

# Knowledge on Cervical Cancer among Reproductive Women of Katunje, Bhaktapur Nepal

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## ABSTRACT

**Background:** Cancer comprises a wide range of diseases originating from abnormal cell growth in various organs or tissues within the body. Among these, cervical cancer ranked fourth globally in terms of both incidence (6.6%) and mortality (7.5%) in 2018.

**Methodology:** This study utilized a descriptive cross-sectional research design and involved 152 respondents. Non-probability purposive sampling technique was employed for participant selection, and data were collected using a structured questionnaire. Statistical Package for Social Sciences was used to analyse the data based on the study's objectives, employing descriptive statistics.

**Findings:** The findings revealed that among the 152 participants, more than half (53.9%) had inadequate knowledge, while 46.1% demonstrated adequate knowledge about cervical cancer. The study also identified significant associations between knowledge levels and factors such as age, ethnicity, occupation, and education.

**Conclusion:** Overall, the study demonstrated that among the 152 respondents, more than half lacked sufficient knowledge about cervical cancer, whereas less than half possessed adequate knowledge on the subject.

**Keywords:** Knowledge, cervical cancer, reproductive women.

## INTRODUCTION

Among cancers affecting reproductive organs like breast cancer, ovarian cancer,

and uterine cancer, Cervical cancer stands out as one of the most prevalent among women, with 80% of cases occurring in developing countries. Fortunately, effective screening programs can prevent Cervical cancer. Cancer is an umbrella term for a wide range of diseases that can occur in any part of the body. It is also known as malignant tumours and neoplasms. A key characteristic of cancer is the rapid growth of abnormal cells that extend beyond their normal boundaries, leading to the invasion of nearby tissues and the spread to other organs, a process called metastasizing. Metastases are a significant cause of cancer-related deaths (WHO, 2018).

Cancer is a diverse group of diseases originating from abnormal cell growth, which can occur in any organ or tissue. In the case of cervical cancer, it starts when healthy cells on the cervix's surface change or become infected with human papillomavirus (HPV), leading to uncontrolled growth and the formation of a tumour (WHO, 2021).

In 2018, the global cancer burden reached 18.1 million new cases and 96 million deaths. Approximately one in five men and one in six women worldwide develop cancer in their lifetime, and one in eight men and one in eleven women succumb to the disease. The 5-year prevalence, which represents the number of people alive within five years of a cancer diagnosis, was

estimated to be 43.8 million. Asia accounted for nearly half of the new cancer cases and more than half of the cancer-related deaths in 2018, mainly due to its substantial population. Globally, cervical cancer ranked fourth among the most common cancers in women, with around 570,000 women diagnosed and approximately 311,000 losing their lives to the disease (World Health Organization, 2018). Cervical cancer, also known as carcinoma of the cervix, can be detected at early stages. Early detection significantly improves survival rates and enhances the quality of life for women and their families (Sharma, Poudel, Gautam, 2017). In 2018, Cervical cancer ranked fourth globally for both incidence (6.6%) and mortality (7.5%). Women of reproductive age, aged 15-49 years, are affected by this disease. The South-East Asia Region alone recorded approximately 175,000 new cases and 94,000 deaths in 2012, with a 5-year prevalence of 465,000 cases (GLOBOCAN). Cervical cancer poses a significant burden in Asia, with 315,346 new cases and 168,411 deaths, making it the leading cause of female mortality in developing countries. China alone accounted for 106,430 diagnosed cases. Alarmingly, younger women are now experiencing an increased burden of the disease. India contributes to one-third of Asia's cervical cancer cases, with 96,922 new cases and 60,978 deaths reported in 2018. (Source: National screening programs for cervical cancer in Asian Countries). Cervical cancer is the most common cancer in women in many poorer countries, including Nepal. In Nepal, it is slightly more prevalent than breast cancer and accounts for almost one-third of all female cancer cases, with over 2,000 new cases reported annually (an incidence rate of over 18 per 100,000 per year). The country has a population of 10.16 million women aged 15 years and older at risk of developing cervical cancer. It ranks as the leading cause of female cancer in Nepal and is the most common cancer in women aged 15 to 44 years. There are 2,942 new cervical cancer

cases and 1,928 deaths each year, with a crude incidence rate of 19.3 per 100,000. The prevalence of HPV 16 and HPV 18 with cervical cancer is 80%. Factors contributing to cervical cancer include smoking prevalence (12.9% among women), oral contraceptive use (4.7% among women), and HIV prevalence (0.2% among women aged 15-49 years). Cervical screening practices show that 2.8% of women aged 25 to 64 are screened every three years, with the recommended screening age between 30 to 60 years and screening intervals of five years (HPV Information Centre, 2018). Cervical cancer has the highest incidence and mortality rates in sub-Saharan Africa, Latin America, and South Asia. In Nepal, it is the most prevalent cancer among women, with an age-standardized incidence rate of 19 and a mortality rate of 12 (per 100,000 per annum). Compared to more developed countries, Nepal's cervical cancer incidence rate is two times higher, and the mortality rate is almost four times higher. Despite the National Guideline for Cervical Cancer Screening and Prevention program's objective to screen at least 50% of women aged 30 to 60 years and reduce the burden by 10% within 5 years, approximately 95% of women still haven't undergone cervical cancer screening. Most unscreened women are illiterate and living in rural regions. A study conducted in mid-western rural Nepal in 2018 found that over 86.4% of women had never undergone any cervical cancer screening test, with common barriers being lack of symptoms awareness (50.4%), lack of awareness (46.1%), embarrassment (24.3%), and carelessness (23.6%). (Thapa et al., 2018).

Cervical cancer is the most frequent cancer among women in Nepal and the second most frequent among women aged 15-44 years. Approximately 2,244 women are diagnosed with cervical cancer and 1,493 die from the disease each year. In the Kathmandu Valley, it ranks as the third most common cancer among women, with an age-adjusted rate of 8.7 per 100,000

population. (Epidemiological pattern of cancer 2018). The study main aim is to assess the level of knowledge on cervical cancer among reproductive women of Katunje-5, Bhaktapur.

## **LITERATURE REVIEW**

Pieters et al. (2021) conducted a cross-sectional study in Lima's metropolitan area to explore the awareness, attitudes, and behaviours of Peruvian women regarding cervical cancer screening. The study aimed to identify factors contributing to the knowledge-screening gap. Results indicated that participants who had undergone screening in the past exhibited higher knowledge levels about cervical cancer signs, causes, and prevention (mean score = 28.08, S.D. = 4.18) compared to those who had never been screened (mean score = 21.25, S.D. = 6.35)<sup>1</sup>. A case-control study in Namibia's Osyan region (414 women aged 5 to 49) found variables influencing cervical cancer screening: Lack of transportation in cases (24.15%) and lack of signs/symptoms in controls (17.39%). Cases also was afraid of pain (67.15%), lack of knowledge (24.15%), and cultural practices (15.94%). The study highlights the need for development-focused investments to promote screening, especially among young women (Kakehonhongo, 2018)<sup>2</sup>. A study in rural Uganda examined cervical cancer screening among 119 women aged 25 to 49. Using focus groups and interviews, the findings revealed positive attitudes but limited understanding of the disease (Ndejjo et al., 2017)<sup>3</sup>. A cross-sectional study in Ondo Town, Ondo State assessed cervical cancer screening awareness and barriers among 235 women aged 15 to 49. 84.4% had never been screened, while 42.9% of those screened used acetic acid. Over half had undergone screening over a year prior. 78.6% chose to get screened after learning about its benefits. Lack of service providers prevented 59.9% from getting screened (Titiloye et al., 2017)<sup>4</sup>. In June 2015, a community-based cross-sectional survey in Hossana town, Southern Ethiopia, assessed

women of childbearing age on their knowledge, attitudes, practices, and risk factors for cervical cancer. Using the systematic random sample technique, 583 individuals were selected, and data were collected through an interviewer-administered, pretested structured questionnaire. The findings revealed that 14% of the respondents (270 individuals) had inadequate general knowledge, and only 9.9% (58 participants) had been screened for cervical cancer prior to the study. The study underscored the importance of raising awareness, promoting understanding, conducting active health research, and accessing cervical cancer information from various sources (Aweke et al., 2017)<sup>5</sup>. A qualitative and quantitative study involving 382 women aged 15 to 65 years was conducted in Vihiga County, Kenya to examine factors affecting cervical cancer screening uptake. Elements such as religion, practice, health-seeking behaviour, education, and awareness were found to influence screening. The study suggests implementing screening programs, encouraging spouse involvement, and ensuring easy accessibility to services (Allan, 2015)<sup>6</sup>. In a qualitative study comparing ethnic minority women to white British women, 54 participants aged 25 to 65 revealed their attitudes toward cervical cancer screenings. Six women were not currently receiving screenings, eight had missed or postponed screenings, one had never been checked, and six attended screenings regularly. The study identified knowledge, emotional barriers (fear, embarrassment, and shame), and the absence of symptoms as key factors influencing their screening practices (Marlow et al., 2015)<sup>7</sup>. A study was conducted with 392,2 female participants, aged 10-74, in Eknina, Southern Ghana, to assess pap smear test knowledge, practice, and barriers. The results revealed that 68.4% were unaware of cervical cancer screening, and 93.6% lacked understanding of risk factors. Additionally, 2.3% believed having multiple sexual partners posed a danger.

Shockingly, 92% had no knowledge of preventing or curing cervical cancer, and 97.7% had never heard of a pap smear test. Only 0.8% of the women underwent pap smear tests (Ebu et al., 2014)<sup>8</sup>. In rural Kiwangwa Village, a study was conducted to comprehend the factors affecting cervical cancer screening. Out of 300 women of reproductive age, 195 missed the screening, while 105 participated. Age significantly influenced screening attendance, with women aged 20 to 29 attending less frequently than other age groups. Moreover, education level, regular health checkups, and radio usage positively influenced the probability of screening. Interestingly, women facing financial difficulties were 72% more likely to attend screenings (Peng et al., 2013)<sup>9</sup>. In this cross-sectional study, 287 female university students from a Malaysian Tertiary Institution in Selangor participated. Only 6% of the women reported having ever undergone a Pap test. The respondents' knowledge about the link between HPV and cervical cancer was the least known at 51.2%, while 77.5% knew the most about the issue of having multiple partners. (AL-Nagger et al., 2010)<sup>10</sup>. In Guangxi, China, a cross-sectional survey was conducted to assess cervical cancer risk factors, HIV-positive women's barriers to screening, and knowledge, attitudes, and beliefs about cervical cancer. The survey included 101 women aged 21-65, and 47 percent had undergone cervical cancer screening. The mean knowledge score for cervical cancer and screening was 5.6 out of 9 (95% CI 5.3-6.0), while the mean score for risk factors was 6.3 out of 10 (95% CI 5.9-6.6) (Zhao et al., 2022)<sup>11</sup>. A qualitative investigation examined obstacles to free cervical cancer screening among rural women in China. Perspectives of women, healthcare providers, and women's husbands were considered. Thematic analysis revealed five main topics: lack of awareness about cervical cancer, fear of the disease, cultural barriers to personal examinations, influence of close relationships on screening choices, and inconvenience. Addressing

these knowledge gaps is crucial in current community health education (Yang et al., 2019)<sup>12</sup>. A cross-sectional, descriptive, interview-based survey in India examined women's knowledge, attitudes, and practices regarding cervical cancer and screening. The study included 7688 women, aged 12-65 years, with an overall knowledge rate of 40.22% about cervical cancer. Adequate knowledge of risk factors, symptoms, and warning signs was observed among women. Cervical cancer screening knowledge, attitude, and practice were found in 20.31%, 43.64%, and 13.22% of women, respectively (Taneja et al., 2021)<sup>13</sup>. In rural India, a cross-sectional survey was conducted among 262 staff nurses to assess their knowledge, attitudes, and behaviours towards cervical cancer screening. The findings revealed that less than half of the respondents were aware that Pap smears can identify precancerous cervix lesions, and only 23.4% knew about the risk factors for human papillomavirus infection. Moreover, only 26.7% demonstrated appropriate understanding based on assessment scores. Shockingly, merely 7% of the nurses had undergone Pap testing themselves, and 85% had never performed a Pap test on a patient. The study concluded that most nursing staff lacked adequate knowledge, and their attitudes and behaviours towards cervical cancer screening were considered unfavourable (Shekhar et al., 2013)<sup>14</sup>. A community-based cross-sectional survey was conducted among 729 women aged 30 to 60 in a semi-urban area of Pokhara Metropolitan City, Nepal. The study aimed to explore their knowledge, attitudes, preventative behaviours, and use of cervical cancer screening. Data was collected through door-to-door visits, and a systematic random sample was taken. Surprisingly, only 10.4% of individuals underwent timely cervical cancer screening. This highlights the need to raise awareness, enhance understanding, promote active research for health information, and encourage accessing information from all sources (Shrestha et al., 2022)<sup>15</sup>. A

descriptive cross-sectional study was conducted among 173 reproductive-aged women (15-49 years) in Budhanilkantha Municipality, Kathmandu, using non-probability purposive sampling. The study aimed to assess awareness of cervical cancer. Structured questionnaires and face-to-face interviews were employed for data collection. The results indicated that 17.9% had high awareness, 71.1% moderate, and 11% low awareness levels. 58% lacked knowledge of cervical cancer causes, and 38.2% identified poor perineal hygiene as a risk factor. Surprisingly, 98.8% were unaware of the appropriate age for cervical cancer vaccination. Only 26.6% knew about screening tests, and 82.7% had never undergone screening. The study revealed associations between awareness levels and marital status, age of marriage, occupation, and family history (Devkota et al., 2020)<sup>16</sup>. In April to May 2021, a descriptive cross-sectional study was conducted in Nuwakot district to assess cervical cancer awareness among reproductive age women. Using a structured questionnaire, 190 respondents were interviewed, with a mean age of  $33.37 \pm 8.39$  (Mean  $\pm$  SD). Surprisingly, only 10% of the respondents correctly understood the meaning of cervical cancer, and 30% were unaware of its cause. Additionally, just 7.4% identified HPV Infection as a risk factor, and only 2.6% knew the appropriate age for HPV vaccination. However, nearly 19% recognized the importance of cervical cancer screening for sexually exposed women (Bajracharya et al., 2021)<sup>17</sup>. In a descriptive cross-sectional study conducted in Changunarayan Municipality, 115 married women aged 30 to 60 participated. Data was collected through face-to-face interviews using a semi-structured interview plan. The study revealed that 52.2% of respondents had inadequate awareness and 47.8% had adequate awareness of cervical cancer. Regarding practice, only 20.9% had undergone a Pap smear test. Interestingly, no correlation was found between awareness levels and age, education,

occupation, age at marriage, or age at their first child's birth. While women showed sufficient awareness of cervical cancer, the use of Pap smear tests remained uncommon, unaffected by the prevalence of cervical cancer (Bharati et al., 2021)<sup>18</sup>. A study using convenience and purpose sampling techniques assessed the viability and acceptability of a service. Participants were divided into three groups: 30 healthy women, 4 women with a history of cervical cancer, and 11 healthcare professionals. The 30 healthy women, aged 25 to 50, living in the districts of Lalitpur, Kathmandu, and Bhaktapur, requested a self-sampling kit through online interaction. The study highlights the urgent need for Nepali women to learn more about HPV screening and access alternative testing options (Shrestha et al., 2021)<sup>19</sup>. A qualitative study was conducted to explore the facilitators and barriers to cervical cancer screening among Nepalese women in Pokhara Metropolitan City. The interviews were recorded, transcribed verbatim, and analysed using a grounded theory approach with open coding. Semi-structured interview guides were utilized. The authors encourage decision-makers and stakeholders to utilize these findings for enhancing public awareness, information accessibility, and improving screening services in Nepal (Andersen et al., 2020)<sup>20</sup>. A descriptive cross-sectional study was conducted among 170 women of reproductive age at Nepal Medical College Teaching Hospital. The study aimed to assess their knowledge and attitudes regarding cervical cancer screening. Using purposive sampling, face-to-face interviews were conducted with a semi-structured interview schedule. Results showed that 88.8% had heard of cervical cancer, and 70% were aware of cervical cancer screening. However, only 11.3% demonstrated sufficient knowledge about screening. Encouragingly, 46.6% of the women had a favourable attitude toward cervical cancer screening (Baral et al., 2020)<sup>21</sup>. In a descriptive cross-sectional study conducted at Little Angels College of

Management in Lalitpur, Nepal, 150 female undergraduate students were surveyed using a self-administered questionnaire to assess their awareness about cervical cancer. The results revealed that 95% of the respondents lacked sufficient understanding about cervical cancer. While 35% had an average understanding of risk factors and 56% knew what cervical cancer was, nearly two-thirds of the students were aware that cervical cancer could be avoided. The most mentioned preventive methods were good hygiene (68.5%), followed by the HPV vaccine (38.3%), condom use (19.5%), and Pap smear test (8.7%). Surprisingly, only 11.3% reported knowing about the HPV vaccine. Overall, the study emphasized the necessity for health education programs to enhance awareness among students and the community regarding cervical cancer, its signs, causes, risk factors, and preventive strategies (KC & Giri, 2019)<sup>22</sup>. A cross-sectional study in rural mid-western Nepal involved 360 people to assess knowledge, attitude, practice, and challenges of cervical cancer screening. The main finding revealed that over 87 percent had insufficient knowledge, while approximately 72 percent showed a favorable attitude towards screening. Surprisingly, 86.4 percent of women reported never having undergone a cervical cancer screening test. The study highlights that despite a positive attitude, there was a lack of understanding and practice regarding cervical cancer screening (Thapa et al., 2018)<sup>23</sup>.

## MATERIALS & METHODS

The research utilized a descriptive cross-sectional design and focused on reproductive women aged 15-49 in Katunje, Bhaktapur. The sample size was calculated using a prevalence of 90%, resulting in 152 respondents. Non-probability purposive sampling was used. Inclusion criteria were based on age, while exclusion criteria considered critical illness, unavailability during data collection, and non-consent. Data was collected through a self-developed structured questionnaire using face-to-face

interviews, covering socio-demographic variables and knowledge on cervical cancer. In the data collection procedure, formal consent was obtained from the chairperson of the municipality office, and the study plan was presented to the relevant respondents. Before conducting interviews, informed verbal consent was taken from each respondent.

## Statistical Analysis

All collected data were meticulously overviewed, checked, and verified for completeness, consistency, and accuracy. The reviewed data were then entered and analysed using the Statistical Package for Social Science (SPSS) 20 version, and descriptive statistics (Frequency, percentage, mean, and standard deviation) as well as inferential statistics (chi-square test) were applied for interpretation. The results were presented in a frequency table, and the data were analysed and interpreted in line with the research questionnaire's objectives and nature.

## RESULT

### Part I: Description of demographic variables among reproductive women of Katunje, Nepal.

Table 1: Socio-demographic information (Age Interval, Ethnicity, Religion, Marital Status)

Variables	Frequency	Percentage
<b>Age Interval</b>		
15-20	24	15.7
21-40	97	63.8
41-49	31	20.3
<b>Ethnicity</b>		
Brahmin	44	28.9
Chettri	50	32.9
Newar	54	35.5
Others	4	2.6
<b>Religion</b>		
Hindu	109	71.7
Buddhist	4	2.6
Christian	26	17.1
Others	13	8.6
<b>Marital Status</b>		
Married	99	65.1
Unmarried	49	32.2
Widow	4	2.6

Table 1 depicts the sociodemographic characteristics of respondents. More than half (63.8%) of the respondents aged between 21-40 years and least 15.7% of the

respondents between 15-20. One third (35.5%) of the respondents were Newar and least of them (2.6%) belonged to others. The majority (71.7%) of the respondents were Hindu where minorities of the respondents were Buddhist (2.6%). 65.1% of the respondents were married whereas 2.6% were widows.

**Table 2: Socio-demographic information (Educational Status, Occupation) n=152**

Variables	Frequency	Percentage
<b>Education</b>		
Illiterate	39	25.7
Literate	113	74.3
Primary	8	5.3
Secondary	22	14.5
Higher Secondary	39	25.7
Graduate or above	44	28.9
<b>Occupation</b>		
Housewife	29	19.1
Agriculture	27	17.8
Service	39	25.7
Others	57	37.5

Table 2 shows that 25.7% of the respondents were illiterate whereas 28.9% of the respondents' educational level was graduate or above and 5.3% studied up to primary level out of 74.3% literate respondents. One third (37.5%) of the respondents were students and one fourth around (17.8%) of the respondents were engaged in agriculture.

**Table 3: Reproductive Variables (Age of marriage, no of children) n=152**

Variables	Frequency	Percentage
<b>Age of marriage</b>		
15-18	6	3.9
18-24	66	43.4
24-49	29	19.0
<b>No of children</b>		
Zero	8	5.3
One	28	18.4
Two	49	32.2
Three	15	9.9
More than three	2	1.3

Table 3 shows the data regarding reproductive variables. Among 152 respondents, 43.4% were married at the age between 18-24 years whereas 3.9% were married at the age before 18 years. Among the respondents 32.2% gave birth to two children and the least (1.3%) has more than three children.

**Table 4: Sources of Information n=152**

Variables	Frequency	Percentage
<b>Sources of information *</b>		
Television	31	20.4
Radio	12	7.9
Family Member	16	10.5
Friends	33	21.7
Others	34	22.4

Note: \* Multiple response

Table 4 shows that 22.4% of the respondents had heard about cervical cancer from other sources like the internet, whereas least (7.9%) of the respondents had heard from the radio.

## Part II: Data related to knowledge questions.

**Table 5: Knowledge on Cervical Cancer (Meaning, Causative agent, Virus associated) n=152**

Variables	Frequency	Percentage
<b>Meaning of Cervical Cancer</b>		
Changes in uterus	28	18.4
Infectious disease	20	13.2
Abnormal and uncontrollable growth in cervix*	71	46.7
Changes in vagina	33	21.7
<b>Causative agent of cervical cancer is</b>		
Virus *	50	32.9
Dust	35	23.0
Flies	51	33.6
Mosquito	16	10.5
<b>Virus associated with cervical cancer is transmitted by:</b>		
Non-living object	40	26.3
Contaminated blood transfusion	63	41.4
Sexual intercourse*	31	20.4
Contaminated utensils	18	11.8

Note: \*Correct answer

Table 5 shows that less than half (46.7%) of the respondents gave correct answer for meaning of cervical cancer i.e., abnormal

and uncontrollable growth in cervix and least (13.2%) of the respondents answered, 'Infectious disease'. It also shows that

regarding causative agent of cervical cancer one third (32.9%) of the respondents gave correct answer i.e., Virus whereas most respondents (33.6%) responded Flies and least (10.5%) responded Mosquito. It shows that less than half (41.4%) of the respondents gave an incorrect answer for viruses associated with cervical cancer transmission i.e., Contaminated blood transfusion. Only 20.4% of the respondents gave correct answer i.e., Sexual intercourse. Table 6 shows the data regarding knowledge on risk factors and sign and symptoms of

cervical cancer. Regarding risk factors, respondents' responses were Women having multiple sex partners (42.8%), Early marriage (30.9%), Younger the age of first intercourse (26.3%), Prolong use of oral contraceptive pills (36.2%). It also represents knowledge on signs and symptoms, less than half (42.8%) of the respondents answered excessive blood loss during menstruation whereas the minority (7.2%) of the respondents responded loss of appetite.

**Table 6: Knowledge on cervical cancer (Risk factors, Sign and symptoms) n=152**

Variables	Frequency	Percentage
<b>Risk factors of cervical cancer</b>		
Women having multiple sex partners.	65	42.8
Early marriage	47	30.9
Younger the age of first intercourse	40	26.3
Prolong use of oral contraceptive pills.	55	36.2
<b>Sign and symptoms of cervical cancer</b>		
Excessive blood loss during menstruation	65	42.8
Abnormal foul vaginal discharge	59	38.8
Painful micturition	51	33.6
Abdominal pain	46	30.3
Vaginal bleeding after menopause	43	28.3
Low back pain	43	28.3
Painful sexual intercourse	36	23.7
Vaginal discharge tinged with blood	31	20.4
Loss of appetite	11	7.2
Vaginal bleeding during and after sexual intercourse.	34	22.4

Note: Multiple response

**Table 7: Knowledge on Pap smear test n=152**

Variables	Frequency	Percentage
<b>Purpose of Pap smear test</b>		
To detect Cervical Cancer early *	22	14.5
To identify causes of Cervical Cancer	72	47.4
To treat Cervical Cancer	37	24.3
To screen condition of vagina.	21	13.8
<b>Age for Pap smear test</b>		
20-29 year*	62	40.8
30-39 year	73	48.0
40 and above	17	11.2
<b>Interval of time</b>		
Half Yearly	47	30.9
Annually*	53	34.9
Two yearly	34	22.4
Three yearly	18	11.8

Note:\* Correct answer

Table 7 shows data regarding pap smear test. Out of 152 respondents, Minority (14.5%) responded the correct purpose of pap smear test. i.e., to detect cervical cancer early. It shows data regarding knowledge on age for pap smear test. Less than half (40.8%) of the respondents responded

correct age for pap smear test i.e., 20-29 year. Table 2.8 shows data regarding interval of time for pap smear test About one third (34.9%) of the respondents responded annually as the interval of time for pap smear test.



**Table 8: Knowledge on Prevention and treatment of Cervical cancer n=152**

Variables	Frequency	Percentage
<b>Prevention of Cervical cancer</b>		
No	42	27.6
Yes*	110	72.4
<b>If yes</b>		
Avoid multiple sexual partners	48	31.6
Using condom	57	37.5
Get vaccination	21	13.8
Practice mutual monogamy	10	6.6
<b>Prevention of the cervical cancer*</b>		
HPV vaccination	73	48.0
Timely screening for cancer.	78	51.3
Quit smoking.	25	16.4
Having safe sex practice.	48	31.6
No early marriage and early pregnancy.	43	28.3
Timely treatment of STIs.	36	23.7
<b>Treatment of cervical cancer</b>		
No	33	21.7
Yes *	119	78.3
<b>If yes</b>		
Chemotherapy	67	44.1
Radiotherapy	47	30.9
Hormonal Therapy	11	7.2
Hysterectomy	14	9.2

Note: Multiple response, \*Correct answer

Table 8 shows data regarding knowledge on prevention of cervical cancer. About 72.4% of the respondents believed that cervical can be prevented by preventing STIs. This table also portrays data regarding knowledge on treatment and prevention of cervical cancer. Majority the respondents (78.3%) were aware that cervical cancer can be treated, among which 44.1% of the respondent's responded chemotherapy as its treatment. Table 9 portrays data regarding knowledge on meaning of HPV vaccination. Almost

half (44.7%) defined HPV vaccination as Vaccination against vaginal infection. It also portrays data regarding knowledge on prophylactic HPV vaccine. More than half (57.9%) of the respondents considered HPV vaccine as preventive measure of cervical cancer. This table reveals data regarding knowledge on complications of cervical cancer. More than half (53.9%) of the respondents responded to uterine pain as the complication of cervical cancer.

**Table 9: Knowledge on Meaning of HPV Vaccination and complications of cervical cancer.n=152**

Variables	Frequency	Percentage
<b>Meaning of HPV Vaccination</b>		
Vaccination against cervical cancer. *	60	39.5
Vaccination against vaginal infection.	68	44.7
Vaccination for treatment of cervical cancer.	24	15.8
<b>Prophylactic HPV vaccine (Gardasil) as a preventive measure of cervical cancer</b>		
No	64	42.1
Yes *	88	57.9
<b>Complications of cervical cancer</b>		
Severe vaginal bleeding	81	53.3
Uteric pain	82	53.9
Low blood counts	32	21.1
Pyelonephritis	23	15.1

Note: \* Correct answer

### Part III: Frequency and percentage distribution on level of knowledge regarding cervical cancer.

**Table 10: Knowledge level on Cervical Cancer n=152**

Variables	Frequency	Percentage
Inadequate	82	53.9
Adequate	70	46.1

Table 10 portrays that data regarding knowledge level on cervical cancer where 46.1% of the respondents had adequate knowledge whereas 53.9% of the respondents had inadequate knowledge.

## Part IV: Association between demographic variables with level of knowledge.

Table 11: Association between knowledge level and age interval n=152

Variables	Level of Knowledge		Value	P value
	Inadequate	Adequate		
<b>Age Interval</b>			42.69	0.049*
15-20	18(11.84%)	6(3.94%)		
21-40	48(31.57%)	49(32.23%)		
41-49	16(10.52%)	15(9.86%)		

Table 11 shows the association between the level of knowledge with age.

In above table, there is association between level of knowledge with age group as the obtained p value is smaller than the standard p value (i.e p value < 0.05).

Table 12: Association between knowledge level and ethnicity and religion n=152

Variables	Level of Knowledge		Value	P value
	Inadequate	Adequate		
<b>Ethnicity</b>			12.24	0.007**
Brahmin	29(19.07%)	15(9.86%)		
Chettri	32(21.05%)	18(11.84%)		
Newar	19(12.5%)	35(23.02%)		
Others	2(1.31%)	2(1.31%)		

Table 12 shows, there is association between ethnicity and level of knowledge (p value < 0.05)

Table 13: Association between knowledge level and religion

Variables	Level of Knowledge		Value	P value
	Inadequate	Adequate		
<b>Religion</b>			6.08	0.107
Hindu	52(34.21%)	57(37.5%)		
Buddhist	3(1.97%)	1(0.65%)		
Christian	18(11.84%)	8(5.26%)		
Others	9(5.92%)	4(2.63%)		

Table 13 shows there is no association between religion and level of knowledge (p value > 0.05)

Table 14: Association between knowledge level and occupation n=152

Variables	Level of Knowledge		Value	P value
	Inadequate	Adequate		
<b>Occupation</b>			9.70	0.021*
Housewife	10(6.57%)	19(12.5%)		
Agriculture	13(8.55%)	14(9.21%)		
Service	20(13.15%)	19(12.5%)		
Others	39(25.65%)	18(11.84%)		

Table 14 shows, there is association between occupation and level of knowledge (p value < 0.05).

Table 15: Association between knowledge level and education

Variables	Level of Knowledge		Value	P value
	Inadequate	Adequate		
<b>Education</b>			5.064	0.024*
Illiterate	15(9.86%)	24(15.78%)		
Literate	67(44.07%)	46(30.26%)		
<b>If Literate</b>			3.036	0.386
Primary	3(1.97%)	5(3.28%)		
Secondary	14(9.21%)	8(5.26%)		
Higher Secondary	26(17.10%)	13(8.55%)		
Graduate or above	24(15.78%)	20(13.15%)		

Table 15 shows, there is association between education and level of knowledge (p value < 0.05)

Table 16: Association between knowledge level and marital status

Variables	Level of Knowledge		Value	P value
	Inadequate	Adequate		
<b>Marital Status</b>			6.95	0.031*
Married	46(30.26%)	53(34.86%)		
Unmarried	34(22.36%)	15(9.86%)		
Widow	2(1.31%)	2(1.31%)		
<b>If Married, Age Interval of Marriage</b>			9.94	0.766
18	3(1.97%)	3(1.97%)		
18-24	33(21.71%)	33(21.71%)		
24	10(6.57%)	19(12.5%)		
<b>If married, no. of children</b>			3.295	0.510
Zero	5(3.28%)	3(1.97%)		
One	11(7.23%)	17(11.1%)		
Two	26(17.10%)	23(15.1%)		
Three	5(3.28%)	10(6.5%)		
More than three	1(0.65%)	1(0.65%)	n=152	

Table 16 shows, there is association between marital status and level of knowledge (p value < 0.05)

Table 17: Association between knowledge level and sources of knowledge n=152

Variables	Level of Knowledge		Value	P value
	Inadequate	Adequate		
<b>Sources of knowledge</b>				
Television	21(13.81%)	10(6.57%)	2.98	0.084
Radio	5(3.28%)	7(4.60%)	0.79	0.374
Family Member	6(3.94%)	10(6.57%)	1.947	0.163
Friends	12(7.89%)	21(13.81%)	5.246	0.022
Others	19(12.5%)	15(9.86%)	0.066	0.797

Table 17 shows, there is no association between sources of knowledge and level of knowledge (p value > 0.05).

## DISCUSSION

A descriptive cross-sectional study was conducted in Katunje, Bhaktapur, to assess

cervical cancer knowledge among women of reproductive age. The sample comprised 152 participants selected using non-probability convenient sampling from Katunje -5, Bhaktapur.

The age distribution of participants was as follows: 63.4% were aged 21-40 years, 20.3% were aged 41-49 years, and the smallest group (15.7%) fell within the 15-20 years age range. Regarding marriage age, 43.4% got married between 18-24 years, while 3.9% got married before turning 18. Additionally, 32.2% of participants had given birth to two children.

Most of the respondents (71.7%) identified themselves as Hindu, and 35.5% identified as Newar. In terms of education, 74.3% were literate, with 28.9% having a graduate or higher education level, and 5.3% attending primary school. Conversely, 25.7% were illiterate. Occupation-wise, 37.5% were students, and 19.1% were housewives.

When asked about cervical cancer, 46.7% correctly identified it as abnormal and uncontrolled growth in the cervix. Regarding the causative agent, 32.9% correctly identified it as a virus. Additionally, 42.8% mentioned having multiple sex partners as a major risk factor, and 42.8% correctly mentioned excessive blood loss during menstruation as a clinical feature.

Concerning pap smear tests, 34.9% of the respondents knew the appropriate time interval was annually. Moreover, 78.3% believed that cervical cancer could be treated, but only 44.1% mentioned chemotherapy as a treatment option. Finally, 51.3% stated that timely screening for cancer was the most common preventive measure.

There is a significant association between knowledge level and age, as well as education, as evidenced by a study conducted in Kolkata, India by Saha et al. ( $p < 0.05$ ).

No significant associations were found between knowledge level and age at

marriage or the number of children ( $p > 0.05$ ).

## CONCLUSION

According to the study, out of the 152 respondents surveyed, over 50% demonstrated insufficient knowledge about cervical cancer, while less than 50% exhibited adequate knowledge. The research also found no correlation between knowledge level and reproductive variables, such as age at marriage and the number of children. However, there was a significant association between knowledge level and independent variables, such as education, age, and ethnicity.

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