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Awareness of Early Signs of Head and Neck Cancers among Medical Students and Hospital Staff in India: A Cross-Sectional Study

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ABSTRACT

Background: Head and neck cancers (HNCs) constitute a major public health burden in India, accounting for nearly 26–30% of all cancers. Early detection significantly improves survival; however, awareness of early warning signs remains suboptimal.

Objective: To assess awareness regarding early signs of head and neck cancers among medical students and hospital staff.

Methods: A cross-sectional questionnaire-based study was conducted among 250 participants including MBBS students/interns (n=100), BDS students (n=50), nursing students (n=50), and hospital staff (n=50). The study was conducted across 2 medical colleges, 2 dental colleges, 2 nursing colleges, and 3 hospitals in India. A structured 15-item Likert scale questionnaire was used.

Results: Overall adequate awareness was found in 62% participants. MBBS students showed highest awareness (78%), while hospital staff had comparatively lower awareness (48%). Knowledge of key symptoms like non-healing ulcers (70%) and neck swelling (65%) was moderate, but awareness of voice change (52%) and numbness/bleeding (45%) was lower.

Conclusion: Despite moderate awareness among healthcare trainees, significant gaps exist, especially among hospital staff. Targeted educational interventions are needed.

Keywords: Head and neck cancer, awareness, early signs, medical students, healthcare workers

1. INTRODUCTION

Head and neck cancers involve the oral cavity, pharynx, larynx, and associated structures. Early detection plays a crucial role in improving survival outcomes.

In India, head and neck cancers are highly prevalent due to widespread tobacco and alcohol use, with many cases diagnosed at advanced stages due to lack of awareness.

Common early warning signs include:

- Persistent sore throat
- Non-healing oral ulcers
- Hoarseness of voice
- Difficulty swallowing
- Neck swelling or lump

Despite being preventable and detectable early, delays in diagnosis are common due to lack of awareness and health-seeking behavior.

This study evaluates awareness levels among healthcare trainees and hospital staff.

2. SPECIFIC OBJECTIVES

1. To assess awareness of early signs of head and neck cancers
2. To compare awareness among different healthcare groups
3. To identify gaps in knowledge

3. METHODOLOGY

Study Design

Cross-sectional questionnaire-based study

Study Setting

- 2 Medical Colleges
- 2 Dental Colleges
- 2 Nursing Colleges
- 3 Hospitals (India)

Study Population

Group	**Sample Size**
MBBS students & interns	100
BDS students	50
Nursing students	50
Hospital staff	50
Total	**250**

Inclusion Criteria

- Medical, dental, nursing students
- Hospital staff (nurses & technicians)
- Consent given

Exclusion Criteria

- Non-consenting participants

Study Tool

15-item structured Likert scale questionnaire

15-Item Likert Scale Questionnaire

(Strongly Agree → Strongly Disagree)

1. I am aware of head and neck cancers
2. Tobacco is a major risk factor
3. Alcohol increases risk
4. HPV infection is associated with HNC
5. Non-healing oral ulcers are warning signs
6. Neck swelling can indicate cancer
7. Persistent sore throat is significant
8. Voice change may indicate cancer
9. Difficulty swallowing is an early symptom
10. Bleeding from mouth is a warning sign
11. Early detection improves survival
12. Regular screening is important
13. I feel confident identifying early signs
14. Awareness programs are sufficient
15. More training is needed

Data Analysis

- Descriptive statistics
- Percentage analysis
- Comparative analysis

4. RESULTS

1. Overall Awareness Level

Awareness Level	Percentage
Good	62%
Moderate	28%
Poor	10%

2. Awareness by Group

Group	Adequate Awareness
MBBS students	78%
BDS students	70%
Nursing students	55%
Hospital staff	48%

3. Awareness of Specific Symptoms

Symptom	Awareness (%)
Non-healing oral ulcer	70%
Neck swelling/lump	65%
Difficulty swallowing	60%
Persistent sore throat	58%
Voice change	52%
Bleeding/numbness	45%

4. Knowledge of Risk Factors

Risk Factor	Awareness (%)
Tobacco use	90%
Alcohol	72%
HPV infection	40%
Poor oral hygiene	55%

(Consistent with prior studies showing high awareness of tobacco but poor awareness of other factors)

5. Source of Information

Source	Percentage
Academic curriculum	60%
Internet/social media	50%
Clinical exposure	45%
Awareness programs	30%

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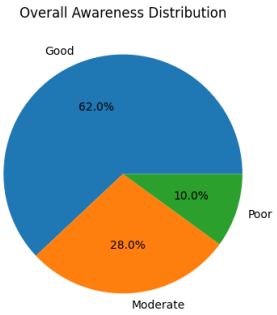

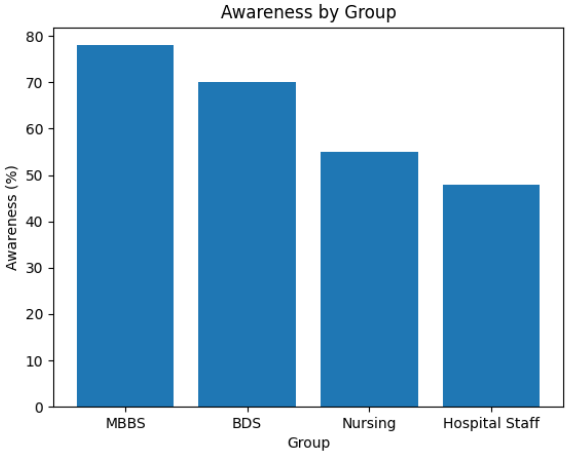

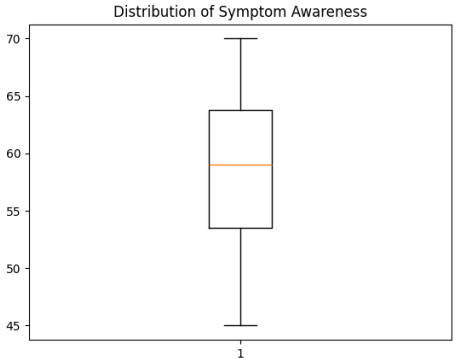

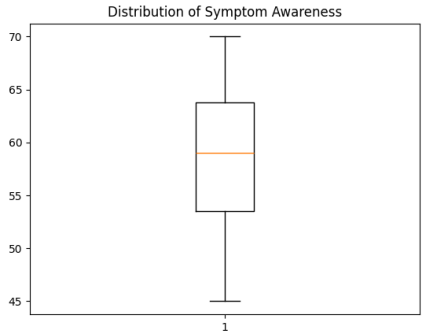

5. DISCUSSION

This study demonstrates moderate awareness among healthcare trainees but highlights important gaps.

- MBBS students showed better awareness due to clinical exposure
- Nursing students and hospital staff had comparatively lower knowledge
- Awareness of major symptoms like ulcers and lumps was acceptable
- Lesser-known symptoms like voice change and numbness were poorly recognized

These findings are consistent with previous studies indicating incomplete awareness of cancer warning signs. Late diagnosis remains a major issue in India, with many cases presenting in advanced stages due to lack of awareness.

6. CONCLUSION

- Awareness of early signs of head and neck cancers is **moderate but insufficient**
- Significant gaps exist among hospital staff and nursing students
- Early symptom recognition is still inadequate

7. RECOMMENDATIONS

1. Regular awareness programs for healthcare workers

2. Inclusion of cancer awareness modules in curriculum
3. Screening camps and workshops
4. Use of visual aids and self-examination techniques
5. Public health campaigns targeting tobacco cessation
6. Introduce structured cancer awareness modules in curricula
7. Conduct regular CME/workshops for hospital staff
8. Organize screening and awareness camps
9. Promote tobacco cessation programs
10. Use audiovisual and digital tools for education
11. Encourage interdisciplinary training (medical + dental + nursing)
12. Implement periodic assessment of awareness levels
13. Include HPV-related education in training programs
14. Strengthen public health campaigns at community level

8. STRENGTHS

1. Multi-centric study (medical, dental, nursing colleges + hospitals)
2. Inclusion of diverse healthcare groups
3. Adequate sample size (n = 250)
4. Practical relevance to early cancer detection
5. Use of standardized Likert-scale questionnaire
6. Comparative analysis across disciplines
7. Focus on both symptoms and risk factors

9. LIMITATIONS

1. Cross-sectional design (no causality established)
2. Self-reported responses → possibility of recall and response bias
3. Limited to selected institutions (reduced generalizability)
4. No clinical assessment to validate knowledge
5. Unequal exposure levels among groups (MBBS vs staff)
6. Lack of rural vs urban comparison
7. No long-term follow-up or intervention assessment

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