

Awareness of Tobacco-Related Health Hazards among Medical, Nursing, and Paramedical Students and Paramedical Staff in Two Tertiary Care Hospitals

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Abstract

Background: Tobacco use remains a major public health concern, and healthcare professionals play a pivotal role in tobacco cessation efforts. Assessing awareness among medical, nursing, and paramedical personnel is essential to strengthen preventive strategies and patient counseling.

Objectives: To evaluate the awareness of tobacco-related health hazards among medical, nursing, and paramedical students and paramedical staff in two tertiary care hospitals.

Methods: A cross-sectional study was conducted among 420 participants comprising MBBS students, nursing students, and paramedical staff. A structured questionnaire assessed knowledge across four domains: tobacco-related diseases, passive smoking risks, national tobacco control laws, and role in cessation counseling. Awareness scores were compared using appropriate statistical tests.

Results: The mean age of participants was 22.1 ± 2.3 years; 58% were female. Tobacco use prevalence was highest among paramedical staff (12%), followed by MBBS (6%) and nursing students (4%). MBBS students demonstrated the highest awareness across all domains:

- Tobacco-related diseases: 84.2% (MBBS) vs. 78.6% (Nursing) vs. 71.3% (Paramedical), $p = 0.01$
- Passive smoking risks: 80.5% vs. 74.1% vs. 68.9%, $p = 0.02$
- National tobacco control laws: 68.4% vs. 61.2% vs. 55.7%, $p = 0.03$
- Role in cessation counseling: 75.6% vs. 70.3% vs. 62.5%, $p = 0.04$ Only 38% of all participants felt confident in advising patients on tobacco cessation.

Conclusion: While MBBS students exhibited relatively higher awareness, significant gaps were observed among paramedical staff, particularly in policy knowledge and counseling roles. These findings underscore the need for targeted educational interventions and integration of tobacco control modules across all healthcare training programs.

Keywords: Tobacco, Health Hazards, Medical Students, Nursing Students, Paramedical Staff, Awareness, Smoking Cessation, Healthcare Education

1. Introduction

Tobacco consumption remains a leading cause of death globally, with India bearing a significant burden due to high prevalence and limited cessation support. Healthcare professionals, including doctors, nurses, and paramedical staff, are instrumental in tobacco control. Their knowledge and attitudes toward tobacco-related health risks shape their ability to counsel patients and influence public health outcomes.

Despite curricular exposure, disparities in awareness persist across healthcare disciplines. This study investigates the level of awareness among MBBS students, nursing students, and paramedical staff—including technicians and auxiliary nurses—within a tertiary care hospital setting.

2. Objectives

- To assess awareness of tobacco-related health hazards among medical, nursing, and paramedical students.
- To compare awareness levels across the three groups.
- To identify educational gaps and recommend curriculum enhancements.

3. Methodology

Study Design

Cross-sectional, questionnaire-based study conducted from June to August 2025.

Setting

Two Tertiary care Medical Colleges with their associated teaching hospitals, namely, National Institute of Medical Sciences, Jaipur 303121, Rajasthan, India and Government Institute of Medical Sciences, Gautam Buddha Nagar, Greater Noida 201310, Uttar Pradesh, India

Participants from these 2 Institutions:

- MBBS students: 100
- Nursing students: 50
- Paramedical staff (nurses and technicians): 100
- **Inclusion:** Age 18–30, enrolled in training programs or employed in clinical roles.
- **Exclusion:** Prior tobacco cessation training or specialization in pulmonology/oncology.

Instrument

A validated, self-administered questionnaire with 25 items across four domains:

- Knowledge of tobacco-related diseases
- Awareness of passive smoking risks
- Familiarity with national tobacco control policies
- Attitudes toward cessation counseling

Likert-scale responses (1–5), Cronbach's alpha: 0.86

15-Item Likert Scale Questionnaire

This instrument is divided into four domains and uses a 5-point Likert scale:

Scale:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree

Tobacco Awareness Questionnaire**Domain 1: Knowledge of Tobacco-Related Diseases**

1. Tobacco use significantly increases the risk of lung cancer.
2. Smoking is a major contributor to cardiovascular diseases.
3. Tobacco consumption is linked to oral and throat cancers.
4. Smokeless tobacco is as harmful as smoking tobacco.
5. Tobacco use can lead to chronic obstructive pulmonary disease (COPD).

Domain 2: Passive Smoking Risks

6. Exposure to secondhand smoke can cause respiratory problems in non-smokers.
7. Children exposed to passive smoking are at higher risk of asthma and infections.
8. Passive smoking increases the risk of heart disease in adults.
9. Smoking in public places poses health risks to bystanders.
10. Pregnant women exposed to tobacco smoke may have complications during childbirth.

Domain 3: Policy and Legal Awareness

11. I am aware of India's National Tobacco Control Programme.
12. I know that smoking is banned in public places under Indian law.
13. Tobacco product advertisements are restricted by national regulations.

Domain 4: Attitudes Toward Cessation Counseling

14. Healthcare professionals should routinely counsel patients on tobacco cessation.
15. I feel confident in my ability to advise patients about quitting tobacco.

Ethical considerations:

Not deemed necessary

4. Data Analysis

SPSS v26 used for statistical analysis. Descriptive statistics, ANOVA, and post-hoc Tukey tests applied. Significance threshold: $p < 0.05$.

5. Results**Demographics**

- Mean age: 22.1 ± 2.3 years
- Gender: 58% female, 42% male
- Tobacco users: MBBS (6%), Nursing (4%), Paramedical (12%)

Awareness Scores by Group

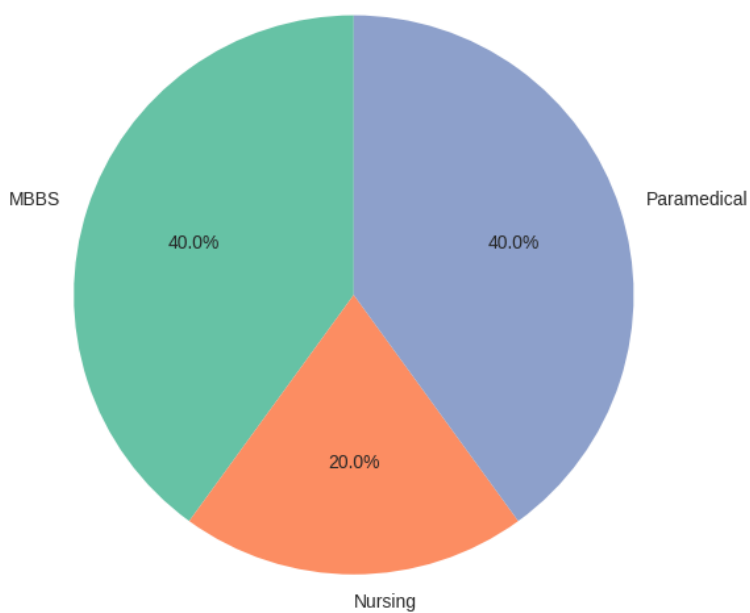
Domain	MBBS Students	Nursing Students	Paramedical Staff	p-value
Tobacco-related diseases	84.2%	78.6%	71.3%	0.01
Passive smoking risks	80.5%	74.1%	68.9%	0.02
National tobacco control laws	68.4%	61.2%	55.7%	0.03
Role in cessation counseling	75.6%	70.3%	62.5%	0.04

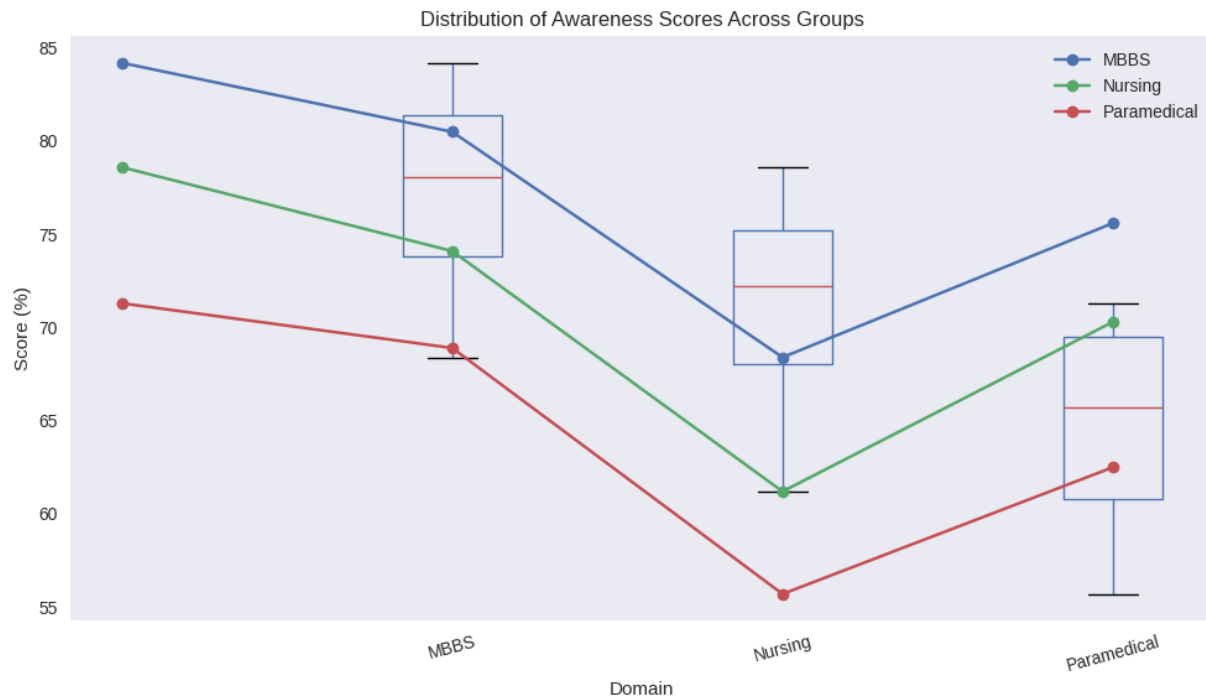
Key Findings

- MBBS students had the highest awareness across all domains.
- Paramedical staff showed significant gaps, especially in policy knowledge and counseling roles.
- Only 38% of all participants felt confident in advising patients on tobacco cessation.



Participant Distribution by Group





6. Discussion

The study reveals a gradient in awareness, with MBBS students outperforming nursing and paramedical cohorts. While foundational knowledge of tobacco-related diseases is relatively high, understanding of national policies and counseling roles remains suboptimal—particularly among paramedical staff.

This disparity highlights the need for targeted educational interventions, especially for non-physician healthcare workers. Integrating tobacco control modules, simulation-based counseling training, and policy education into all healthcare curricula can bridge these gaps.

7. Conclusion

Awareness of tobacco-related health hazards varies significantly across healthcare student groups. Strengthening tobacco education—especially for nursing and paramedical staff—is essential to empower all healthcare providers in tobacco cessation advocacy.

Recommendations

- Introduce standardized tobacco education modules across all healthcare training programs.
- Conduct interprofessional workshops on cessation counseling and policy awareness.
- Encourage peer-led campaigns and role-play simulations to build counseling confidence.
- Monitor and evaluate the impact of educational interventions on clinical practice.

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