervical screening programs has dramatically reduced rates of cervical cancer. In medical research, the most famous cell line known as HeLa was developed from cervical cancer cells of a woman named Henrietta Lacks.

Cancer

Cancer is a class of diseases characterized by out-of-control cell growth. There are over 100 different types of cancer, and each is classified by the type of cell that is initially affected. Cancer harms the body when altered cells divide uncontrollably to form lumps or masses of tissue called tumors (except in the case of leukemia where cancer prohibits normal blood function by abnormal cell division in the blood stream). Tumors can grow and interfere with the digestive, nervous, and circulatory systems and they can release hormones that alter body function. Tumors that stay in one spot and demonstrate limited growth are generally considered to be benign.
More dangerous, or malignant, tumors form when two things occur:
1. a cancerous cell manages to move throughout the body using the blood or lymphatic systems, destroying healthy tissue in a process called invasion
2. that cell manages to divide and grow, making new blood vessels to feed itself in a process called angiogenesis.

When a tumor successfully spreads to other parts of the body and grows, invading and destroying other healthy tissues, it is said to have metastasized. This process itself is called metastasis, and the result is a serious condition that is very difficult to treat.
According to the American Cancer Society, Cancer is the second most common cause of death in the US and accounts for nearly 1 of every 4 deaths. The World Health Organization estimates that, worldwide, there were 14 million new cancer cases and 8.2 million cancer-related deaths in 2012 (their most recent data).

Classification of Cancer

There are five broad groups that are used to classify cancer.
1. Carcinomas are characterized by cells that cover internal and external parts of the body such as lung, breast, and colon cancer.
2. Sarcomas are characterized by cells that are located in bone, cartilage, fat, connective tissue, muscle, and other supportive tissues.
3. Lymphomas are cancers that begin in the lymph nodes and immune system tissues.
4. Leukemias are cancers that begin in the bone marrow and often accumulate in the bloodstream.

5.Adenomas are cancers that arise in the thyroid, the pituitary gland, the adrenal gland, and other glandular tissues.

Cancers are often referred to by terms that contain a prefix related to the cell type in which the cancer originated and a suffix such as -sarcoma, -carcinoma, or just -oma. Common prefixes include:

- Adeno- = gland
- Chondro- = cartilage
- Erythro- = red blood cell
- Hemangio- = blood vessels
- Hepato- = liver
- Lipo- = fat
- Lympho- = white blood cell
- Melano- = pigment cell
- Myelo- = bone marrow
- Myo- = muscle
- Osteo- = bone
- Uro- = bladder
- Retino- = eye
- Neuro- = brain

Cervical Cancer

Cervical cancer is cancer that starts in the cervix, the narrow opening into the uterus from the vagina. The normal "ectocervix" (the portion of the uterus extending into the vagina) is a healthy pink color and is covered with flat, thin cells called squamous cells. The "endocervix" or cervical canal is made up of another kind of cell called columnar cells. The area where these cells meet is called the "transformation zone" (T-zone) and is the most likely location for abnormal or precancerous cells to develop.
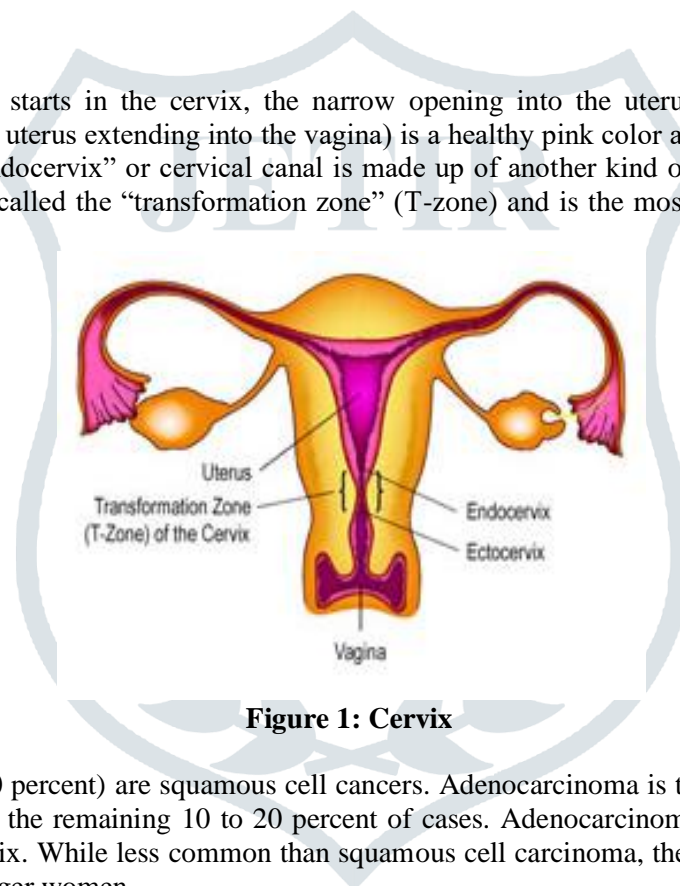

Figure 1: Cervix

Most cervical cancers (80 to 90 percent) are squamous cell cancers. Adenocarcinoma is the second most common type of cervical cancer, accounting for the remaining 10 to 20 percent of cases. Adenocarcinoma develops from the glands that produce mucus in the endocervix. While less common than squamous cell carcinoma, the incidence of adenocarcinoma is on the rise, particularly in younger women.

More than 12,000 women in the United States will be diagnosed with cervical cancer each year, and more than 4,000 of women will die. Cervical cancer is the second most common type of cancer for women worldwide, but because it develops over time, it is also one of the most preventable types of cancer. Deaths from cervical cancer in the United States continue to decline by approximately 2 percent a year. This decline is primarily due to the widespread use of the Pap test to detect cervical abnormalities and allow for early treatment. Most women who have abnormal cervical cell changes that progress to cervical cancer have never had a Pap test or have not had one in the previous three to five years.

Cancer of the cervix tends to occur during midlife. Half of the women diagnosed with the disease are between 35 and 55 years of age. It rarely affects women under age 20, and approximately 20 percent of diagnoses are made in women older than 65. For this reason, it is important for women to continue cervical cancer screening until at least the age of 70.

Signs and symptoms of Cervical Cancer

Precancerous cervical cell changes and early cancers of the cervix generally do not cause symptoms. For this reason, regular screening through Pap and HPV tests can help catch precancerous cell changes early and prevent the development of cervical cancer.

Possible symptoms of more advanced disease may include abnormal or irregular vaginal bleeding, pain during sex, or vaginal discharge. Notify your healthcare provider if you experience:

- Abnormal bleeding, such as
  o Bleeding between regular menstrual periods
  o Bleeding after sexual intercourse
  o Bleeding after douching
  o Bleeding after a pelvic exam
  o Bleeding after menopause
- Pelvic pain not related to your menstrual cycle
- Heavy or unusual discharge that may be watery, thick, and possibly have a foul odor
- Increased urinary frequency
- Pain during urination

The early stages of cervical cancer may be completely free of symptoms. Vaginal bleeding, contact bleeding (one most common form being bleeding after sexual intercourse), or (rarely) a vaginal mass may indicate the presence of malignancy. Also, moderate pain during sexual intercourse and vaginal discharge are symptoms of cervical cancer. In advanced disease, metastases may be present in the abdomen, lungs, or elsewhere.

Symptoms of advanced cervical cancer may include: loss of appetite, weight loss, fatigue, pelvic pain, back pain, leg pain, swollen legs, heavy vaginal bleeding, bone fractures, and/or (rarely) leakage of urine or feces from the vagina. Bleeding after douching or after a pelvic exam is a common symptom of cervical cancer.

These symptoms could also be signs of other health problems, not related to cervical cancer. If you experience any of the symptoms above, talk to a healthcare provider.

SIGNIFICANCE OF THE STUDY
1.Cancer is growing problem affecting globally. In Bangladesh there is no population based cancer registry, so there is a lack of accurate data on the incidence of mortality from cancer. National Institute of Cancer Research & Hospital (NICRH) is officially started their activity of Hospital Based Cancer Registry (HBCR) on January 2005.
2.Cervical cancer is identified in the early stage it can be cured or the early detection will reduce the morbidity and mortality. Cancer is a disease, which if detected early can be cured: this is now a scientific truth. Because of fear and lack of knowledge, cancer is mostly not detected at the early stage. There are distinctive advantages of early diagnosis. Cancer is best treatable and curable when the tumor is small. Early detection has an added advantages reducing the magnitude of surgery with better functional.
3.This type of study can help women to understand about cervical cancer. It may helpful for further planning on research on cervical cancer.

OBJECTIVES OF THE STUDY
Objectives are specifically stated aims that would be achieved by conducting the research empirically. Objectives come out of the stated problem in a systematic order and form. Generally, these are some short independent sentence indicating a plan of step by step advancement towards collection of information. The objectives are stated bellow:

General Objectives
The objective of this study was to assess the feasibility of cervical cancer screening and determine the risk factors of cervical cancer to help to initiate cervical cancer prevention in Dhaka city.

Specific Objectives
1. To assess the early diagnosis of cervical cancer.
2. To find out associated risk factors of cervical cancer.

METHODOLOGY OF THE STUDY
In a broader sense of the term, methodology considers all techniques, strategies, approaches to be applied at every phases of conducting the research, especially, in collecting, processing and analyzing information. Methodological consideration also involves the reliability and validity of techniques and findings. Documentary analysis has used for the study. Data are facts, figures and other relevant materials, past and present, serving as the bases for study and analysis.

Study Design
It was a descriptive study. A cross-sectional study was a descriptive study in which exposure the present status is measured simultaneously in a given population.

Study population/ subject
All women, those who are attended in the outdoor hospital for Visual inspection with acetic acid (VIA) were purposively allocated enrolled in the study. Out of 300 women's were equal distribute in each selected area.

Study Area

The study was conducted in different area. The study units was conducted in different hospital in urban Dhaka city such as-

1. Bangabandhu Sheikh Mujib Medical University (BSMMU),
2. National Institute of Cancer Research & Hospital (NICRH).

The study duration was two year.

Variables:

1. Age at marriage,
2. Number of parity,
3. Mode of delivery,
4. Injury or trauma to cervix.

Sampling Method and Technique

300 respondents were selected through purposive sampling from BSMMU, NICRH. A total of 150 women's was interviewed in each study area.

Data collection Procedure

Data were collected from primary Sources. The primary data were collected purposively selected respondent for VIA of different hospital. The secondary data collection method has focused on extensive literature review covering relevant national-level studies and reports. Websites of relevant organizations were analytically surfed through. Besides, newspapers, conference proceedings, working papers, Journals, Articles, Term paper, Research Report, and other sources of information were also explored to the optimum level.

All the data obtained from secondary sources were analyzed and eventually a conclusion is drawn resulting in incorporating our ideas and experiences.

Data collection tools

Questionnaires were used as a form of collecting data. Data were collected through appropriate questionnaire which was prepared for the study. Closed-ended questions were used in the questionnaire. A questionnaire in English was developed and finalized through pre-test and used for data collection.

What the respondents were expected to come up with were responses which would help the researcher to raise certain elements of crime that the researcher may not be aware of.

The questionnaire was distributed in good time and the interviewees were given questionnaires in their hands and asked to complete them in the presence of the researcher or his assistants. This was done so as to get as high a response rate and return as possible.

Development of Questionnaire

Before preparation of questionnaire, secondary have been reviewed and drafted the initiation questionnaire. Later on after field test it has been finalized.

Methods of data collection

Data were collected through interview method, i.e. Interviewers collect data from the respondents through face to face interview.

Quality control method

Data quality controlled was through tools verification (compare to standard tools) questionnaire, check editing, data entry, entry and minimizing response errors through prove question. Here, we use the data collected from dependable sources. Supervisor was checked our filed work for quality.

Data Analysis

The data analysis stage was really an attempt to answer the relevant research questions by examining and assessing the collected information to identify patterns and meanings. The gathered data was interpreted and analyzed. After entire collecting data, it was computerized using suitable data entry software, such a SPSS; MS. Excel etc Data was analyzed by using SPSS software. Statistical analysis was performed by using SPSS (Statistical Package for Social Sciences) for windows version 16. Table and graphs and statistical analysis were done by adequate tables and graphs. After the data had been collected, analyzed and interpreted, the final report was then written.

RESULT AND DISCUSSION

Table 1. Distribution of Respondents Age

Respondents Age	BSMMU n = 150	NIRCH n = 150
30-35 years	18	15
36-40 years	30	33
41-45 years	55	48
45 + years	47	54
Total	150	150

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

Figure 1. Distribution of Respondent's Level of Education
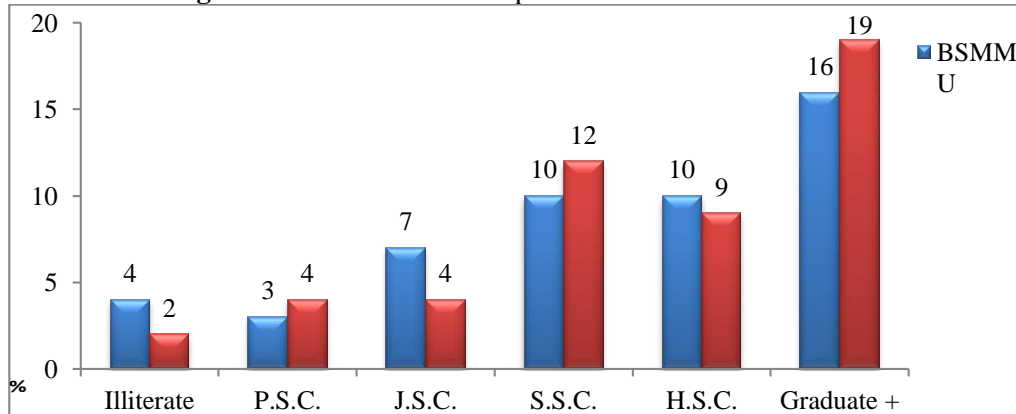
- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

Table 2. Distribution of respondent's marital status

Respondents Marital Status	BSMMU n = 150	NIRCH n = 150
Un-married	8	10
Married	115	119
Divorced	17	12
Widow	11	9
Total	150	150

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
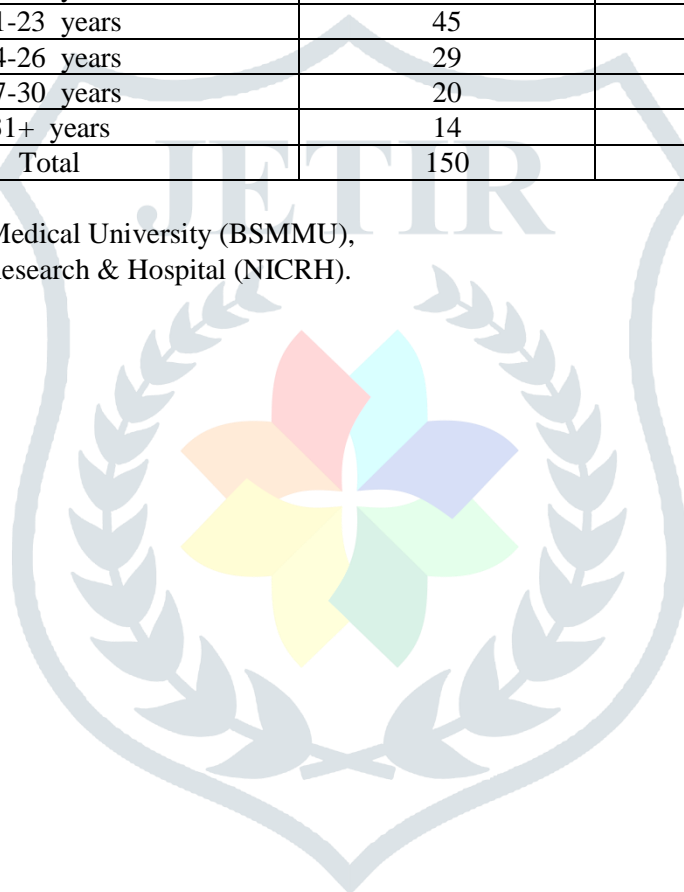- National Institute of Cancer Research & Hospital (NICRH).

Table 3. Distribution the number of children of married respondent

Children of Respondents	BSMMU n = 150	NIRCH n = 150
1.No Child	7	5
2.1-2 person	38	49
3.3-4 person	87	74
4.5-6 person	6	9
5.More than 6 person	4	3
Total	142	140

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

**Table 4.** Distribution of respondent's working status

Respondents Working Status	BSMMU n = 150	NIRCH n = 150
Housewife	110	103
Unemployed	11	9
Employed	21	27
Others	8	11
Total	150	150

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

Table 5. Distribution of the age at marriage or first sexual act of respondent

Age at marriage or first sexual act of respondent	BSMMU n = 150	NIRCH n = 150
15-17 years	19	15
18-20 years	23	33
21-23 years	45	38
24-26 years	29	29
27-30 years	20	22
31+ years	14	13
Total	150	150

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

Figure 2. Distribution the number of pregnancies/parity of respondents
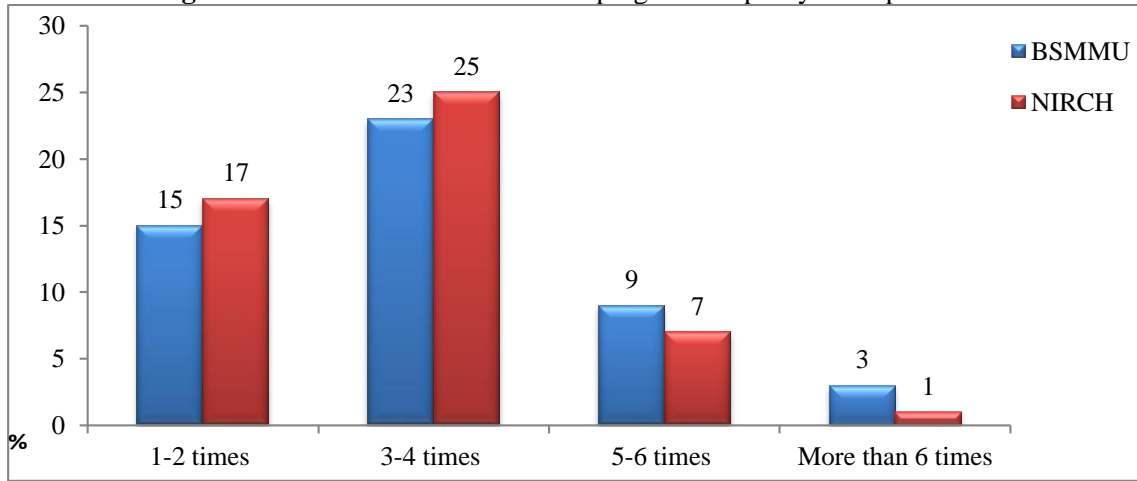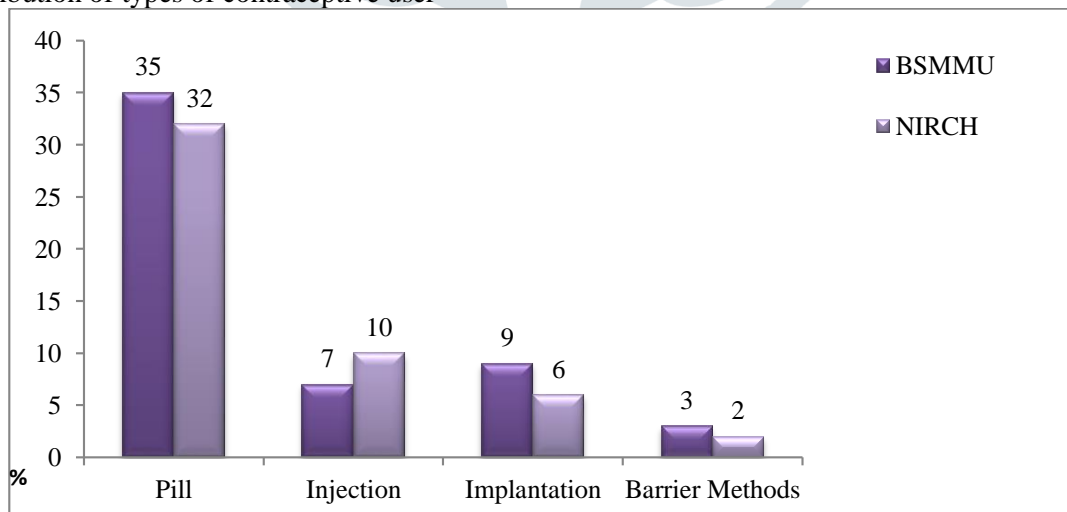

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

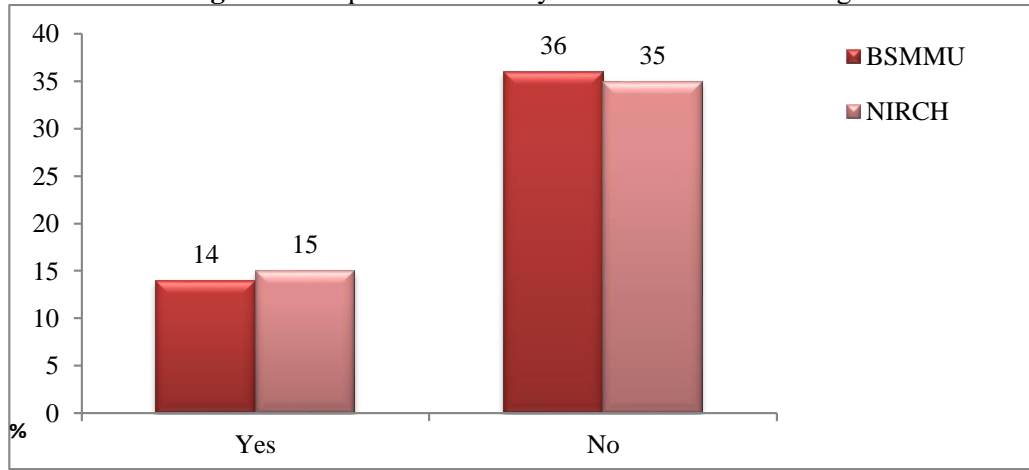**Figure 3.** Percentage of contraceptive user
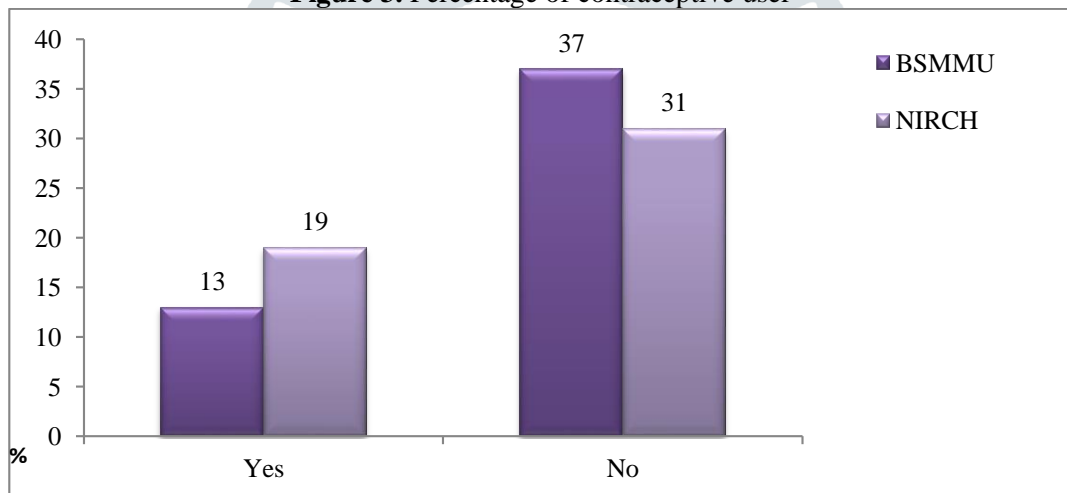
- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

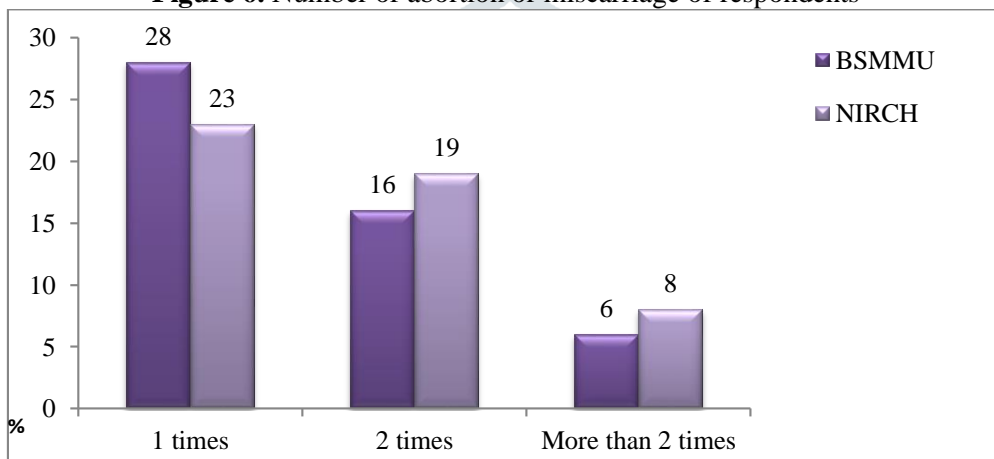**Figure 4.** Distribution of types of contraceptive user

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

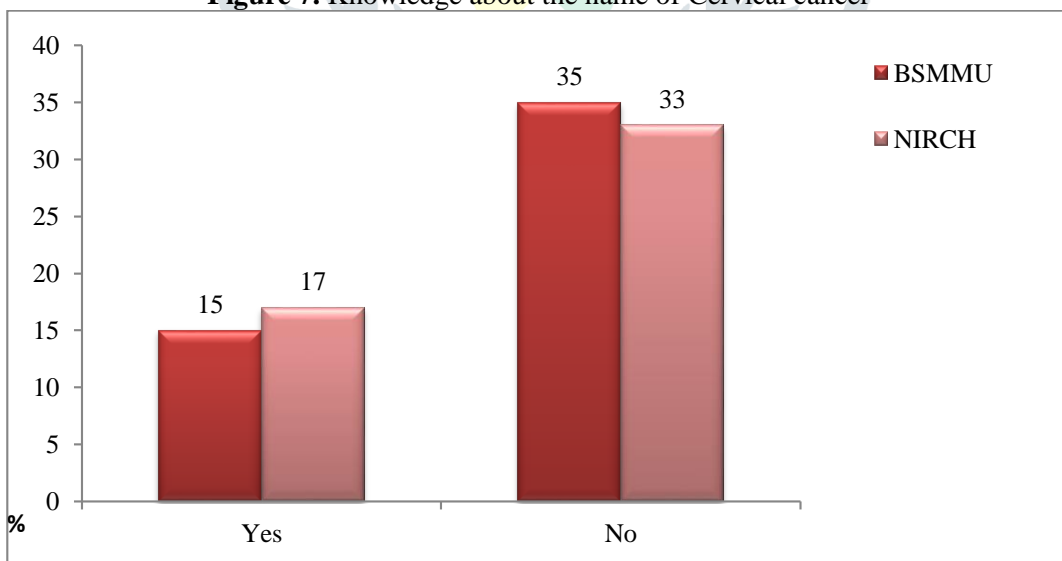**Figure 5.** Respondents' history of abortion or miscarriage

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

Figure 6. Number of abortion or miscarriage of respondents

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

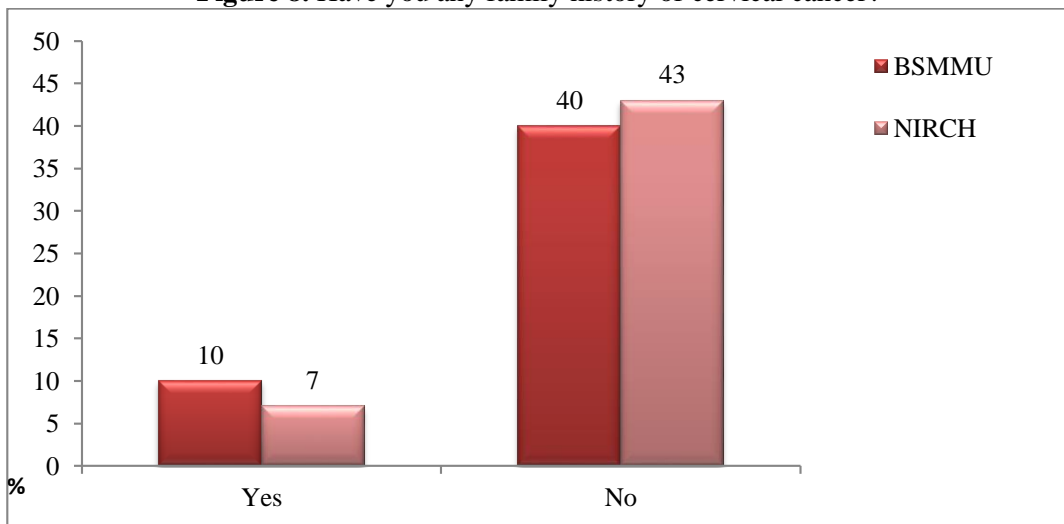**Figure 7.** Knowledge about the name of Cervical cancer

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

Table 6. Knowledge about the greatest risk of cervical cancer occurs at what age?

| Age at marriage or first sexual act of respondent	BSMMU n = 150	NIRCH n = 150
1.30-35 years	2	1
2.36-40 years	2	1
3.41-45 years	9	12
4.46-50 years	1	1
5.>60 years	1	2
6.Don't know	35	33
Total	150	150

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

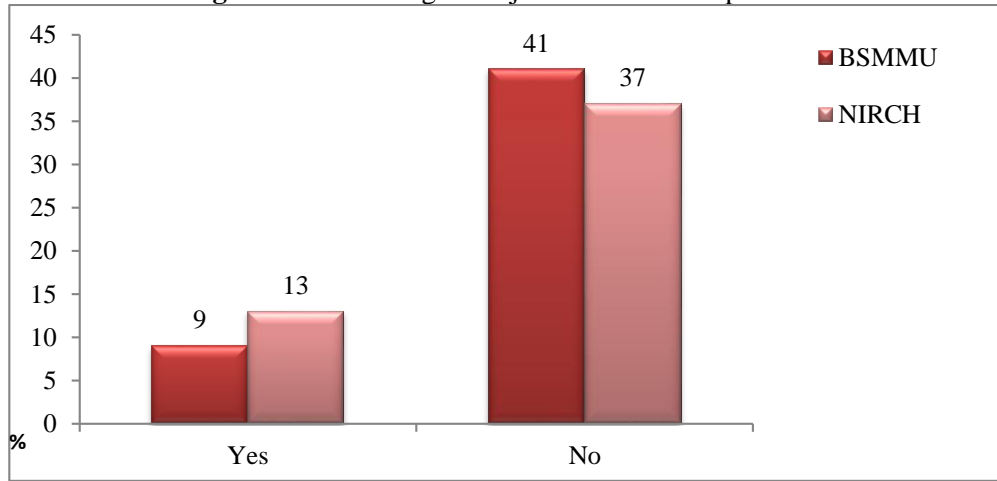**Figure 8.** Have you any family history of cervical cancer?

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

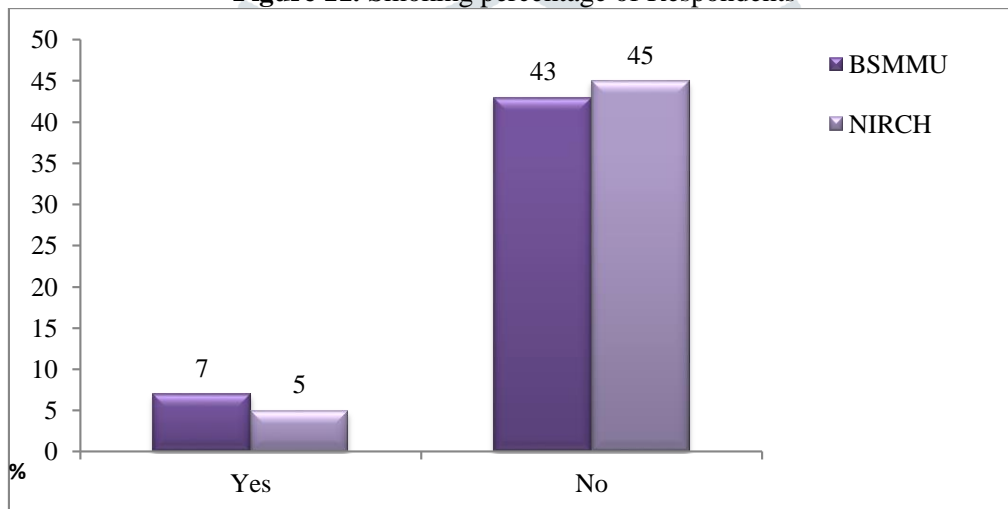**Figure 9.** Distribution of screening for cervical cancer of respondents
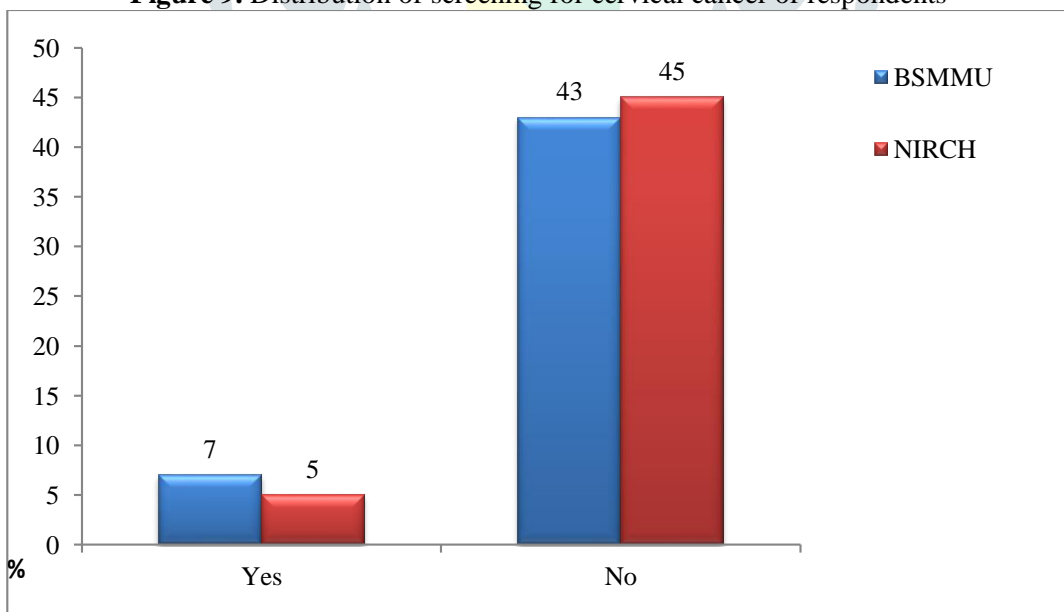
- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

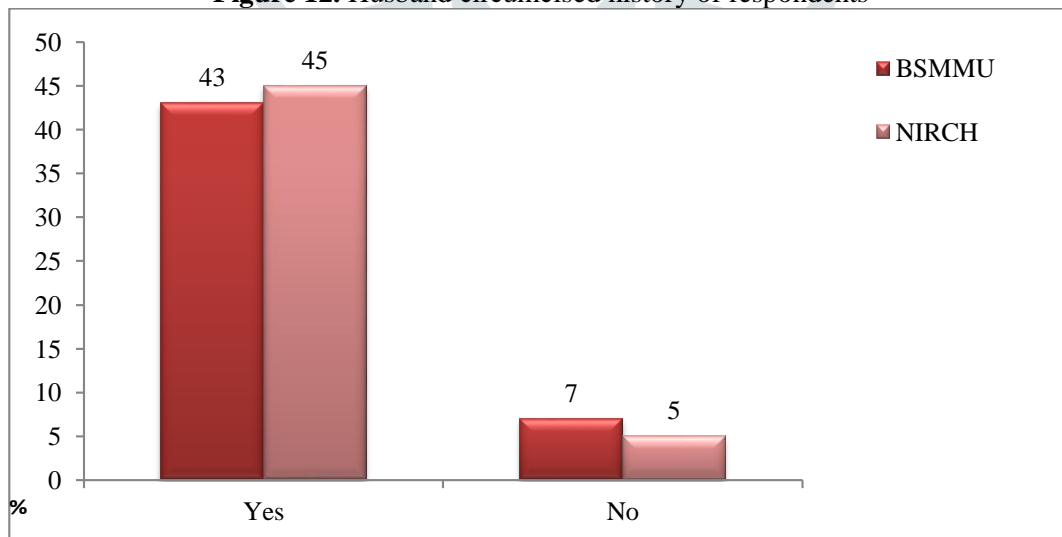**Figure 10.** Percentage of injured cervix of respondents

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

Figure 11. Smoking percentage of Respondents

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

Figure 12. Husband circumcised history of respondents

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

Table 7. Mode of delivery of respondents

| Respondents mode of delivery	BSMMU n = 150	NIRCH n = 150
Normal vaginal delivery	135	138
Assisted vaginal delivery	15	12

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

Table 8. Suffering different problem of respondent

| Suffering different problem of respondent	BSMMU n = 150	NIRCH n = 150
Urogenital tract infection	25	28
History of STIs (STDS)	15	19
Excessive vaginal discharge	26	20
Itching on external anogenitalia	21	17
Ulcer on external anogenitalia	13	11
Lower abdominal pain	5	7
Lower backache	9	7
Pain during sexual intercourse	21	17
Bleeding after sexual intercourse	11	10
Intermenstrual bleeding	25	18

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

Figure 13. History of episiotomy of respondents
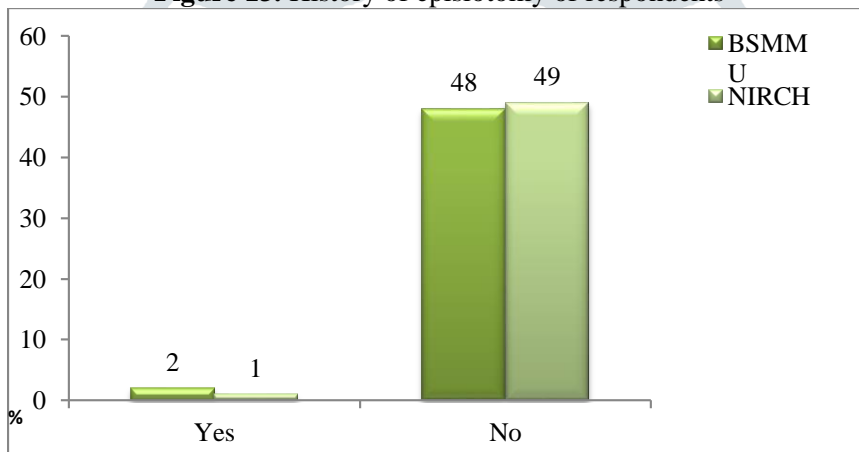
- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

Figure 14. Knowledge about the name of VIA test
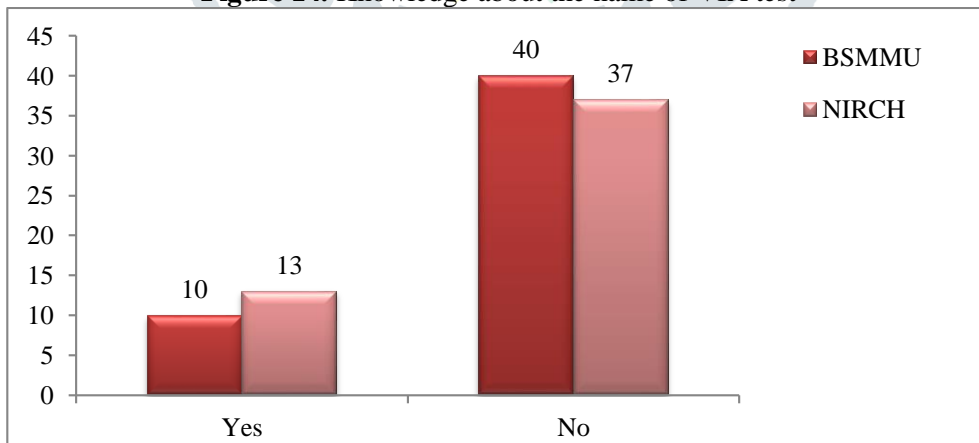
- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

Table 9. Knowing sources area of about VIA test of respondents

Age at marriage or first sexual act of respondent	BSMMU n = 150	NIRCH n = 150
1.Health worker	3	5
2.Doctor	30	33
3.Nurse	2	1
4.Friend	3	0
5.Television	1	2
6.Relatives	3	2
7.Others	8	7

- Bangabandhu Sheikh Mujib Medical University (BSMMU),
- National Institute of Cancer Research & Hospital (NICRH).

DISCUSSION

In this study about cervical cancer risk factors, feasibility and acceptability of VIA screening method in Bangladesh, findings showed that women, who have uterine cervix laceration, assisted vaginal delivery, female genital mutilation, or episiotomy, are at an increased risk of being positive with VIA test. Women with cervical cancer who are elderly, not covered by health insurance, of African ethnicity, and living in a rural area are more likely to be diagnosed at an advanced stage of cervical cancer in Sudan. Use of VIA and Pap smear screening tests identified 12.7% positive women, VIA significantly detected more positive women than Pap smear (7.6% versus 5.1%; p=0.004). VIA has higher sensitivity and lower specificity compared to Pap smear. Also VIA was acceptable to majority of screened women and surveyed physicians have adequate knowledge on cervical cancer and screening methods.

The overall findings indicate that VIA is useful for screening of cervical cancer in primary health care settings in the study area; however, positive results need to be confirmed by colposcopy and biopsy. It also showed that VIA is a feasible and acceptable cervical cancer screening method in a primary health care setting in the Sudanese context.

CONCLUSION

The study showed that women, who had trauma to their cervix, such as uterine cervix laceration, assisted vaginal delivery, female genital mutilation, or episiotomy, are at an increased risk being screened positive with VIA. The results showed trauma to the cervix as being a risk factor for infection which may result in cervical cancer. This finding points to the importance of safe delivery facilities and establishing guidelines and standard operation procedures for performing assisted vaginal delivery and episiotomy in obstetrics practice. Also, abandonment of female genital mutilation can have a great effect in decreasing the incidence of cervical cancer. Training of birth attendants on safe delivery services and increasing community awareness about female genital mutilation risks can play a great role in talking of the problem.

Women with cervical cancer, who are elderly, not covered by health insurance, are of ethnicity and live in rural area, are more likely to be diagnosed at advanced stages of cervical cancer in Bangladesh. These women should be targeted by cervical cancer screening, health education programme and health insurance coverage. The results of this study showed that VIA has high sensitivity and lower specificity compared to Pap smear. Combination of VIA/Pap increased sensitivity and specificity of detection of cervical cancer. The findings of study indicate that VIA is useful for screening of cervical cancer in primary health care setting and it is also a feasible and acceptable screening method in the primary health care setting in Bangladesh. The study findings showed that obstetricians /gynecologists have more adequate knowledge on cervical cancer screening methods than general practitioners. More efforts are needed to develop and to adapt new strategies for promotion and improvement of cancer prevention methods in continuous medical education for general practitioners and in medical education curriculum at medical schools in Bangladesh.

RECOMMENDATIONS

Based on the study findings, the following recommendations can be used to initiate and establish preventive services for cervical cancer in Bangladesh.

1. Development of population-based cervical cancer screening programme.
2. Integration of cervical cancer screening programme in primary health care services.
3. Implement VIA as primary screening test for cervical cancer in Bangladesh.
4. Benefit from physicians' knowledge and practice about cervical cancer in the development of cervical cancer preventive services in urban city.
5. Increase community awareness about health consequences of female genital mutilation.
6. Endorsement of strict legislation for prohibition of female circumcision practice.
7. Increase training of birth attendants on safe delivery.
8. Increase health insurance coverage for poor population in rural areas.
9. Development of research agenda on the determinants of cervical cancer and interventional methods.
10. Case-control design is definitely needed to address risk factors of cervical cancer, specifically female genital mutilation, episiotomy and assisted delivery.

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