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Knowledge, Attitude and Practice of Cancer Screening Among Health Care Professionals in A Central Hospital in Nepal

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Abstract

Introduction

The incidence of cancer and cancer related morbidities and mortality are increasing in Nepal. The sorrow of cancer can be reduced by implementing cancer screening programs and it should be started immediately. Before this, it'll be rewarding to get idea of Knowledge, Attitude and Practice of cancer screening among health care professionals who play a crucial role in cancer prevention.

Methods

A cross-sectional survey was carried out among health care professionals working at a government's central hospital, National Academy of Medical Sciences (NAMS), Kathmandu, Nepal where all the facilities for recommended cancer screening tools were available. Data were collected using structured questionnaire and assessed using Statistical Package for the Social Sciences (SPSS) version 21 software.

Results

Two hundred and sixty-seven health care professionals participated in this study among which 116 were doctors, 98 nurses, 1 medical physicist, 15 technician/technologists, 8 health assistants and 29 auxiliaries. A high proportion (95%) of our respondents had superficial knowledge about the cancer screening but the profound knowledge was very limited. Only 45% had undergone screening and attitude towards the practice of screening were mixed.

Conclusion

The overall knowledge, attitude and practice of cancer screening among health care professionals working at NAMS was not satisfactory. Their knowledge should be updated regularly and should be encouraged to participate in cancer screening.

Key words: Cancer Screening; Knowledge; Attitude and Practice; Breast Cancer; Cervical Cancer; Colon and Prostate cancers;

Introduction

Cancer is the second leading cause of death worldwide. Approximately 70% of cancer deaths occur in low and middle-income countries [1]. There were 17.0 million new cancer cases and 9.5 million cancer deaths worldwide in 2018. Of these Asia accounts for 48.4% incidence, which is the highest among different continents. By 2040, the number of new cancer cases and deaths are expected to increase to 27.5 and 16.3 million respectively [2].

The burden of cancer can be reduced by implementing cancer screening program. The aim of the cancer screening is to detect individuals who have abnormalities suggestive of a specific cancer or pre-cancer but have not developed any symptoms, and refer them promptly for diagnosis and treatment. A comprehensive analysis of data from several largest screening programs have shown that well organized screening programs are effective in reducing incidence of cancer and or cancer related deaths in cervical cancer [3] breast cancer [4] and bowel cancers [5].

Incidence of cancer and cancer related morbidities and mortalities are increasing in Nepal. There is no structured mass screening program in the country except some screening camps and few hospital-based screening set-ups conducted by different government and non-government organizations, which are mainly involved in cervical cancer screening. Self-motivated people need to go to nearby facilities for the screening and pay for it. Though there are no reliable reports on the number of people screened every year, it can be assumed very few people are under the reach of cancer screening in Nepal. There could be many causes behind this unmet need and before conducting any study in general people to find out these causes, it will be fruitful to know the knowledge, attitude and practice (KAP) of cancer screening in health care professionals working in a health care set-up having adequate facilities for recommended cancer screenings.

Methods

This study was a cross-sectional survey of health care professionals working at NAMS, Bir Hospital and was conducted from June 2019 to December 2019. The aim was to assess knowledge, attitude and practice of screening of breast, cervix, colon and prostate cancers among health professionals working at oncology and non-oncology fields. Approval was obtained from the institutional review board of NAMS. Informed written consent was obtained from each participant. Sample size was calculated to achieve 95% confidence and 5% type I error. A total number of 267 participants were selected among all eligible health care professionals. Questionnaires were distributed to the participants visiting different departments. Each participant was given a questionnaire and it was collected after it was filled at the same visit.

Data collection was done using structured questionnaire in English language. The questionnaire was developed reviewing similar studies conducted in other countries. Pretest was conducted among 10 health professionals for the understanding of questionnaire and those participated in the pre-test were not included in the study.

The questionnaire contained six parts. The first part was about the socio demographic data on age-group, gender, smoking habit, alcohol habit, occupation, working field and family history of cancer. Questions related to knowledge, attitude and practice of cancer screening were kept in second part. Six questions were about the knowledge, four questions about the attitude and three questions

about the practice. Questions related to screening of breast cancer were asked in the third part, cervical cancer in the fourth part, colon cancer in the fifth part and prostate cancer screening in the sixth part. Most questions had 'Yes', 'No' response and few had multiple answers and few had open answers.

Data were assessed using SPSS version 21 software. Frequency and percentage were calculated for each response and those response were stratified on the basis of different health professionals.

Results:

Two hundred and sixty-seven health care professionals participated in this study among which 116 (43.4%) were doctors, 98 (36.7%) nurses, 1 (0.37%) medical physicist, 15 (5.62%) technician/technologists, 8 (2.99%) health assistants and 29 (10.86%) were auxiliaries. Total number of male participants were 97 (36.33%) and female participants were 170 (63.67%). The age range was from 20 to 59 years with maximum number of participants in the 20-29 years of age group with a total of 138 (51.69%) participants. Those working in the oncology related field were 98 (36.70%) participants. Among the participants 42(15.73%) had family history of cancer, out of them, 27 had family history of cancer in second degree relatives, 7 had cancer in father, 6 in mother, 1 in wife and the remaining 1 in sister. Most common cancers among them were breast in 7, lung in 6, cervix in 5 and colon in 4 relatives. Table 1 shows the socio demographic characteristics of the study population.

Knowledge, practice and attitude of cancer screening:

Around 95% of the participants had heard about cancer screening, its role in early diagnosis and >90% knew about association of cancer with genetic mutation. More than 80% of the participants or their family members were eligible for the cancer screening. Out of them, only 45% of the participants themselves or their family members had undergone cancer screening at least once till the date of this survey. Out of the remaining 146 participants, who had not undergone screening, 52 were not eligible, 12 had never heard of cancer screening and 39, in spite of being knowledgeable and eligible, denied for screening. Remaining 43 answered they did not undergo screening because of their ignorance. Total 31 participants, of those 52 who were not eligible and 12 who had never heard of screening, on further questioning replied they would have done screening if they were eligible or had heard of it. Most common screening, undergone by 121 participants and or their family members, was Pap smear for cervical cancer (71.9%) followed by mammogram for breast cancer (28.09%). Colonoscopy for colon and serum prostate specific antigen (PSA) for prostate cancer were done less. Table 2 shows the details of knowledge and practice of cancer screening.

Knowledge of Breast Cancer Screening:

On the question about the age of starting of breast cancer screening, 31.46% thought at the age of 30, 23.60% thought at 20 and 11.98% at the age of 45. On the question about the tools of breast cancer screening, less than 47% USG breast, more than 65% breast self-examination (BSE) and clinical breast examination (CBE) and maximum participants i.e. 83.89% believed mammogram were the tools used for the screening of breast cancer. Table 3 and 4 show the knowledge about breast cancer screening

| Participants Variables | Doctors | Nurses | Medical physicist | Technicians/Technologists | Health Assistants | Auxiliary | Total n (%) |
|---------------------------------|---------|--------|-------------------|---------------------------|-------------------|-----------|-------------|
| Number of participants | 116 | 98 | 1 | 15 | 8 | 29 | 267 (100) |
| Age group | | | | | | | |
| 20-29 | 51 | 69 | 0 | 4 | 3 | 11 | 138 (51.69) |
| 30-39 | 43 | 15 | 0 | 0 | 4 | 11 | 73 (27.34) |
| 40-49 | 12 | 6 | 1 | 4 | 1 | 2 | 26 (9.74) |
| 50-59 | 10 | 8 | 0 | 7 | 0 | 5 | 30 (11.23) |
| Gender | | | | | | | |
| Male | 68 | 3 | 1 | 10 | 6 | 9 | 97 (36.33) |
| Female | 48 | 95 | 0 | 5 | 2 | 20 | 170 (63.67) |
| Smoking habit | | | | | | | |
| Yes | 23 | 6 | 0 | 5 | 2 | 9 | 45 (16.85) |
| No | 93 | 92 | 1 | 10 | 6 | 20 | 222 (83.15) |
| Alcohol habit | | | | | | | |
| Yes | 43 | 10 | 1 | 8 | 3 | 11 | 76 (28.46) |
| No | 73 | 88 | 0 | 7 | 5 | 18 | 191 (71.54) |
| Family h/o cancer | | | | | | | |
| Yes | 21 | 11 | 0 | 3 | 1 | 6 | 42 (15.73) |
| No | 95 | 87 | 1 | 12 | 7 | 23 | 225 (84.27) |
| Working in cancer related field | | | | | | | |
| Yes | 54 | 24 | 1 | 2 | 4 | 13 | 98 (36.70) |
| No | 62 | 74 | 0 | 13 | 4 | 16 | 169(63.30) |

| Participants Variables | | Doctors n=116 (%) | Nurses n=98 (%) | Medical physicist n=1 (%) | Technicians/ Technologists | Health Assistants n=8 (%) | Auxiliaries n=29 (%) | Total n=267 (%) |
|--|----------|----------------------|--------------------|---------------------------------|-------------------------------|---------------------------------|-------------------------|--------------------|
| Heard of cancer screening | Yes | 116(100) | 98(100) | 1(100) | 10(66.67) | 8(100) | 22(75.87) | 255(95.51) |
| | No | 0(0) | 0(0) | 0(0) | 5(33.33) | 0(0) | 7(24.13) | 12(4.49) |
| Screening helps in early diagnosis | Yes | 115(99.14) | 96(97.95) | 1(100) | 10(66.67) | 8(100) | 22(75.87) | 252(94.38) |
| | No | 1(0.86) | 2(2.04) | 0(0) | 0(0) | 0(0) | 0(0) | 3(1.12) |
| | NI | 0(0) | 0(0) | 0(0) | 5(33.33) | 0(0) | 7(24.13) | 12(4.50) |
| Cancer that's beneficial of screening | Breast | 115(99.14) | 88(89.79) | 1(100) | 5(33.33) | 4(50) | 12(41.38) | 225(84.27) |
| | Cervix | 115(99.14) | 88(89.79) | 1(100) | 4(26.67) | 6(75) | 12(41.38) | 226(84.64) |
| | Colon | 56(48.27) | 41(41.84) | 0(0) | 0(0) | 2(25) | 4(13.79) | 103(38.58) |
| | Prostate | 53(45.69) | 20(20.41) | 0(0) | 0(0) | 2(25) | 2(6.89) | 77(28.84) |
| | NI | 1(0.86) | 10(20.20) | 0(0) | 6(40) | 2(25) | 17(58.62) | 36(13.48) |
| Cancer is associated with genetic mutation | Yes | 116(100) | 88(89.79) | 1(100) | 10(66.67) | 8(100) | 20(68.96) | 243(91.02) |
| | No | 0(0) | 10 (10.2) | 0(0) | 0(0) | 0(0) | 2(6.91) | 12(4.49) |
| | NI | 0(0) | 0(0) | 0(0) | 5(33.33) | 0(0) | 7(24.13) | 12(4.49) |
| Cancers associated with genetic mutations | Breast | 116(100) | 96(97.95) | 1(100) | 10(66.67) | 6(75) | 12(62.07) | 247(92.51) |
| | Cervix | 40(34.48) | 31(31.69) | 0(0) | 6(40) | 4(50) | 14(48.27) | 95(35.58) |
| | Colon | 37(31.89) | 27(27.55) | 0(0) | 3(20) | 3(37.5) | 6(20.69) | 76(28.46) |
| | Prostate | 29(25) | 11(11.22) | 0(0) | 0(0) | 2(25) | 10(34.48) | 52(19.48) |
| | NI | 0(0) | 0(0) | 0(0) | 5(33.33) | 2(25) | 11(37.93) | 18(6.74) |
| Are you/your family members eligible for screening | Yes | 98(84.49) | 77(78.57) | 1(100) | 10(66.67) | 6(75) | 22(75.8) | 214(80.15) |
| | No | 18(15.51) | 21(21.42) | 0(0) | 0(0) | 2(25) | 0(0) | 41(15.36) |
| | NI | 0(0) | 0 | 0 | 5(33.33) | 0(0) | 7(24.13) | 12(4.49) |
| You/your family members ever done screening | Yes | 59(50.84) | 43(43.87) | 1(100) | 7(41.66) | 0(0) | 11(37.93) | 121(45.32) |
| | No | 57(49.13) | 55(56.13) | 0(0) | 8(58.33) | 8(100) | 18(62.07) | 146(54.68) |

NI=No Idea

Table 3: Knowledge about the age of starting of breast cancer screening

| Age of start of breast cancer screening | Doctors n=116 (%) | Nurses n=98 (%) | Medical physicist n=1 (%) | Technicians / Technologists n=15 (%) | Health Assis- tants n=8 (%) | Auxiliaries n=29 (%) | Total n=267 (%) |
|---|----------------------|--------------------|---------------------------------|--|-----------------------------------|-------------------------|--------------------|
| From birth | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) |
| From puberty | 17(14.65) | 23(23.46) | 0(0) | 2(13.33) | 2(25) | 11(37.93) | 55(20.60) |
| At the age of 20 | 34(29.31) | 23(23.46) | 0(0) | 0 | 2(25) | 4(13.79) | 63(23.60) |
| At the age of 30 | 45(38.79) | 26(26.53) | 0(0) | 4(26.67) | 2(25) | 7(24.14) | 84(31.46) |
| At the age of 45 | 14(12.06) | 14(14.28) | 1(100) | 2(13.33) | 1(12.5) | 0(0) | 32(11.98) |
| After menopause | 0(0) | 8(8.1) | 0(0) | 2(13.33) | 0(0) | 0(0) | 10(3.75) |
| No idea | 6(5.17) | 4(4.08) | 0(0) | 5(33.34) | 1(12.5) | 7(24.14) | 23(8.61) |

Table 4: Knowledge about the tools of screening of breast cancer

| Tools | Doctors n (%) | Nurses n (%) | Medical physicist n (%) | Technicians/ Technologists n (%) | Health Assistants n (%) | Auxiliaries n (%) | Total n (%) |
|--------------------------------|------------------|-----------------|-------------------------------|--|-------------------------------|----------------------|-------------|
| Breast Self- Examination | 100(86.21) | 71(72.45) | 0(0) | 2(13.33) | 3(37.5) | 6(48.27) | 182(68.16) |
| Clinical-Breast Examination | 99(85.34) | 69(70.41) | 0(0) | 1(13.33) | 2(25) | 4(34.48) | 175(65.54) |
| Mammogram | 110(94.82) | 83(84.69) | 1(100) | 6(40) | 7(87.5) | 17(58.6) | 224(83.89) |
| USG | 64(55.17) | 49(50) | 0(0) | 1(6.67) | 4(50) | 6(62.06) | 124(46.44) |
| No idea | 1(0.86) | 4(4.08) | 0(0) | 5(33.33) | 1(12.5) | 7(10.34) | 18(6.74) |

USG: Ultra sonography

Knowledge of Cervical Cancer Screening:

On the question about the right time to start the cervical cancer screening almost 40% thought it should be started only after having sexual contact, less than 15% thought it should be started when a female gains puberty or from 21 years of age. Regarding the tools for screening almost 90% of the participants replied Pap smear, more than 40% chose Visual Inspection with Acetic acid (VIA) and Human Papilloma Virus (HPV) whereas only 15% chose Visual Inspection with Lugol's Iodine (VILI). Regarding the use of HPV vaccination, 76.78% replied it is used for prevention and 23.22% said it is not. Table 5 and 6 show the knowledge about cervical cancer screening, and use of HPV vaccine.

Knowledge of Colon Cancer Screening:

on the question which group of population should undergo colon cancer screening around 58% replied patients with irritable bowel disease (IBD) such as Crohn's disease, around 40% replied group of people of age more than 45, and almost 70% replied people having family history of colon cancer should undergo colon cancer screening. On the query about the tools and tests of colon cancer screening 64.42% replied stool occult blood, 82.77% replied colonoscopy, 38.20% thought Computed Tomography (CT) scan and 1.12% participants replied Positron Emission Tomography (PET) scan. Tables 7 and 8 show the knowledge of colon cancer screening.

Knowledge of Prostate Cancer Screening:

On the query about the age of start of prostate cancer, more than 53% replied 40 years of age, almost 23% replied 50 years of age and around 10% replied 60 years of age. Similarly, on the question about the tools and tests of prostate cancer screening, more than 65.17% replied serum prostate specific antigen (PSA) level, 41.57% replied digital rectal examination (DRE), and 46.07% replied magnetic resonance imaging (MRI) scan. Tables 9 and 10 show the knowledge of prostate cancer screening

Discussion

Cancer screening refers to the procedures carried out to find the presence or absence of cancer before signs and symptoms appear. There are only few cancers which show benefits from screening. Fortunately, most common cancers such as cervix, breast, colorectal and lung cancers are among those showing benefits. Depending on the basic screening principles, there are different guidelines developed by different cancer societies.

American Cancer Society (ACS) is one of the trusted cancer societies in the world. ACS guidelines for the early detection of cancer in average-risk adults endorse screening for breast, cervical and colorectal cancers. Because of the uncertainties and differing values about the uncertainty of the balance of benefits and harms it recommends informed and/or shared decision-making for adult

men considering prostate cancer screening. For breast cancer, ACS recommends that women of age from 45 to 54 should get mammograms every year; women of ages 40 to 44 should have the choice to start annual breast cancer screening with mammograms if they wish to do so; women 55 and older should switch to mammograms every 2 years, or can continue yearly screening and the screening should continue as long as a woman is in good health and is expected to live 10 more years or longer. For cervical cancer, ACS recommends to start testing at age 21. Women between the ages of 21 and 29 should have a Pap test done every 3 years. Women between the ages of 30 and 65 should have a Pap test plus

an HPV test done every 5 years. If it is not feasible to do HPV test then continue Pap every 3 years. Women over age 65 who have had regular cervical cancer testing in the past 10 years with normal results should not be tested for cervical cancer. For colorectal cancer, ACS recommends to start the screening at the age 45 and should continue to 75 years of age if the health of the person getting screening is good. From 76 to 85 years of age, it should be done only after consulting the health care provider. For prostate cancer ACS recommends to start the screening at the age of 45 only after having consultation with the health care provider about the pros and cons of testing [6]

Table 5: Knowledge about the age of starting of cervical cancer screening

| Right time to start cervical cancer screening | Doctors n=116 (%) | Nurses n=98 (%) | Medical physicist n=1 (%) | Technicians / Technologists n=15 (%) | Health Assistants n=8 (%) | Auxiliaries n=29 (%) | Total n=267 (%) |
|---|----------------------|--------------------|---------------------------------|--|---------------------------------|-------------------------|--------------------|
| From puberty | 12(10.34) | 10(10.20) | 0(0) | 0(0) | 2(25) | 11(37.93) | 35(13.11) |
| After sexual contact | 49(42.24) | 47(47.96) | 1(100) | 3(20) | 1(12.25) | 5(17.24) | 106(39.70) |
| From 21 years of age | 20(17.24) | 9(9.18) | 0(0) | 3(20) | 1(12.25) | 4(13.79) | 37(13.86) |
| From 30 years of age | 29(25) | 28(28.58) | 0(0) | 2(13.33) | 3(37.5) | 2(6.90) | 64(23.97) |
| No idea | 6(5.18) | 4(4.08) | 0(0) | 7(46.67) | 1(12.25) | 7(24.14) | 25(9.36) |

Table 6: Knowledge about tools of cervical cancer screening and HPV Vaccine

| Tools, Tests, Question | Doctors n=116 (%) | Nurses n=98 (%) | Medical physicist n=1 (%) | Technicians / Technologists | Health Assistants n=8 (%) | Auxiliaries n=29 (%) | Total n=267 (%) |
|--|----------------------|--------------------|---------------------------------|--------------------------------|---------------------------------|-------------------------|--------------------|
| Pap smear | 114(98.27) | 94(95.91) | 1(100) | 6(50) | 6(75) | 18(82.75) | 239(89.51) |
| VIA | 59(50.86) | 42(42.8) | 1(100) | 2(16.66) | 2(25) | 2(6.89) | 108(40.45) |
| VILI | 18(6.74) | 16(16.32) | 1(100) | 2(16.66) | 2(25) | 1(3.44) | 40(14.98) |
| HPV | 61(52.5) | 39(39.79) | 1(100) | 2(16.66) | 3(37.5) | 1(17.24) | 107(40.07) |
| No idea | 1(0.86) | 3(3.06) | 0(0) | 5(33.33) | 2(25) | 7(13.79) | 18(6.74) |
| Do you know HPV Vaccine is for prevention? | | | | | | | |
| Yes | 101(87.07) | 83(84.69) | 1(100) | 4(26.67) | 5(62.5) | 11(37.93) | 205 (76.78) |
| No | 15(12.93) | 15(15.31) | 0 | 11(73.33) | 3(37.5) | 18(26.07) | 62 (23.22) |

VIA: Visual Inspection with Acetic Acid; VILI: Visual Inspection with Lugol's Iodine; HPV: Human

Table 7: Knowledge about colon cancer screening

| Group of population that should undergo screening | Doctors n=116(%) | Nurses n=98 (%) | Medical Physicist n=1 (%) | Technicians/ Technologists n=15 (%) | Health Assis- tants n=8 (%) | Auxiliaries n =29 (%) | Total n=267 (%) |
|---|---------------------|--------------------|---------------------------------|---|-----------------------------------|--------------------------|--------------------|
| Family h/o colon cancer. | 85(73.2) | 73(74.4) | 1(100) | 9(75) | 7(87.5) | 11(37.9) | 186(69.66) |
| IBD s/a Crohn's disease. | 75(64.65) | 60(61.22) | 1(100) | 3(25) | 6(75) | 10(34.4) | 155(58.05) |
| More than 45 years of age | 64(55.17) | 33(33.67) | 1(100) | 3(25) | 3(37.5) | 4(13.79) | 108(40.45) |
| No idea | 4(3.44) | 8(8.16) | 0(0) | 6(50) | 1(12.5) | 9(31.03) | 28(10.49) |

h/o: History of; IBD s/a: Irritable Bowel Disease such as

| Table 8: Knowledge about tools of colon cancer screening | | | | | | | |
|--|--------------------|-------------------|---------------------------------|-----------------------------|----------------------------|----------------------|-------------------|
| Tools and tests | Doctor n=116(%) | Nurses n=98(%) | Medical physicist n=1 (%) | Technician/ Technologist | Health Assistant n=8(%) | Auxiliary n=29(%) | Total n=267(%) |
| Stool occult blood | 83(71.55) | 64(65.31) | 1(100) | 6(40) | 6(75) | 12(41.38) | 172(64.42) |
| Colonoscopy | 111(95.69) | 82(83.67) | 1(100) | 7(46.67) | 6(75) | 14(48.28) | 221(82.77) |
| CT scan | 35(30.17) | 54(55.10) | 1(100) | 5(33.33) | 3(37.5) | 4(13.79) | 102(38.20) |
| PET scan | 1(0.86) | 0(0) | 0(0) | 0(0) | 0(0) | 2(6.89) | 3(1.12) |
| No idea | 2(1.72) | 6(6.12) | 0(0) | 7(46.67) | 1(12.5) | 9(31.03) | 25(9.36) |

CT Scan: computed tomography scan, PET scan: Positron emission tomography scan

| Table 9: Knowledge about Prostate cancer screening | | | | | | | |
|--|---------------------|--------------------|---------------------------------|---|-----------------------------------|--------------------------|--------------------|
| Age of start of prostate cancer screening | Doctors n=116(%) | Nurses n=98 (%) | Medical Physicist n=1 (%) | Technicians/ Technologists n=15 (%) | Health Assis- tants n=8 (%) | Auxiliaries n =29 (%) | Total n=267 (%) |
| 40 years of age | 52(44.83) | 59(60.20) | 1(100) | 8(53.33) | 5(62.50) | 17(58.62) | 142(53.18) |
| 50 years of age | 34(29.31) | 22(22.45) | 0(0) | 1(6.67) | 3(37.50) | 1(3.45) | 61(22.85) |
| 60 years of age | 22(18.97) | 5(5.10) | 0(0) | 0(0) | 0(0) | 2(6.90) | 29(10.86) |
| No idea | 8(6.89) | 12(12.25) | 0(0) | 6(40) | 0(0) | 9(31.03) | 35(13.11) |

| Table 10: Knowledge about tools of Prostate cancer screening | | | | | | | |
|--|--------------------|-------------------|------------------------------|---|----------------------------|----------------------|----------------|
| Tools and tests | Doctor n=116(%) | Nurses n=98(%) | Medical physicist n=1 (%) | Technician/ Technologist n=15 (%) | Health Assistant n=8(%) | Auxiliary n=29(%) | Total n=267(%) |
| Serum PSA | 93(80.17) | 56(57.14) | 1(100) | 6(40) | 4(50) | 14(48.28) | 174(65.17) |
| DRE | 66(56.90) | 34(34.69) | 1(100) | 3(20) | 3(37.50) | 4(13.79) | 111(41.57) |
| MRI | 64(55.17) | 37(37.76) | 1(100) | 6(40) | 2(25) | 13(44.83) | 123(46.07) |
| No idea | 1(0.86) | 0(0) | 0(0) | 7(46.67) | 0(0) | 9(31.03) | 17(6.37) |

PSA: prostate specific antigen, DRE: digital rectal examination, MRI: magnetic resonance imaging

The Knowledge, attitude and practice (KAP) of cancer screening in common Nepalese is still unknown. This study is focused on the KAP among the health personnel who work at a central hospital where all the facilities for the recommended cancer screenings are available. Out of 267 participants 116 were doctors whose basic medical course includes some chapters on oncology; 98 were nurses, 8 were health assistants whose basic medical course usually include minimal information on cancer; and remaining participants might not had learnt about preventive measures in oncology during their studies. 138(51.69%) participants were below the age of 30, 170(63.67%) were female. 42(15.73%) participants had family history of cancer. Cervical and breast are the most common cancers in Nepal. These facts reflect the importance of screening.

Out of 267 participants, all the doctors, nurses and health assistants had heard about cancer screening, whereas, half of the technologists/technicians and one third of auxiliaries had not. More than 95% of the participants believed screening helps in early diagnosis of cancer. This shows almost all of the participants had at least knew that cancer screening is a useful tool to diagnose cancer in its early stage. Moreover, 91% of the participants were aware that cancer is a genetic disease. Similarly, more than 80% of the participants believed screening is beneficial for cervical and breast cancer.

On the questions about the eligibility for screening, 214(80.15%) participants replied they or their family members were eligible, 41 said not eligible and 12 had no idea about the eligibility. 121(45.32%) participants or at least one of their family members had undergone cancer screening at least once. Regarding those 41 participants, who replied as not eligible, it can be assumed most of them had no idea about the eligibility. Minimum age of the participant was 20 years, from this it can be said that at least their mothers were eligible for screening of cervical cancer.

On the question about the recommended age to start the screening of different cancers, 32(11.98%) participants were correct for breast cancer, 37(13.86%) for cervical cancer and 61(22.85%) for prostate cancer. Cervical and breast cancers are the commonest cancers among female in Nepal. Less than 15% of the participants knew when to start the screening for breast and cervical cancers. This result is quite worrisome because if the health personnel don't know, how can they admonish the common people. The question pattern for colon cancer was bit different and only one option regarding age was asked. That was the cause why 108 participants chose the age option too. Overall, most of the participants were not sure or not aware when to start the screenings.

Regarding the cancer screening tools, American Cancer Society recommends mammogram as the screening tool for breast cancer for average risk women. Additional recommendation is the screening MRI for women with high risk of having breast cancer [7]. On the question about the screening tools of breast cancer screening, 224(83.89%) participants chose mammogram, 182(68.16%) also chose breast self-examination (BSE), 175(65.54%) chose clinical breast examination (CBE) and 124(46.44%) opted Ultrasonography (USG) too. Knowingly or unknowingly, there was high uptake about the tools but only few of them and or their family members had undergone mammogram (28.09%), SBE (2.47%), USG breast (0.82%) which was similar to the study conducted among female health workers in Nigerian Urban city where they were aware of mammography as screening tools in 80.7% participants but very low uptake of practice (3.1%) [8]. Mammography practice in our study, though was higher than that was practiced in Nigeria, was low compared to study in Saudi Arabia and Singapore [9, 10].

ACS recommends Pap smear and HPV tests for cervical cancer screening [11]. Another tool, recommended for the low resources set-up, where the burden of cervical cancer is high and expertise in Pap and HPV are less, is VIA. VIA is a simple and less expensive test which can be easily carried out by trained nurses and other health workers. It has an acceptable sensitivity and specificity in the range 50-88.6% and 66.7-89.7%, respectively [12]. On the queries about the screening tools of cervical cancer screening, around 90% of the participants opted Pap smear as screening tool which was correctly mentioned and the result was similar to the study conducted in Nursing staff in Nigeria [13]. Despite the high awareness only 20.05% had done pap smear in the Nigerian study, which was very low in comparison to our study. Out of 121 who had undergone at least one cancer screening, 72% of the participants or one of their family members had undergone pap smear in our study. Knowledge about other tools like VIA and HPV was moderate and VILI was low among the participants and none of them or their family members had undergone VIA, VILI. This discrepancy may be because most of them had undergone pap smear which is done in tertiary centers and VIA and VILI usually done in community settings. On the question about the use of HPV vaccine, almost 77% of the participants knew that it is for prevention of cervical cancer which was quite high uptake in contrast to study conducted in Tanzania among health workers, teachers and parents and religious leaders about the vaccine acceptability where only the health workers that also 22% of health workers heard about the use of HPV vaccine [14].

For colorectal cancer screening, ACS recommends regular screening with either a high-sensitivity stool-based test or a structural (visual) examination, depending on patient preference and test availability. All positive results on non-colonoscopy screening tests should be followed up with timely colonoscopy. The options for colorectal cancer (CRC) screening are: fecal immunochemical test annually; high-sensitivity, guaiac-based fecal occult blood test annually; multitarget stool DNA test every 3 years; colonoscopy every 10 years; computed tomography colonography every 5 years; and flexible sigmoidoscopy every 5 years [15]. On the question about the screening tools of colon cancer screening, almost 83% replied colonoscopy and 64% replied fecal occult blood test. Almost 40% chose wrong options such as CT scan and PET scan. For prostate cancer screening, ACS recommends serum Prostate Specific Antigen (PSA) with or without digital rectal examination (DRE) [16]. On the query about the tools of prostate cancer screening, around 65% opted PSA and 41% DRE. 46% chose the wrong option MRI.

About the knowledge of tools of different cancer screening among the participants in our study, it can be derived that most of them chose all the options they had heard of. Most of them were not sure about the recommended tools. Regarding attitude about cancer screening, there was mixed reaction, 39 participants denied while 31 were in favor of participation in screening in future.

Conclusion

Nepal should start mass screening program as soon as possible. The implementation of some common cancer screening programs such as cervix, breast and colon are of utmost importance to decrease the incidence, morbidities and mortalities related with these cancers. The health care professionals can play a crucial role in reducing the cancer related burdens in the country. But the overall knowledge, attitude and practice of cancer screening among health care professionals working at NAMS was found not to be satisfactory. There should be update courses for health care professionals about cancer including screening methods and they should be encouraged to take part in cancer screening.

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References

1. World Health Organization official website. 2020.
2. Ferlay J, Colombet M, Soerjomataram I, Mathers C, Parkin DM, Piñeros M, et al. Estimating the global cancer incidence and mortality in 2018: GLOBOCAN sources and methods. *International journal of cancer*. 2019;144(8):1941-1953.
3. Hakama M, Miller AB, Day NE, editors. *Screening for cancer of the uterine cervix*. Oxford University Press, USA; 1986.
4. Winters S, Martin C, Murphy D, Shokar NK. Breast cancer epidemiology, prevention, and screening. *InProgress in molecular biology and translational science*. 2017;151:1-32.
5. Edwards BK, Ward E, Kohler BA, Ehemann C, Zauberman AG, Anderson RN, et al. Annual report to the nation on the status of cancer, 1975-2006, featuring colorectal cancer trends and impact of interventions (risk factors, screening, and treatment) to reduce future rates. *Cancer: Interdisciplinary International Journal of the American Cancer Society*. 2010;116(3):544-573.
6. Smith RA, Andrews KS, Brooks D, Fedewa SA, Manassaram-Baptiste D, Saslow D, et al. Cancer screening in the United States, 2019: A review of current American Cancer Society guidelines and current issues in cancer screening. *CA: a cancer journal for clinicians*. 2019;69(3):184-210.

7. Saslow D, Boetes C, Burke W, Harms S, Leach MO, Lehman CD, et al. American Cancer Society guidelines for breast screening with MRI as an adjunct to mammography. *CA: a cancer journal for clinicians*. 2007;57(2):75-89.
8. Akhigbe AO, Omuemu VO. Knowledge, attitudes and practice of breast cancer screening among female health workers in a Nigerian urban city. *BMC cancer*. 2009;9(1):203.
9. Abdel Hadi MS. Breast cancer awareness among health professionals. *Annals of Saudi medicine*. 2000;20(2):135-136.
10. Seah M, Tan SM. Am I breast cancer smart? Assessing breast cancer knowledge among healthcare professionals. *Singapore Med J*. 2007;48(2):158-162.
11. Saslow D, Solomon D, Lawson HW, Killackey M, Kulasingam SL, Cain J, et al. American Cancer Society, American Society for Colposcopy and Cervical Pathology, and American Society for Clinical Pathology screening guidelines for the prevention and early detection of cervical cancer. *CA: a cancer journal for clinicians*. 2012;62(3):147-172.
12. Poli UR, Bidinger PD, Gowrishankar S. Visual inspection with acetic acid (via) screening program: 7 years' experience in early detection of cervical cancer and pre-cancers in rural South India. *Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine*. 2015;40(3):203-207.
13. Awodele O, Adeyomoye AA, Awodele DF, Kwashi V, Awodele IO, Dolapo DC. A study on cervical cancer screening amongst nurses in Lagos University Teaching Hospital, Lagos, Nigeria. *Journal of Cancer Education*. 2011;26(3):497-504.
14. Remes P, Selestine V, Chungalucha J, Ross DA, Wight D, de Sanjosé S, et al. A qualitative study of HPV vaccine acceptability among health workers, teachers, parents, female pupils, and religious leaders in northwest Tanzania. *Vaccine*. 2012;30(36):5363-5367.
15. Wolf AM, Fontham ET, Church TR, Flowers CR, Guerra CE, LaMonte SJ, et al. Colorectal cancer screening for average-risk adults: 2018 guideline update from the American Cancer Society. *CA: a cancer journal for clinicians*. 2018;68(4):250-281.
16. Wolf AM, Wender RC, Etzioni RB, Thompson IM, D'Amico AV, Volk RJ, Brooks DD, Dash C, Guessous I, Andrews K, DeSantis C. American Cancer Society guideline for the early detection of prostate cancer: update 2010. *CA: a cancer journal for clinicians*. 2010;60(2):70-98.