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# Perceptions of Adolescents Regarding Breast Cancer

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## ABSTRACT

**Background:** Breast cancer in women is a major health burden. In Nepal, most common cancer in female is breast cancer. Knowledge plays an important role in improvement of health seeking behavior. Knowledge may positively affect attitude and practice. So, this study aims to assess the knowledge and attitude regarding breast cancer among the adolescents.

**Methods:** A cross-sectional study was done among students of 23 randomly selected higher secondary schools of Bhaktapur district. Total 990 participant were assessed with questionnaire regarding knowledge and attitude towards breast cancer.

**Results:** Out of total 400 participants, 89.6% of male and 88.5% of female respondents had poor knowledge regarding breast cancer. 63.2% of the female and 50.9% of the male respondents had good attitude towards breast cancer. Religion, education of parents and ethnicity of respondents showed positive association with respondent's knowledge of breast cancer. Gender, education and ethnicity of respondents showed positive association with respondent's attitude of breast cancer.

**Conclusions:** Majority of the respondents had poor knowledge and half of respondents had good attitude towards breast cancer. Therefore, educational programs and awareness campaigns that target adolescents to improve their knowledge and attitude regarding breast cancer must be encouraged.

**Keywords:** Attitude; breast cancer; breast self-examination; knowledge

## INTRODUCTION

Cancer is the second-leading cause of death following cardiovascular diseases.<sup>1</sup> Breast cancer is most commonly diagnosed cancer in women, 24.2 percent.<sup>2</sup> Breast cancer was the third most common cancer in Nepal according to Globocan<sup>3</sup> and the leading cancer site in females according to the population based cancer registry in Nepal.<sup>4</sup> Early diagnosis can be successfully be achieved by mass screening either by mammography, Clinical Breast Examination (CBE) and Breast Self-Examination (BSE).<sup>5</sup> BSE would be the approach for early detection in resource limited countries.<sup>6</sup> Inadequate knowledge, ignorance, lack of awareness and misbeliefs are common factors for the late presentation of this disease. Not only that knowledge might dramatically improve attitude, wrong beliefs, and misconceptions and consequently enhance screening practice. So, the main objective of this study is to assess knowledge and attitude regarding breast cancer among the adolescents of Bhaktapur district.

## METHODS

We conducted an analytical cross-sectional study among the students enrolled in grades 11-12 in government and private higher secondary schools of Bhaktapur district. The data collection was done from March to August 2018. Sample size was calculated using the formula, Sample size (n) =  $z^2 \cdot p \cdot q / d^2$  where, Z= 1.96 and taking p as 79.8 %<sup>7</sup> from percentage of respondents with adequate knowledge on breast cancer. Here,  $q = 1 - p = 1 - 0.798 = 0.202$  and  $d = \text{margin of error of } 5\% \text{ of prevalence, } d = 5\% \text{ of } p = 5\% \text{ of } 79.8\% = 0.0399$ . Now, using the formula sample size (n) = 388.97, approximately, 400. Stratification done on the basis of gender (male and female):  $400 \times 2 = 800$ , and considering the non-response percentage of 10, Final sample size =  $800 / 0.9 = 888.88$  so, minimum of 890 participants are required. There are 23 higher secondary schools, among which 15 are Government and eight are privately owned.<sup>8</sup> From the sampling frame five out of 15 Government supported and three out of eight private schools were selected by simple random sampling method (lottery method). Classes or sections within the classes of participating schools were selected by simple random sampling (Lottery method) and all students from the selected class or sections

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were included in the study. Calculation of students' number per each grade was done by proportion of enrollment size. Students who were present during the duration of the study were included. Students who did not give informed consent to participate in the study were excluded. In this study age of students range from 15- 21 years. There were only one student whose age was 15 years, for him we took the consent from school principal as his guardian. Rest all other students gave their own consent. The semi-structured questionnaire was in Nepali language with a few open-ended questions and contained four sections. The first section contained questions about socio-demographic information about students. The second section contained questions about source regarding the breast cancer and family history. The third section contained question about knowledge of breast cancer regarding epidemiology, risk factor, signs and symptoms, BSE, CBE, mammogram and treatment. The fourth section contained question about attitude towards risk factor, symptoms, diagnosis, treatment and awareness regarding breast cancer.

The questionnaire was pretested in Guheshwori higher secondary schools in Kathmandu before the actual study was undertaken and necessary modifications were made. The data was entered using Microsoft Excel and analyzed using IBM SPSS 16. Regarding categorization of knowledge, each correct answer was scored one and incorrect or don't know was scored as zero. Total score was calculated by adding the score obtained for each question in the knowledge section. Attitude was scored by giving strongly positive attitude, positive attitude, neutral, negative attitude and strongly negative attitude a score of 5, 4, 3, 2 and 1 respectively. Then, total score was calculated by adding the score for each question of attitude. Knowledge and attitude was categorized into poor (below 50% of the total score) and good (more than or equal to 50% of the total score). Ethical clearance was sought from Institutional Review Committee of Kathmandu Medical College. All the heads of selected schools were informed in detail about the study. A written consent was taken from all the chosen respondents.

## RESULTS

All the higher secondary schools contacted agreed to participate in the study giving a student's response rate of 100%. A total of 990 samples were collected. The mean ( $\pm$  standard deviation) age of the students was 15.7 ( $\pm$ 1.01) years, with a range of 15-21 years. The median age was 17 years, with the interquartile range of two years. There were 65.4% of middle while 34.6%

were late adolescents. Similarly, 45.66% were males and 54.34% were females. Most participants were Hindu by religion (79.1%) and three-fifths of them were Janajati by ethnicity (60%). Nearly three-fourth of the respondent's father were self-employed and more than half of the mothers were homemakers. Of the respondent's fathers, more than one-thirds were educated up to secondary level (37.2%) and of the respondent's mother, nearly half were educated up to primary level (49.9%).

Almost all of the respondents had heard about breast cancer and more than half of them had heard about it from media (male: 56.4% and female: 55.8%). However, less than half knew that breast cancer is the most common cancer in women (male 40.5% and female 52%). Majority of the respondents (89.6% in male and 88.5% in female) had poor aggregate knowledge regarding breast cancer (Figure 1). Out of the total respondents, half of the male respondents (52.9%) and three-fifth of the female respondents (58.4%) had good knowledge regarding epidemiology of breast cancer. More than three-fifth of the respondents knew that smoking is a risk factor for breast cancer. Half of the respondents did not know that early menarche and first child at late age are the risk factors for breast cancer and three-fourth of the respondents said that infection increase risk. More than half of the respondents did not know that family history is a risk factor for breast cancer and multi-parity decrease the risk. Only 19.3% had heard about BSE. Among the respondents who had heard about BSE (n=191), 103 (53.9%) knew at which age group BSE should be started. Out of the respondents who knew about BSE (n= 191), 43.7% of males and 43.4% of females knew that BSE should be done monthly. Among all the respondents, 41.2% (38.9% of male and 43.1% of female) knew about CBE. Nearly half (56.8%) of those who had heard about CBE (n= 408) knew methods of CBE. Out of the respondents who had heard about CBE (n= 408), 189 (46.3%) knew that CBE should be done yearly. However, 188 (46.1%) of them did not know about the timing of CBE. Out of the total respondents, only 14% had heard about mammogram among which 42.4% were males and 57.6% were females. Among the respondents who had heard about mammogram (n= 139), 100 of them had knowledge regarding the eligible age for mammogram (71.1%).

Regarding treatment of breast cancer, nearly three-fourth of the total respondents (72.6% of male and 71.7% of female) had good knowledge (Figure 2). Females had almost equal chance of having good knowledge [COR 1.12; 95% CI:0.75-1.68] (p-value:0.573) as compared to males.

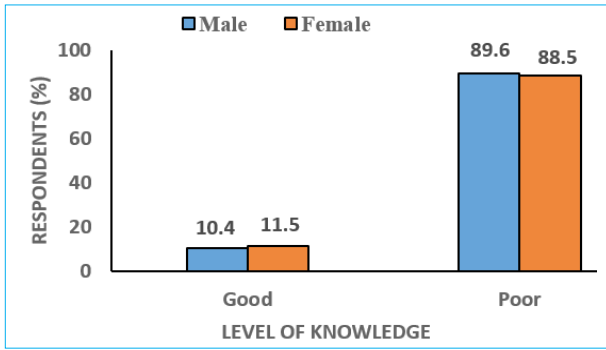


Figure 1. Knowledge score of respondents regarding breast cancer.

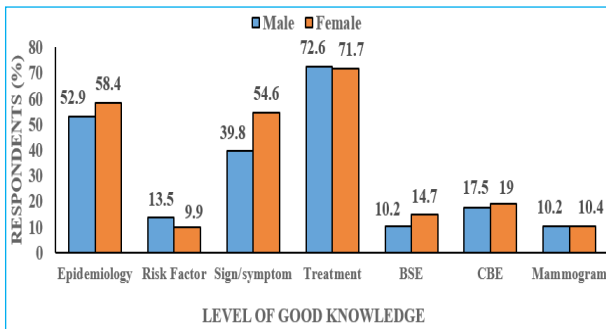


Figure 2. Level good knowledge of respondents regarding breast cancer.

\*BSE: Breast Self-Examination, \*\*CBE: Clinical Breast Examination

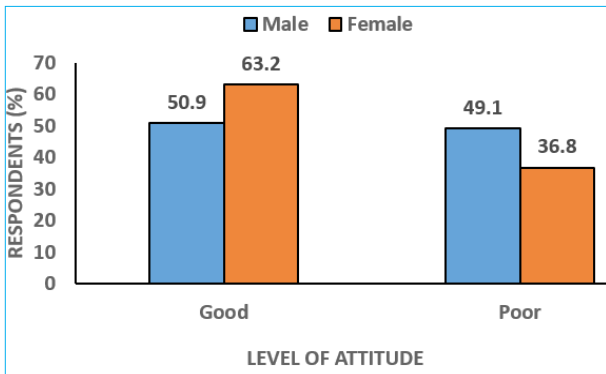


Figure 3. Attitude score of respondents towards breast cancer.

Out of the total respondents nearly two-third of the female respondents (63.2%) and half (50.9%) of the male respondents had good attitude towards breast cancer (Figure 3).

Out of the total respondents, more than half (57.4%) of the female and half of the male respondents (48.5%) respondents had good attitude towards diagnosis and treatment of breast cancer. Nearly three-fourth (73.4%) of the female and three-fifth (60.4%) of the male respondents had good attitude towards awareness

regarding breast cancer (Figure 4). 49.2% of participants agreed that every women is at risk. 67.2% strongly agreed that men should also have knowledge and 66.9% agreed that awareness program in schools are necessary. 34.6% of participants stated that its ok for them if they have lump in breast unless it is painful or discharge. 64.4% agreed that most of women are not aware of appropriate way of breast examination and 44.3% hesitate or feel shy for breast examination.

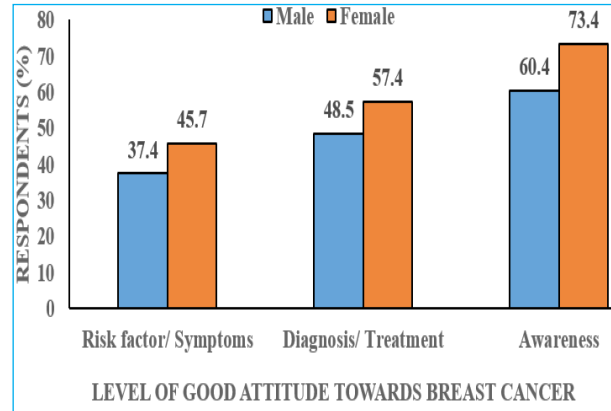


Figure 4. Level of good attitude score of respondents towards breast cancer.

Male respondents had less chances of having good attitude towards breast cancer as compared to female respondents [AOR:0.58; 95% CI:0.45-0.76] and this association was statistically significant (p<0.001). Similarly, attitude towards breast cancer increased as grade of the respondents increased [AOR:0.77; 95% CI:0.59-1.0] (p=0.052). Respondents belonging to Janajati [AOR:0.64; 95% CI:0.46-0.87] and Dalit ethnic groups [AOR:0.39; 95% CI:0.17-0.88] had less chances of having good attitude towards breast cancer as compared to Chhetri and this association were statistically significant (p<0.05).

DISCUSSION

This study revealed that majority of the respondents had poor knowledge regarding risk factors and screening programs of breast cancer. It showed that males had lesser chances of having good knowledge regarding breast cancer than females. This was similar to a finding in study done in Iran which reported that the knowledge of women was significantly higher than men.<sup>9,10</sup> Breast cancer is most common cancer in women so, females might be more conscious about it than males. We found no significant difference in knowledge according to grade of the students. Similar finding was seen in a study conducted in Iran.<sup>9,10</sup> But most of the other studies showed that knowledge level increase as the

level of education increases.<sup>7,11-12</sup> This study showed that nearly two-thirds of the total respondents knew that lump, pain and swelling of breast were signs and symptoms of breast cancer. Unlike this study, study done in KIST medical college in Nepal among the women who visited in out-patient department showed that all the respondents knew about these symptoms.<sup>13</sup> Here, females had statistically better knowledge than males. Likewise study done in KIST medical college in Nepal and Nigeria showed that about an half respondents knew about painless lump in breast as a common symptoms for breast cancer.<sup>13-15</sup> Similarly, a study done among medical, dental, nursing students of BP Koirala Institute of Health Science showed sufficient knowledge regarding early sign and symptoms of breast cancer.<sup>16</sup> The present study showed, males had less chance of having good attitude towards breast cancer as compared to females. This might be due to males get hesitated to talk or discuss and also they had lesser knowledge regarding breast cancer as they did not feel that it was necessary for them to know about breast cancer. This study showed that attitude towards breast cancer increases as the grade of the respondent increases. As the level of education increases their perception regarding breast cancer also increases. Well educated people are more aware than those who are less educated and illiterate.

This study showed that nearly two-fifth of all the respondents (39.6% of male and female) agreed or strongly agreed that they were too young to get breast cancer. This might be due to misconception that breast cancer only occurs in older women. Similarly, more than half of the male respondents (56.4%) and two-third (68.4%) of the female respondents considered that mass media is helpful for raising awareness about breast cancer. This was similar to a finding of study done in Buea, Cameroon which showed that 81.9% of the respondents agreed mass media was helpful.<sup>17</sup> This study showed that, regarding the source of information about breast cancer, more than half of the respondents had heard from media. (Male: 56.4% and female: 55.8%) Media includes radio, television, newspaper and internet. This was similar to the findings of study done among female personnel of Walailak University, Thailand, among women visited to KIST medical college, Nepal, among the school students of Nigeria, and among female teachers of Buraidah, Saudi Arabia.<sup>11,13,14,18</sup>

BSE is considered as an effective measure for early diagnosis and treatment of breast cancer.<sup>10</sup> One of the study done in Butwal, Nepal showed that about half of the participants agreed that a self-examination is a necessary tool for early detection of breast

cancer.<sup>19</sup> The adolescent period is a time that provide teaching opportunities for shaping health behavior into adulthood.<sup>14</sup> Students are at a stage where it is significant that they at least carry out BSE on a regular basis to sense any changes early. Hence, this study was designed for the promotion of breast cancer awareness among students and to assess their knowledge, attitude and perceptions about breast cancer.<sup>20</sup> If breast cancer is detected in early stages, it can be treated in more than 90% of patients.<sup>7</sup> This is also an important factor to be considered particularly for low and middle-income countries like Nepal where people seek services only when they perceive themselves susceptible to health risks. Now, incidence of Breast cancer is increasing in young women due to many reasons like young girls are exposed to risk factors such as alcohol, tobacco, obesity, late age at first pregnancy (>30 years) due to education and late marriages.<sup>14</sup> Women did not perceive the need of undergoing screening until they had recognizable symptoms of breast cancer.<sup>21</sup> Breast cancer in male is not common, many men are unaware that they are at risk and they think breast cancer as a woman's cancer. As men have breast tissue, they can also suffer from breast cancer, so male should also have equal knowledge and positive attitude towards breast cancer.<sup>22</sup>

Adolescents become agents for promoting breast cancer awareness in the family and society. As previous studies were only done in females, male were not aware about breast cancer. Not only female, male should also equally have knowledge about breast cancer. These study findings may be an opportunity for health policy makers to implement the protocol for assessing the effectiveness of CBE and BSE for breast cancer control in future.<sup>23</sup> Students can have supportive role in educating and motivating people on breast cancer. So, knowledge in breast cancer and practices must be included in their educational programs in detail and curriculums which enables the students to provide health education about the BSE, risk factors, causes, sign and symptoms to promote the health habits which ultimately may contribute in eliminating cancer mortality in future.<sup>16</sup>

## CONCLUSIONS

According to this study, it was seen that majority of the respondents (nearly 90%) had poor knowledge regarding breast cancer. Religion, education of parents and ethnicity of the respondents showed positive association with respondent's knowledge of breast cancer. Nearly two-third of the female (63.2%) and 50.9% of the male had good attitude towards breast cancer. Gender, education and ethnicity of respondents showed positive

association with respondent's attitude of breast cancer. There should be more educational programs to improve the knowledge and attitude of adolescents regarding breast cancer.

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**Competing interests:** None declared

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