



Original Article

## Awareness of Basic Life Support (BLS) Among Medical, Dental, Nursing Students and Practicing Doctors in RKDF Medical College and Research Centre, Bhopal

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### ABSTRACT

**Background:** Basic Life Support (BLS) is a critical lifesaving skill that every healthcare professional must possess. Despite its importance, several studies suggest inadequate knowledge and awareness of BLS among healthcare students and professionals.

**Aim:** To assess and compare the level of awareness and knowledge regarding Basic Life Support among medical, dental, nursing students, and practicing doctors.

**Materials and Methods:** A cross-sectional questionnaire-based study was conducted among medical students, dental students, nursing students, and doctors at a tertiary care teaching hospital. A pre-validated structured questionnaire consisting of 20 multiple-choice questions based on current BLS guidelines was used. Data were analysed using descriptive statistics and comparative analysis.

**Results:** A total of 400 participants were included. Overall adequate BLS knowledge was observed in 62% of doctors, 48% of medical students, 41% of nursing students, and 29% of dental students. Prior formal BLS training showed a statistically significant association with higher knowledge scores ( $p < 0.05$ ).

**Conclusion:** The study highlights significant gaps in BLS awareness among healthcare students and professionals, particularly among dental and nursing students. Regular hands-on BLS training and mandatory certification programs should be incorporated into the curriculum to improve preparedness for medical emergencies.

**Keywords:** Basic Life Support, CPR, Healthcare Students, Medical Education, Emergency Care.

### INTRODUCTION

Sudden cardiac arrest remains one of the leading causes of mortality worldwide. Immediate recognition and prompt initiation of Basic Life Support (BLS) significantly improve survival outcomes. BLS includes early recognition of cardiac arrest, activation of emergency response systems, cardiopulmonary resuscitation (CPR), and use of automated external defibrillators (AEDs) <sup>(1,2)</sup>

Healthcare professionals are often the first responders in medical emergencies. Therefore, adequate knowledge and practical skills related to BLS are essential not only for doctors but also for medical, dental, and nursing students. Despite being included in medical curricula, BLS training is often inadequate, irregular, or lacks hands-on exposure <sup>(3)</sup>

This study was undertaken to evaluate and compare awareness and knowledge regarding BLS among different healthcare disciplines.

## Objectives

1. To assess the level of awareness and knowledge of BLS among medical, dental, nursing students, and doctors.
2. To compare BLS knowledge among different healthcare groups.
3. To determine the impact of prior BLS training on knowledge levels.

## MATERIALS AND METHODS

### Study Design

Cross-sectional observational study.

### Study Setting

A tertiary care teaching hospital and associated medical, dental, and nursing colleges.

### Study Population

- Medical students (MBBS)
- Dental students (BDS)
- Nursing students (GNM/B.Sc Nursing)
- Practicing doctors (interns, residents, faculty)

### Sample Size

**400 participants (100 from each group).**

### Inclusion Criteria

- Willing participants
- Students and doctors actively enrolled or working in the institution

### Exclusion Criteria

- Participants who had undergone formal BLS training within the last 6 months
- Incomplete questionnaire responses

### Study Tool

A pre-validated structured questionnaire consisting of:

- Demographic details
- Previous exposure to BLS training
- 20 MCQs based on standard BLS guidelines (CPR steps, compression rate, compression-ventilation ratio, AED usage)

### Data Analysis

- Descriptive statistics (mean, percentage)
- Comparison using Chi-square test
- p-value <0.05 considered statistically significant

## RESULTS

### Demographic Distribution

- Mean age: 23.6 ± 4.2 years
- Male: 52%, Female: 48%

### Overall BLS Knowledge

Group	Adequate Knowledge (%)
Doctors	62%
Medical Students	48%
Nursing Students	41%
Dental Students	29%

### Effect of Prior BLS Training

Participants with prior BLS training demonstrated significantly higher scores compared to those without training ( $p < 0.05$ ).

### Knowledge Gaps Identified

- Correct compression rate
- Compression depth

- AED sequence
- Management of choking

## TABLES

**Table 1: Demographic Characteristics of Study Participants**

Variable	Doctors (n=100)	Medical Students (n=100)	Dental Students (n=100)	Nursing Students (n=100)	Total (n=400)
Mean Age (years)	32.4 ± 6.8	22.1 ± 2.3	21.9 ± 2.1	23.4 ± 3.2	23.6 ± 4.2
Male (%)	58	55	46	49	52
Female (%)	42	45	54	51	48
Prior BLS Training (%)	64	38	22	35	39.7

**Table 2: Comparison of Overall BLS Knowledge Scores**

Group	Mean Knowledge Score (out of 20)	Adequate Knowledge (%)	Inadequate Knowledge (%)
Doctors	14.8 ± 3.1	62	38
Medical Students	12.2 ± 2.9	48	52
Nursing Students	11.4 ± 2.7	41	59
Dental Students	9.6 ± 2.5	29	71

**Table 3: Knowledge of Individual BLS Components**

BLS Component	Doctors (%)	Medical Students (%)	Dental Students (%)	Nursing Students (%)
Correct compression rate	68	51	32	44
Correct compression depth	65	47	29	40
Compression-ventilation ratio	72	54	35	48
AED usage sequence	61	43	26	38
Management of choking	70	56	34	46

**Table 4: Association Between Prior BLS Training and Knowledge Level**

BLS Training Status	Adequate Knowledge (%)	Inadequate Knowledge (%)	p-value
Trained (n=159)	71.6	28.4	<0.001
Not Trained (n=241)	36.9	63.1	

*Chi-square test applied*

- The comparison of BLS knowledge among different healthcare groups revealed that doctors had significantly higher awareness levels compared to students. Medical students performed better than nursing and dental students. Prior exposure to formal BLS training was strongly associated with higher knowledge scores ( $p < 0.001$ ). Major deficiencies were noted in knowledge regarding compression depth, AED usage, and choking management.

## DISCUSSION

The findings of the present study reveal moderate awareness of BLS among doctors and medical students, whereas dental and nursing students demonstrated comparatively inadequate knowledge. Similar trends have been reported in previous Indian and international studies, highlighting insufficient structured and repeated BLS training<sup>(3,4)</sup>

Doctors exhibited better knowledge levels, likely due to greater clinical exposure; however, significant gaps were still identified. This is consistent with studies showing that even practicing healthcare professionals may lack adequate retention of BLS knowledge over time<sup>(5,6)</sup>

The results emphasize the need for continuous medical education, periodic re-certification, and hands-on training programs. Incorporation of simulation-based learning and structured training modules has been shown to significantly enhance both knowledge and practical skills in BLS<sup>(7,8)</sup>

## CONCLUSION

Awareness and knowledge of Basic Life Support among healthcare students and professionals are suboptimal, particularly among dental and nursing students. Regular, mandatory BLS training programs with hands-on practice should be implemented across all healthcare disciplines to enhance emergency preparedness and patient outcomes.

## Recommendations

- Mandatory BLS certification at entry and exit levels of healthcare courses
- Annual refresher training programs
- Integration of simulation-based learning
- Institutional emergency drills

## Limitations

- Single-center study
- Knowledge assessment without skill evaluation
- Self-reported questionnaire may introduce bias

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