

Awareness and Practices Regarding Stress Peptic Ulcer Prevention Among Hospital Staff and Medical Students

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ABSTRACT

Background: Stress ulceration is a significant complication among critically ill patients. Prevention relies not only on clinical guidelines but also on the awareness and practices of healthcare providers. **Objectives:** To assess the level of awareness and current practices related to stress ulcer prevention among MBBS students, dental students, and paramedical staff in four tertiary hospitals in India. **Methods:** A cross-sectional survey was conducted among 250 participants (100 MBBS students, 50 dental students, and 100 paramedical staff including nurses and technicians). A structured questionnaire assessed knowledge of risk factors, prophylactic measures, guideline familiarity, and self-reported preventive practices. **Results:** Knowledge scores were highest among MBBS students (mean 78%), followed by paramedical staff (65%) and dental students (54%). Only 43% of participants could correctly identify all major risk factors for stress ulcers. Nurses demonstrated more consistent prophylactic practices (72%) compared to students (MBBS 59%, dental 42%). Significant gaps were observed in guideline awareness and implementation. **Conclusion:** Awareness and practices regarding stress ulcer prevention vary significantly among healthcare providers in tertiary care settings. Targeted education and standardized institutional protocols are needed to improve prevention strategies.

Keywords: Stress peptic ulcer, medical students, prevention

1. INTRODUCTION

Stress ulcers are acute mucosal lesions of the stomach and proximal duodenum that occur in patients subjected to severe physiological stress, such as trauma, sepsis, or major surgery. Left unaddressed, they can lead to upper gastrointestinal bleeding, increased morbidity, extended hospital stays, and higher healthcare costs. While guidelines recommend prophylactic measures for at-risk patients (e.g., pharmacologic acid suppression, early enteral nutrition), consistent application depends on healthcare workers' awareness and clinical practices.

In India's tertiary hospitals, multidisciplinary teams—including physicians, students, nurses, and technicians—play critical roles in patient care, yet data on their awareness and practices regarding stress ulcer prevention are limited. This study evaluated these parameters among MBBS students, dental students, and paramedical staff.

2. SPECIFIC OBJECTIVES:

- **To assess the level of awareness regarding stress peptic ulcers**
 - Among hospital staff (nurses and technicians) in the selected tertiary hospitals.
 - Among medical students (MBBS and dental) in the selected tertiary hospitals.
- **To compare the awareness levels of stress peptic ulcer etiology, risk factors, clinical features, and prevention strategies**
 - Between hospital staff and medical students.
 - Between different groups within hospital staff (nurses vs. technicians).
 - Between MBBS and dental students.
- **To evaluate the current practices related to stress peptic ulcer prevention**
 - Among hospital staff (nurses and technicians).
 - Among medical students (MBBS and dental students).
- **To identify gaps between awareness and actual preventive practices**
 - Within each study group (hospital staff and medical students).
 - Between clinical knowledge and practice behavior.
- **To determine the association between demographic/educational factors** (such as age, gender, years of experience, academic level)
 - And the level of awareness regarding stress peptic ulcer prevention.
 - And adherence to recommended preventive practices.
- **To explore barriers faced by hospital staff and medical students**
 - In implementing stress peptic ulcer prevention measures in clinical practice or daily routine.
- **To propose recommendations based on findings**
 - For improving awareness and strengthening preventive practices among hospital staff and medical students.

3. METHODOLOGY

Study Design

A cross-sectional study was conducted from July to September 2025 across four tertiary hospitals in India: two government and two private teaching hospitals. Namely, National Institute of Medical Sciences 303121, Jaipur,

Rajasthan, India; Government Institute of Medical Sciences, Gautam Buddha Nagar 201310, Uttar Pradesh; Fortis Hospital, Malviya Nagar, Jaipur 302017, Rajasthan, India; Dental College and Hospital, Bagru, Jaipur, Rajasthan; College of Nursing, Bagru, Jaipur Rajasthan

Participants

- **MBBS students (n=100):** Third-year and final-year students who had completed clinical rotations.
- **Dental students (n=50):** Final-year dental students.
- **Paramedical staff (n=100):** Including nurses (n=70) and clinical technicians (n=30) engaged in critical care and ward management.

Inclusion Criteria

- Currently enrolled or employed at participating hospitals.
- Willingness to provide informed consent.

Data Collection Tool

A structured, pre-validated questionnaire was used, including:

1. **Demographics:** Age, gender, role, years of experience.
2. **Knowledge Assessment:** Items on risk factors, pathophysiology, and prophylaxis.
3. **Practice Assessment:** Self-reported application of prophylactic measures and guideline use.
4. **Attitudes:** Perception of the importance of stress ulcer prevention.

Scoring

- Knowledge was scored as percentage correct (0–100%).
- Practice adherence was self-rated on a 5-point Likert scale; responses ≥ 4 considered good practice.

Likert Scale Questionnaire

Instructions to Participants:

Please indicate your level of agreement with each statement using the following scale:

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

Section A: Awareness of Stress Peptic Ulcer (Items 1–8)

1. I am aware that severe physical or psychological stress can lead to the development of peptic ulcers.
2. I know that critically ill and hospitalized patients are at higher risk of stress-related peptic ulcers.
3. I am aware of common risk factors for stress peptic ulcers, such as NSAID use, alcohol consumption, and smoking.
4. I know the role of gastric acid and mucosal barrier disruption in stress peptic ulcer formation.
5. I am aware that *Helicobacter pylori* infection can contribute to peptic ulcer disease.
6. I know that stress peptic ulcers can lead to serious complications such as gastrointestinal bleeding and perforation.

7. I am aware of pharmacological methods used for stress ulcer prevention (e.g., proton pump inhibitors, H₂ blockers).
8. I am aware of non-pharmacological measures (adequate nutrition, stress management) for stress peptic ulcer prevention.

Section B: Practices and Attitudes Toward Prevention (Items 9–15)

9. I routinely consider stress peptic ulcer prevention in high-risk patients during clinical practice or training.
10. I follow recommended guidelines for stress ulcer prophylaxis when indicated.
11. I practice lifestyle measures (stress control, balanced diet) to reduce my own risk of peptic ulcers.
12. I counsel patients or peers about the importance of stress peptic ulcer prevention when appropriate.
13. I avoid unnecessary use of NSAIDs or advise protective measures when their use is unavoidable.
14. I believe that adequate awareness among healthcare workers can reduce the incidence of stress peptic ulcers.
15. I feel the need for more training or educational programs on stress peptic ulcer prevention.

- **Awareness domain:** Items 1–8 (Score range: 8–40)
- **Practice/Attitude domain:** Items 9–15 (Score range: 7–35)
- Higher scores indicate **better awareness and preventive practices.**

Statistical Analysis

Data were analyzed using descriptive statistics. Group comparisons used ANOVA and chi-square tests. A p-value of <0.05 was considered significant.

5. RESULTS

Participant Characteristics

Group	N	Mean Age (yrs)	Gender (M/F)
MBBS Students	100	22.1 ± 1.3	54/46
Dental Students	50	23.0 ± 1.7	28/22
Paramedical Staff	100	28.4 ± 4.9	38/62 (more female)

Knowledge Scores

Group	Mean Knowledge Score (%)
MBBS Students	78 ± 10
Paramedical Staff	65 ± 12
Dental Students	54 ± 14
p <0.001 (significant difference between groups)	

Only **43%** of all participants correctly identified all major stress ulcer risk factors (mechanical ventilation, coagulopathy, shock).

Awareness of Guidelines

- **55%** of MBBS students were aware of formal stress ulcer prevention guidelines.

- 28% of dental students were aware.
- 62% of paramedical staff reported guideline awareness (higher among nurses).

Practice Patterns

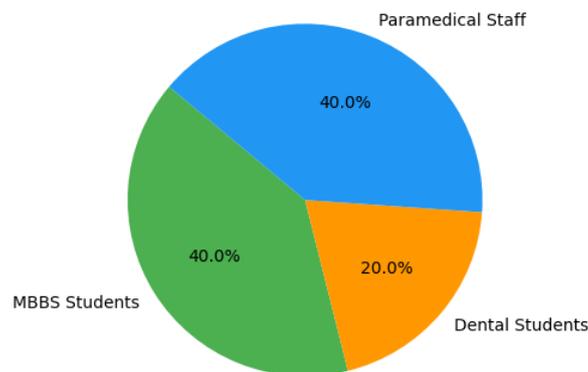
Practice Component	MBBS Students	Dental Students	Paramedical Staff
Routine assessment of stress ulcer risk	61%	35%	68%
Pharmacologic prophylaxis where indicated	58%	40%	70%
Enteral nutrition initiation when appropriate	65%	42%	72%
Documentation of prophylaxis protocols	49%	28%	59%

Nurses reported the highest frequency of appropriate prophylactic practices (72%). Dental students demonstrated significantly lower engagement in both preventive awareness and practice.

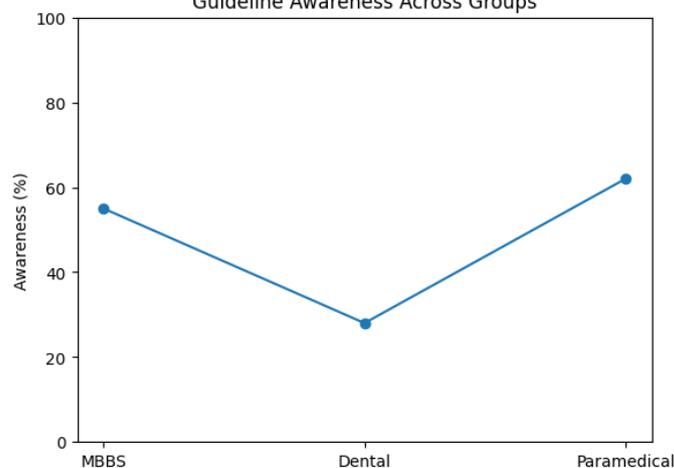
Attitudinal Findings

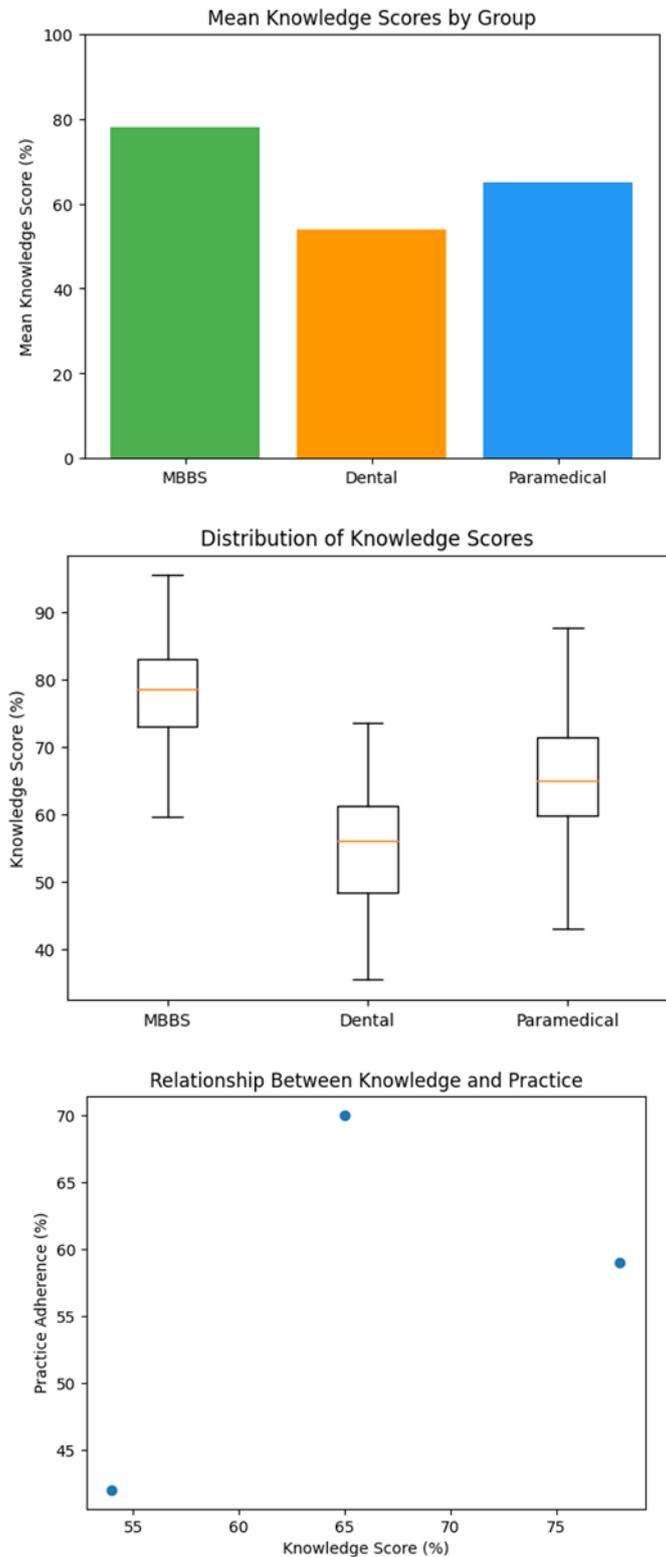
- 80% acknowledged stress ulcer prevention as important.
- However, **only 46%** felt they had received adequate training.

Distribution of Study Participants



Guideline Awareness Across Groups





6. DISCUSSION

This study highlights significant gaps in both **awareness** and **practice** of stress ulcer prevention among healthcare providers and trainees in tertiary Indian hospitals.

- **Knowledge Gaps:** MBBS students demonstrated relatively better knowledge compared to dental students and paramedical staff, likely due to more extensive clinical curriculum exposure.

- **Practice Variation:** Paramedical staff—especially nurses—showed higher implementation of prophylactic measures, perhaps due to frontline patient care responsibilities.
- **Guideline Familiarity:** Overall awareness of formal stress ulcer prophylaxis guidelines was modest, reflecting a need for institutional emphasis on guideline dissemination.
- **Training Needs:** Many participants reported insufficient training, underscoring the need for structured educational programs.

Comparison with Other Studies

Although literature on this topic in Indian settings is sparse, similar international studies have reported variable levels of guideline awareness among healthcare teams, with nurses often more consistent in practice than students and physicians in training.

7. STRENGTHS AND LIMITATIONS

Strengths: Multicenter design, inclusion of diverse healthcare roles, validated questionnaire
Limitations: Self-reported practices (potential reporting bias), cross-sectional design (no temporal relationship), and lack of objective clinical outcome correlation.

8. CONCLUSION

Awareness and practices regarding stress ulcer prevention are suboptimal among students and paramedical staff in tertiary care hospitals in India. There is a clear need for enhanced education, structured training, and systematic implementation of evidence-based prophylaxis protocols.

9. RECOMMENDATIONS

- **Curriculum Integration:** Include stress ulcer prevention systematically in MBBS and dental curricula.
- **Continuing Education:** Regular in-service training for paramedical staff.
- **Institutional Protocols:** Develop and implement standardized prophylaxis checklists and order sets.
- **Audit and Feedback:** Monitor adherence and provide feedback to clinical teams.
- Decision Support
- Implement **checklists** in ICU rounds to assess indications daily
- Patient-Centered Care
- Early **enteral nutrition** in eligible patients to reduce mucosal injury risk
- Further Research
- Prospective studies correlating awareness/practice with patient outcomes

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