

Healthcare Interns' Attitudes and Knowledge of Emergency Medical Services and Basic Life Support

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Abstract

Background: Cardiac arrest remains a leading cause of death worldwide, and early intervention through Basic Life Support (BLS) plays a critical role in reducing mortality and complications. Healthcare professionals are expected to have comprehensive knowledge and skills in BLS, yet studies show significant variation in their awareness and attitudes towards it. In Saudi Arabia, research indicates that while healthcare professionals exhibit a positive attitude towards BLS training, their knowledge is often insufficient. This study aims to evaluate the knowledge, awareness, and attitudes regarding BLS and emergency medical services among healthcare interns at university hospitals. **Methods:** This study was conducted, involving 1000 healthcare interns from faculties of Medicine, Dentistry, Nursing, and Pharmacy. Participants were selected from universities representing different regions of Saudi Arabia. A structured questionnaire, developed according to the American Heart Association guidelines, assessed demographic information, awareness, attitudes, and knowledge regarding BLS. Data were analyzed using SPSS software, and statistical significance was tested using two-tailed tests. **Results:** Of the 1000 participants, 700 completed the survey, with 642 valid responses. The average age of participants was 24.67 years. Results showed that participants had average awareness and below-average knowledge of BLS. Significant differences were found in awareness scores across faculties ($P < 0.01$), and responses regarding attitudes towards BLS training varied significantly by faculty group ($P < 0.001$). A considerable number of interns had never received BLS training, despite a generally positive attitude toward its importance. **Conclusion:** Healthcare interns displayed adequate awareness but insufficient knowledge of BLS, with a favorable attitude toward receiving training. This highlights a gap in training and the need for integrating regular BLS education into the curricula of healthcare faculties. Ensuring continuous updates and practical training will enhance the preparedness of future healthcare professionals in managing cardiac emergencies.

Introduction

Cardiac arrest remains a primary contributor to mortality globally. Basic life support (BLS) providers play a crucial role in early intervention, significantly reducing associated risks of death and complications. Over time, BLS training programs have undergone substantial modifications to enhance their accessibility and effectiveness for the general population. BLS is an integral component of cardiopulmonary resuscitation (CPR), focusing on maintaining effective ventilation and circulation during cardiac or respiratory emergencies (1).

Having sufficient knowledge and awareness about BLS and CPR is critical to enable individuals to perform essential life-saving measures during emergencies (2, 3). Healthcare professionals, in particular, are expected to possess comprehensive BLS knowledge and skills, as they frequently encounter emergencies in their practice (4). From the outset of their training, healthcare providers should be equipped with the confidence and competence to respond effectively. In the United States, BLS training has been recommended for all healthcare providers since 1966 (5), with special emphasis on those involved in resuscitation efforts (6).

However, surveys conducted worldwide reveal significant variation in healthcare professionals' knowledge and attitudes toward BLS. While the demand for BLS courses is growing in developed nations, training in developing and underdeveloped regions remains inconsistent. For instance, a hospital-based survey in Nepal demonstrated that medical and paramedical staff lacked sufficient knowledge of CPR and BLS, with only 9 out of 121 participants correctly answering more than 11 of 15 questions (7). Similarly, a study by Vinej et al., which assessed dental interns in India, highlighted a substantial deficiency in knowledge about managing medical emergencies, with 39.89% of respondents scoring below average in BLS knowledge (8).

Studies have also shown that healthcare professionals in Saudi Arabia generally have low levels of BLS knowledge but display a positive attitude toward training. A survey by Al Mesned et al. revealed inadequate BLS knowledge among healthcare students and providers, emphasizing the need for improvement (9). Another study by Alotaibi et al. reported insufficient knowledge of BLS among dental students and faculty, though their attitude towards acquiring training was encouraging (10). Similarly, research conducted among healthcare students at a women's university concluded that knowledge and awareness about BLS were limited, yet attitudes towards learning it were favorable (11).

To date, there appears to be a gap in the literature regarding the assessment of BLS knowledge, awareness, and attitudes among healthcare professionals in certain regions. This study aims to evaluate these aspects among healthcare professionals during their internship training, addressing a critical area of public health and emergency preparedness.

Materials and Methods

This study was conducted over a span of approximately three months. A total of 1000 healthcare interns from health-related faculties, including Medicine, Dentistry, Nursing, and Pharmacy, were recruited for the research. Participants were selected from various universities, which were randomly chosen to represent different regions of the country. The assessment of BLS knowledge was carried out using a questionnaire designed in line with the latest American Heart Association guidelines (2).

The questionnaire was structured into four key sections: (1) Demographic details, including age and faculty affiliation of participants, (2) Awareness regarding emergency services, evaluated through four questions, (3) Attitudes towards BLS, assessed using four questions, and (4) Knowledge about BLS, measured with eight questions. To ensure clarity and reliability, the survey was pretested through a pilot study involving 20 interns, evenly distributed across the faculties. Revisions were made based on feedback to enhance comprehension and accuracy. The questionnaire, developed in English to align with the medium of instruction in health programs, underwent validation by experts to assess its face and content validity.

Statistical analysis was conducted using the Statistical Package for the Social Sciences (SPSS) software, version 21.0 (IBM Corporation, USA), for Windows. Hypotheses were tested using two-tailed alternatives to assess potential differences against the null hypothesis.

Results

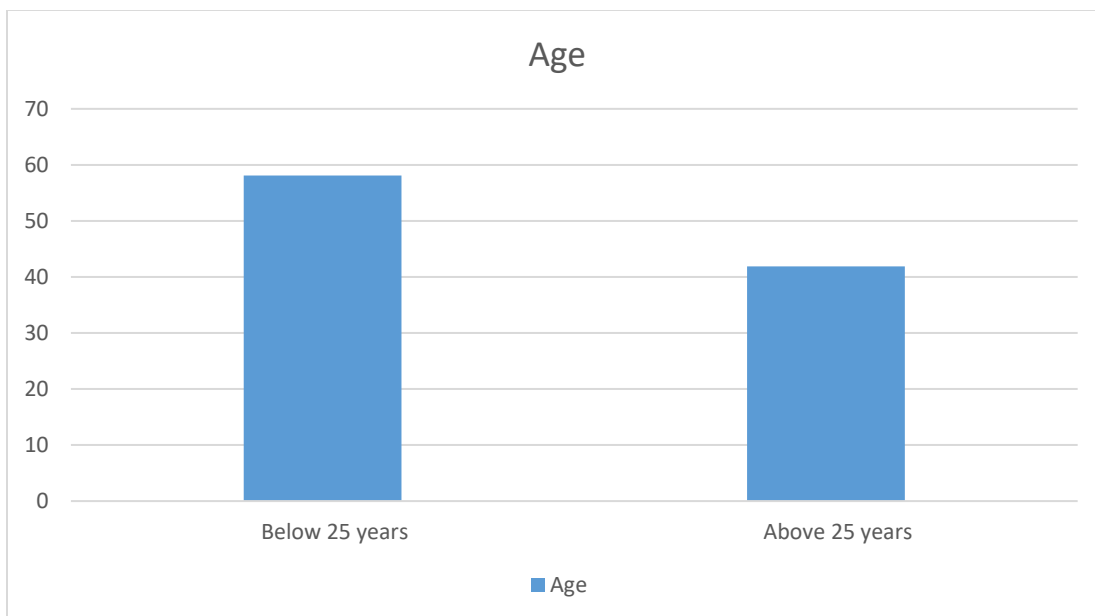
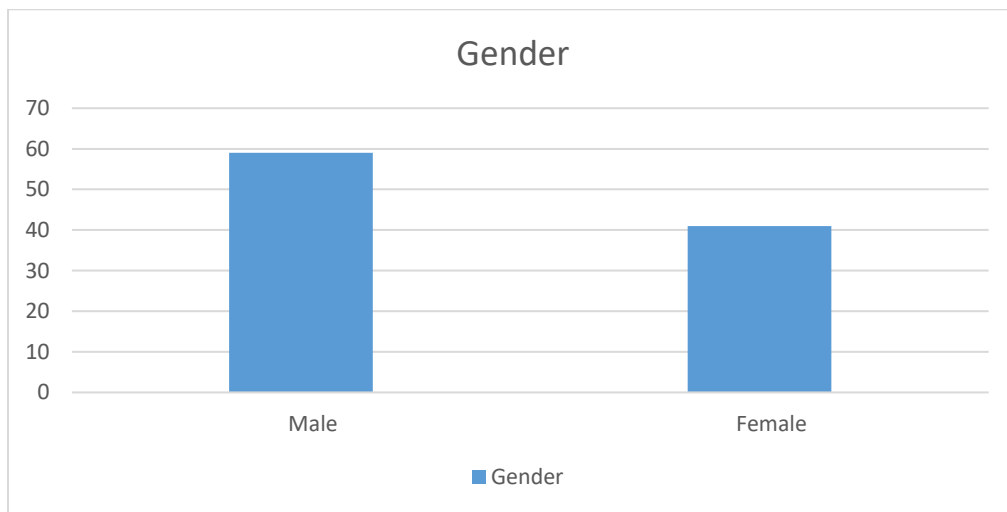
Out of the 1000 individuals invited to participate, 700 completed the survey, resulting in a response rate of 80.69%. The participants' average age was 24.67 years, with a standard deviation of 2.56. Among the respondents, (59.0%) were male, and (41.0%) were female, yielding a male-to-female ratio of 1.44:1. Detailed information on the distribution of participants by gender, age, and faculty is provided in Table 1.

Mean scores for awareness and knowledge, stratified by gender, are presented in Table 2. Awareness was scored on a scale of 0 to 4, while knowledge was assessed on a scale of 0 to 7. Statistical analysis indicated no significant differences in responses related to attitudes between male and female participants ($P > 0.05$ for all comparisons).

the mean awareness and knowledge scores by faculty affiliation. The results show significant differences in awareness scores among the four faculty groups ($P < 0.01$). The distribution of responses regarding attitudes, such as prior BLS training and reasons for not undergoing BLS training outside of college. These responses varied significantly across the faculty groups ($P < 0.001$ for both measures).

Table 1. Distribution of demographic parameters.

Parameters	Respondents %
Gender	
Male	59.0
Female	41.0
Age Group (years)	
Below 25 years	58.1
Above 25 years	41.9
Faculty	
Medicine	27.4
Dentistry	31.0
Nursing	21.0
Pharmacy	20.6



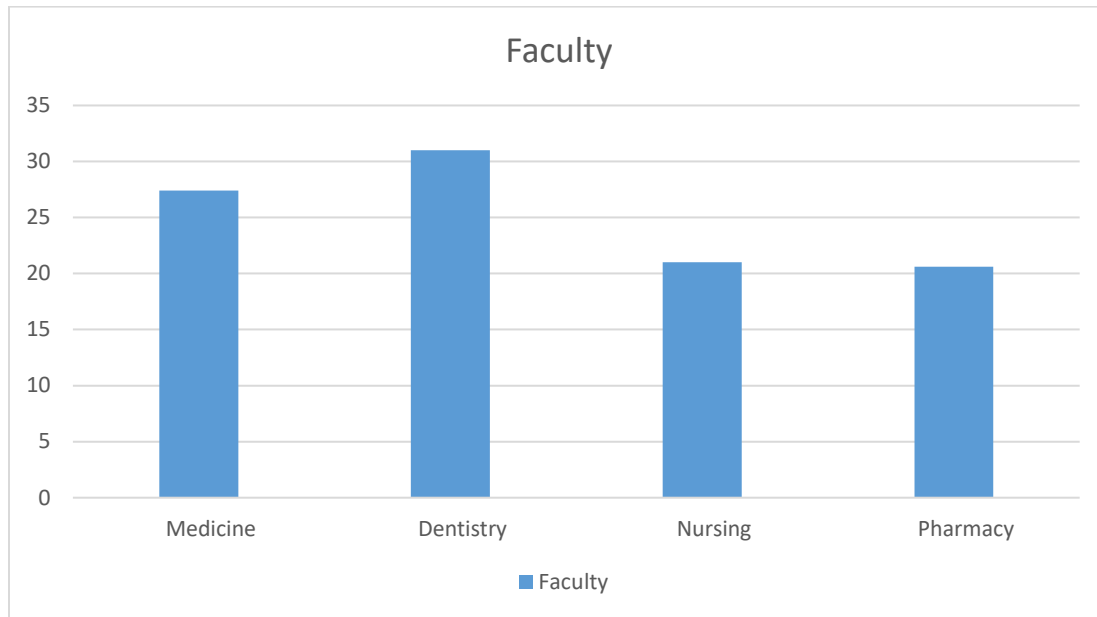


Table 2. Distribution of mean awareness and knowledge.

Scores	Male		Female		P-value
	Mean	SD	Mean	SD	
Awareness Score	2.65	1.08	2.84	0.98	0.030*
Knowledge Score	4.05	1.61	3.98	1.53	0.565 ^{NS}

*P-value<0.05 statistically significant, NS-Statistically non-significant.

Discussion

Evidence from studies indicates that road traffic accidents and sudden cardiac arrests are significant public health concerns (12, 13). Basic Life Support (BLS) is a critical intervention for managing emergencies in trauma and cardiac arrest before hospital admission. The BLS program is structured to impart essential knowledge and hands-on training to healthcare professionals, covering CPR, automated external defibrillator (AED) use, and choking relief techniques. This knowledge is vital for responding promptly and effectively to life-threatening situations. Comprehensive BLS training is crucial for healthcare providers. However, outdated knowledge and inadequate skills in this area remain a significant concern (14, 15). Thus, educational institutions must prioritize regular and structured BLS training for students and interns. To the authors' knowledge, this study is among the few that assess and compare BLS knowledge among healthcare interns across various faculties.

The mean awareness score for BLS and emergency services was 2.74 ± 1.02 on a scale of 0–4. These findings align with another study reporting a mean score of 2.94 ± 0.90 on a 0–6 scale (3). Although most participants were familiar with terms like BLS and ACLS, a large proportion (72.4%) lacked knowledge of the latest BLS guidelines. Gender-based comparisons revealed significantly higher awareness scores among female participants, consistent with findings from other studies (10, 16). Awareness also varied significantly across faculties, with medical interns scoring the highest (2.94 ± 1.03), followed by nursing (2.74 ± 1.07), pharmacy (2.64 ± 0.91), and dental interns (2.59 ± 1.11). This variation may stem from the integration of emergency medicine courses in certain curriculums.

The mean knowledge score for BLS was 4.02 ± 1.56 on a scale of 0–7, higher than a similar study from India, which reported 1.22 ± 0.91 on a 0–4 scale (3). However, another study noted that 87.9% of participants had poor BLS knowledge (17). Gender-based comparisons in this study showed no significant differences, with male participants scoring 4.05 ± 1.61 and females 3.98 ± 1.56 . Only 28.5% of participants identified the correct sequence of airway, breathing, and chest compression, which may reflect unfamiliarity with the updated sequence proposed by the American Heart Association. Similar trends were observed in other studies, where only a small percentage of participants were aware of these changes (3). Additionally, 40.8% correctly answered questions about chest compression depth, and 42% accurately identified the number of breaths per minute. Despite this, 83% of participants demonstrated knowledge of managing choking cases. Faculty-based comparisons of knowledge scores

showed no statistically significant differences, with medicine faculty scoring highest (4.13 ± 1.55) and pharmacy scoring lowest (3.88 ± 1.51).

Most participants displayed a positive attitude toward BLS training, mirroring findings from prior studies (18–20). Approximately 91% of medical and dental interns, 86% of nursing interns, and 78% of pharmacy interns had previously attended BLS training sessions. However, a portion of participants across all faculties lacked any BLS training. Investigating the reasons for this gap through interviews could provide valuable insights. Prior studies have indicated that trained individuals tend to have higher levels of knowledge and awareness compared to those without training (21). Regular refresher courses are essential to ensure that healthcare providers retain and enhance their BLS skills over time (22, 23). Most participants expressed a willingness to attend additional BLS training sessions, which could improve their knowledge and skills. Research suggests that knowledge and skills in BLS decline significantly within six months of training, underscoring the need for periodic updates (15).

When asked about incorporating BLS training into their curricula, 60–70% of participants supported this idea. Studies have shown that internal training programs conducted within academic institutions yield better results compared to external training sessions (17). Experts have also emphasized the importance of embedding BLS training into undergraduate programs to provide early exposure to these critical skills (24, 25).

Time constraints due to demanding schedules were a common reason cited by participants for not attending BLS training. About one-third of participants were unsure why they had not undergone training. Some pointed to the high costs of courses, while others felt no pressing need for training. Between 35–42% of participants self-rated their BLS knowledge as average, with 10–15% acknowledging poor knowledge. Although self-reported knowledge was moderately positive, 72% lacked familiarity with the latest BLS guidelines, and 71% did not know the correct resuscitation sequence. These results align with previous research, where participants demonstrated limited knowledge despite high self-assessment scores (3). One limitation of this study is its focus on knowledge assessment through questionnaires, rather than evaluating practical BLS skills. Future research should address this gap by exploring the practical competencies of healthcare students and workers.

Conclusion

This study highlights that healthcare interns possess average awareness and below-average knowledge of BLS, despite having a positive attitude toward training. A considerable number of participants have never received BLS training, reflecting the need to address barriers to participation. Integrating BLS training into the curriculum for all healthcare faculties and offering regular updates is strongly recommended to enhance knowledge retention and skill proficiency.

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