**RESULTS**

Of the 196 participants, 74% were males while 26% were females [[fig 1]](http://jorr.org/viewimage.asp?img=JOralResRev_2015_7_1_6_160169_t4.jpg). The age of participants ranged from 20 to 59 years where maximum (134, 68.4%) were in 20 to 29 years age group. Ninety six participants were medical officer, 79 were junior resident, 11 were senior resident and 13 were consultant .one hundred thirty one participants were the one practicing at BPKIHS while 65 were practicing at district and zonal hospital of eastern Nepal. One hundred sixty nine participants received their medical education from Nepal,16 from India and 11 from south east asia(china, Bangladesh).

**Knowledge about sign symptoms and risk factors**

Out of 196 participants, 74 (37.8%)participants correctly answered tongue as the most common site of oral cancer excluding lip. One hundred sixty three(83.2%) participants correctly identified squamous cell carcinoma as the most common site of oral cancer. Sixty five (33.2%) participants correctly answered about the factor least likely to be associated with oral cancer. Regarding the symptoms most commonly expressed by a patients with oral cancer, 91(46.4%) answered ulceration which was incorrect response whereas only 28(14.3%) participants correctly stated early oral cancer patients to be asymptomatic. For most common age group of oral cancer, 76(38.8%) participants responded to correct answer i.e. 40-59 years of age whereas 83(42.3%) thought oral cancer increases above 60 years of age. Seventy(35.7%) of the participants correctly identified ventral-lateral border of tongue as most likely to develop oral cancer. Eighty six(43.9%) participants stated oral cancer are diagnosed more often in regional or distant stage which was the correct response. Sixty three(32.1%) correctly answered lip cancer to be related with sun exposure. Ninety eight(50%) correctly stated that early oral cancer lesion appears as painless red area. Ninety nine (50.5%) of the medical practitioners identified correct way of examining tongue for oral cancer. Further 118(60.2%) mentioned leukoplakia to be most likely associated with oral cancer while 110(56.1%) mentioned erythroplakia as the second most common lesion to be associated with oral cancer.

Majority of the medical practitioner that responded to the survey knew use of tobacco (189,96.4%),old age (183,93.4%), prior oral cancer lesion (181,92.3%), use of alcohol (166,84.7%), family history of cancer (174,88.8%), use of poor fitting denture (128,65.3%), low consumption of fruit (108,55.1%) as the risk factor for oral cancer. One hundred forty one (71.9%) considered HPV as the risk factor. Use of spicy food and poor oral hygiene received response of 102(52.0%) and 133(67.9%) respectively whereas obesity, hot beverage and food despite being the wrong risk factors received response of 75(38.3%) and 66(33.7%) respectively.

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| Table 1: Grading of participants about knowledge of oral cancer | | |
| Grade | Number | Percentage |
| Low | 55 | 28.1 |
| Average | 128 | 65.3 |
| High | 13 | 6.6 |

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| --- | --- | --- |
| Table 2: Grading of participants about knowledge of risk factor of oral cancer | | |
| Grade | Number | Percentage |
| Low | 37 | 18.9 |
| Average | 91 | 46.4 |
| High | 68 | 34.7 |

Table 1 and 2 shows the grading of medical practitioners based on the indexes for knowledge of oral cancer and its risk factor. Among the participants, 65.3% had average knowledge of oral cancer, 28.1% had low knowledge and 6.6% had high knowledge of oral cancer. Similarly 46.4% had average knowledge of risk factor of oral cancer, 18.9% had low knowledge while 34.7% had high knowledge about risk factor of oral cancer.

**Practice related to oral cancer screening and examination**

With regard to provision of oral cancer examination,137(69.9%) of medical practitioner didn’t provide oral cancer examination ,45(23%) performed oral cancer examination in 1-20% whereas 14(7.1%)provided oral cancer examination to more than 20% of the patient age group 18-39 at their initial appointment. For recall appointment of same age group, 128(65.3%) of medical practitioner didn’t provide oral cancer examination ,57(29.1%) performed oral cancer examination in 1-20% whereas 11(5.6%)provided oral cancer examination to more than 20% .[fig 8] whereas for 40 and above 90(45.9%) of medical practitioner didn’t provide oral cancer examination ,77(39.3%) performed oral cancer examination in 1-20% whereas 29(14.8%)provided oral cancer examination to more than 20% of the patient at their initial appointment. For recall appointment of same age group, 89(45.4%) of medical practitioner didn’t provide oral cancer examination ,83(42.3%) performed oral cancer examination in 1-20% whereas 24(12.2%)provided oral cancer examination to more than 20%.

As the reason for not providing oral cancer examination in 18-39 years, 77(39.3%)highest response stated it was not necessary, whereas for 40 and above, takes too much time received highest response of 77(39.35%). Regarding the examination for edentulous patient ,23(11.7)performed oral cancer examination in more than 20%of the time and 139(68.9%)didn’t provide any examination. When asked about the practice of lymph node palpation, only 11(5.6%) of the medical practitioner palpated lymph node of 81-100%of their patients while 44(22.4%)didn’t palpate the lymph node of the patients.

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| Table 3 : routine lymph node palpation in adult patient | | |
|  | Number of medical practitioners | percentage |
| 0% | 44 | 22.4 |
| 1%-20% | 56 | 28.6 |
| 21%-40% | 39 | 19.9 |
| 41%-60% | 29 | 14.8 |
| 61%-80% | 17 | 8.7 |
| 81%-100% | 11 | 5.6 |

In past 12 months, only 86(43.7%) of medical practitioners have biopsied their patients for suspicious oral lesions where as 110 (56.1%) had not biopsied any of their patients for diagnosis of suspicious oral lesions.

In past 12 months 77(39.3%) of the medical practitioners surveyed had not refer any of their patients for diagnosis of suspicious oral lesions while 119(60.7%) had refer their patients for diagnosis of suspicious oral lesions.

Of those medical practitioner surveyed, 127(64.8%) referred patients with suspicious oral lesions to oral and maxillofacial surgeon, 45(23%) referred such patients to oral surgeon, 22(11.2%) preferred referring to ENT specialist, while 2 (1%) chose to refer to dermatologist.

Among the medical practitioner surveyed, 139(70.9%) scored high in grading of practice regarding history taking , 43(21.9%) were graded average and 14(7.1%) were graded low. (table 4)

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| Table 4.Grading of practice regarding history taking | | |
| score | number | Percentage |
| Low | 14 | 7.1 |
| Average | 43 | 21.9 |
| High | 139 | 70.9 |

**Opinions about oral cancer**

Medical practitioners were asked if their knowledge about oral cancer is current or not, 32 (16.3%) strongly agreed, 126(64.3%) agreed, 22(11.2%) disagreed, 4(2%) strongly disagreed, 12 (6.1%) didn’t know.

Among the Medical practitioners, 126(64.3%) agreed that oral cancer examination for 40 yr and above should be provide annually , 63 (32.1%) strongly agreed to this point while 3(1.5%) disagreed.

One hundred thirty five (68.9%) of the Medical practitioners agreed that oral cancer examination for 18-39 yr should be provide annually , 32 (16.3%) strongly agreed to this point while 17(8.7%) disagreed, 3 (1.5%) strongly disagreed.

In the survey, 106(54.1%) of the respondents were comfortable referring patients with suspicious oral lesion to a specialist, 78(39.8%) strongly agreed to this point where as 11(5.6%) disagreed.

Sixteen (8.2%) strongly agreed that oral cancer examination can be discontinued after three negative exams , 72(36.7%) agreed to this point, 44(22.4%) disagreed, 16 (8.2%) strongly disagreed while 48 (24.5%) didn’t know.

Ninety six (49.0%) participants disagreed that their patients are sufficiently knowledgeable about oral cancer risk factors while 36(18.4%) agreed, 37(18.97%) strongly disagreed, 7(3.6% ) strongly agreed and 20 (10.2%) responded as don’t know for the question.

Among the participants, 96(49.0%) disagreed that their patients are sufficiently knowledgeable about oral cancer sign and symptom while 42(21.4%) agreed, 36(18.4%) strongly disagreed, 2(1%) strongly agreed in the given statement, 20(10.2%) didn’t know the answer.

One hundred twenty six (64.3%) agreed that oral cancer examination should be a separate reimbursable procedure. 25(12.8%) disagreed while 30(15.3%) strongly disagreed and 15(7.5%) didn’t know.

One hundred forty six (71.4%) agreed that they are comfortable palpating lymph node in neck of patients, 45(23.0%) strongly agreed, 9 (4.6%) disagreed, 1(0.5%) strongly disagreed, 1(0.5%) didn’t know.

Among the participants, 105(53.6%) agreed that use of smokeless tobacco place a person at greatest risk for oral cancer than those who smoke cigarette,40(20.4%) strongly agreed, 33(16.8%) disagreed, 5(2.6%) strongly disagreed and 13(6.6%) don’t know .

One hundred thirty two(67.3) agreed that Dentist are qualified to perform oral cancer examination, 49 (25.5%) strongly agreed, 10(5.1%) disagreed, 2(1%) strongly disagreed and 3 (1.5%) didn’t know the answer.

Among the medical practitioners, 73(37.2%) disagreed that Dental hygienist are qualified to perform oral cancer examination, 50(25.5%) agreed , 43 (21.9%) strongly disagreed, 18(9.2%) strongly agreed and 12(6.1%) didn’t know.

In the survey, 127(64.8%) agreed, 31((15.8%) strongly agreed, 27(13.8%) disagreed, 8(4.1%) strongly disagreed that Physician are qualified to perform oral cancer examination, 3 (1.5%) didn’t know the answer.

Eighty six(43.9%) disagreed, 49 (25.0%) agreed, 38 (19.4%) strongly disagreed,7(3.6%) strongly agreed that Nurse practitioner are qualified to perform oral cancer examination. 16(8.2%) didn’t know the answer

One hundred thirty one(66.8%), agreed, 26((13.3%) strongly agreed, 10(5.1%) disagreed, 1(0.5%) strongly disagree agreed that early detection improves 5 yr survival rates from oral cancer, 28(14.3%) didn’t know the answer.

Among the participants 113(57.7%) agreed, 18((9.2%) strongly agreed, 32(16.3%) disagreed, 6(3.1%) strongly disagreed that lesion associated with smokeless tobacco generally resolve when use is discontinued, 27(13.8%) didn’t know the answer.

One hundred thirteen (57.7%) agreed that they are adequately trained to provide tobacco cessation education, 41(20.9%) strongly agreed, 36(18.4%) disagreed, 2(1.0%) strongly disagreed and 4(2%) of participant didn’t know the answer.

One hundred thirty nine (70.9%) agreed that they are adequately trained to provide alcohol cessation education, 28(14.3%) strongly agreed, 24(12.2%) disagreed, 2(1.0%) strongly disagreed and 3(1.5%) of participant didn’t know the answer.

Among the practitioners, 131(66.8%) agreed that Dentist should be trained to provide tobacco cessation education, 58(29.6%) strongly agreed, 5 (2.6%) disagreed and 2(1%) didn’t know.

In the survey, 131( 66.8%) agreed that Dentist should be trained to provide alcohol cessation education, 54(27.6%) strongly agreed, 8(4.1%) disagreed , 2(1.0%) strongly disagreed and 1(0.5%) didn’t know the answer.

One hundred ten (56.1%) agreed that they are adequately trained to examine patients for oral cancer, 21(10.7%) strongly agreed, 58(29.6%) disagree , 2(1.0%) strongly disagreed and 5(2.6%) didn’t know the answer

Among the participants, 128(65.3%) agreed that most dentist are adequately trained to examine patients for oral cancer, 30(15.3%) strongly agreed, 26(13.3%) disagreed, 2(1.0%) strongly disagreed and 10(5.1%) didn’t know the answer.

One hundred fourteen(58.2%) agreed that most physician are adequately trained to examine patients for oral cancer, 25(12.8%) strongly agreed, 47(24.0%) disagreed, 2(1.0%) strongly disagreed and 8(4.1%) didn’t know the answer .

One hundred twenty eight (65.3% ) agreed that they are adequately trained to palpate lymph node in patients neck, 54(27.6%) strongly agreed, 12 (6.1%) disagreed and 2 (1.0%) didn’t know the answer.

Fig 11. bar diagram showing opinion of participants in oral cancer

**About the questions asked about aids for diagnosis of oral cancer**

Among the participants, 152(77.6%) had heard about totuidine blue, 67(34.2%) had heard about vizilite pluse with tblue, 57(29.1%) had heard about microlux DL, 60(30.6%) had heard about VELscope, 100(51.0%) had heard about oral CDX brush biopsy, 36(18.4%) had heard about sapphire velscope and 32 (16.3%) had heard about trimira identafi.

Fourty(20.4%) had used totuidine blue, 7(3.6%) had used vizilite pluse with tblue, 10(5.1%) had used microlux DL, 6(3.1%) had used VELscope, 15 (7.7%) had used oral CDX brush biopsy, 5(2.60%) had used sapphire velscope and 8 (4.1%) had used trimira identafi as diagnostic aids for cancer.

**Opinions about their education in oral cancer**

Medical practitioners were asked if they had attended any continuing education course on oral cancer. Sixty two (31.6%) answered yes and 134(68.4%) answered no.

Among the participants who had attended the course 33 (52.3%) had attended during past 2 -5 yrs, 12 (19.4%) had attended with in past yrs, 11(17.7%) had attended more than 5 years ago.

In question asked about the interest in attending continuining educational course on oral cancer, 149(76.6%) answered yes and 39(19.9%) answered no. 8 (4.1%) were not sure.

Type of educational approach preferred was first choice:

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| --- | --- | --- |
| Table no.5. educational approach preferred (first) | | |
| Type | frequency | percentage |
| Hands out, booklet with self test | 12 | 8.1 |
| Continuing education journals | 17 | 11.4 |
| Audio-visual slide or video tape series | 42 | 28.2 |
| Satellite telecommunication program viewed at medical centre or taped for future viewing | 10 | 6.7 |
| Lecture | 27 | 18.1 |
| Clinical demonstration course | 32 | 21.5 |
| Study club | 2 | 1.3 |
| Computer based programmes | 1 | .7 |
| Conference call with expert in field | 5 | 3.4 |
| online | 1 | .7 |

Second choice:

|  |  |  |
| --- | --- | --- |
| Table no.6. educational approach preferred (second) | | |
| type | frequency | percentage |
| Hands out, booklet with self test | 7 | 4.7 |
| Continuing education journals | 9 | 6.0 |
| Audio-visual slide or video tape series | 23 | 15.4 |
| Satellite telecommunication program viewed at medical centre or taped for future viewing | 8 | 5.4 |
| Lecture | 23 | 15.4 |
| Clinical demonstration course | 53 | 35.6 |
| Study club | 1 | .7 |
| Computer based programmes | 15 | 10.1 |
| Conference call with expert in field | 3 | 2.0 |
| online | 7 | 4.7 |

In question asked to rate their under graduate training regarding oral cancer examination 6(3.1%) rate very good, 115(58.7%) good, 62(31.6%) poor, 5(2.6%)very poor and 8(4.1%)not sure about the answer.

**Assessing the knowledge**

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| Table 7 | | | | | | | |
| S.N. | Category | Variable | Knowledge grading | | | p value | Remarks |
| low | average | high |  |  |
| 1 | Designation | M.O. | 30 | 58 | 5 | 0.363 | N.S. |
| J.R. | 22 | 51 | 6 |
| S.R. | 1 | 10 | 0 |
| Consultant | 2 | 9 | 2 |
| 2 | Hospital | BPKIHS | 43 | 81 | 7 | 0.086 | N.S. |
| Others | 12 | 47 | 6 |
| 3 | Age group of participants | 20-29 | 38 | 86 | 10 | 0.317 | N.S. |
| 30-39 | 16 | 34 | 2 |
| 40-49 | 0 | 8 | 1 |
| 50-59 | 1 | 0 | 0 |
| 4 | Gender | male | 42 | 91 | 12 | 0.225 | N.S. |
| female | 13 | 37 | 1 |
| 5 | Place of study | Nepal | 47 | 111 | 11 | 0.342 | N.S. |
| India | 4 | 12 | 0 |
|  |  |  |  |
| SE Asia | 4 | 5 | 2 |

No significant relationship was found in knowledge and any demographic data.

**Assessing the practice**

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| Table 8 | | | | | | | |
| S.N. | Category | Variable | Practice in history taking | | | p value | Remarks |
| low | average | high |  |  |
| 1 | Designation | M.O. | 7 | 20 | 66 | 0.223 | N.S. |
| J.R. | 4 | 20 | 55 |
| S.R. | 0 | 1 | 10 |
| Consultant | 3 | 2 | 8 |
| 2 | Hospital | BPKIHS | 5 | 28 | 98 | 0.030 | sig |
| Others | 9 | 15 | 41 |
| 3 | Age group of participants | 20-29 | 9 | 33 | 92 | 0.298 | N.S. |
| 30-39 | 5 | 8 | 39 |
| 40-49 | 0 | 1 | 8 |
| 50-59 | 0 | 1 | 0 |
| 4 | Gender | male | 11 | 30 | 104 | 0.741 | N.S. |
| female | 3 | 13 | 35 |
| 5 | Place of study | Nepal | 13 | 38 | 118 | 0.218 | N.S. |
| India | 0 | 1 | 15 |
| SE Asia | 1 | 4 | 6 |

While assessing the practice, significantly higher practice of history taking was seen in BPKIHS than in other hospitals (p=0.030). Designation, age of participants, gender and place of study was not statistically significant with practice in history taking.

**Assessing the knowledge about risk factor**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| S.N. | Category | Variable | Knowledge about risk factors grading | | | p value | Remarks |
| low | average | High |  |  |
| 1 | Designation | M.O. | 21 | 43 | 29 | 0.177 | N.S. |
| J.R. | 14 | 38 | 27 |
| S.R. | 0 | 3 | 8 |
| Consultant | 2 | 7 | 4 |
| 2 | Hospital | BPKIHS | 23 | 62 | 46 | 0.797 | N.S. |
| Others | 14 | 29 | 22 |
| 3 | Age group of participants | 20-29 | 29 | 55 | 50 | 0.001 | sig |
| 30-39 | 8 | 34 | 10 |
| 40-49 | 0 | 1 | 8 |
| 50-59 | 0 | 1 | 0 |
| 4 | Gender | male | 26 | 63 | 56 | 0.149 | N.S. |
| female | 11 | 28 | 12 |
| 5 | Place of study | Nepal | 32 | 76 | 61 | 0.765 | N.S. |
| India | 3 | 8 | 5 |
| SE Asia | 2 | 7 | 2 |

While assessing the knowledge about risk factor of cancer, participants of 20-29 years age group were seen to have significantly higher knowledge than other age groups (p=0.001). Designation, hospital, gender and place of study was not statistically significant with knowledge about risk factor of oral cancer.