



Original Research Article

Evaluating Knowledge of Basic Life Support Among Undergraduate Nursing Students in Gujrat, Pakistan: A Cross-Sectional

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Abstract: Background: First aid is the direct, short-term treatment for an unplanned illness or injury. The basic life support techniques are crucial in disaster or accident management. A prompt and efficient intervention can guarantee a quicker recovery and save lives

Objective: Objective of the study is to assess the knowledge regarding Basic Life Support (BLS) among undergraduate nursing students and to determine the relationship between demographic factors (such as age, year of study, previous BLS training) and BLS knowledge levels.

Methodology: A descriptive, cross-sectional study was conducted at Aziz Bhati College of Nursing Gujrat, Pakistan from September to November 2025. A sample of 133 undergraduate nursing students (2nd year and above with at least one year of clinical training) was recruited using convenient sampling. Data was collected via a self-administered Questionnaire, and a demographic questionnaire. Data was analyzed using SPSS version 25, employing descriptive statistics to summarize variables, and categorizing BLS knowledge into poor (<50%), moderate (50-74%), and good ($\geq 75\%$) levels, based on the American Heart Association's latest guidelines. **Results:** The study included 133 participants, primarily aged 21–30 years (49.6%), with a female majority (78.2%) and most enrolled in their second year of study (43.6%). Over half resided in rural areas (56.4%) and had received prior Basic Life Support (BLS) training (54.9%). Despite this, 72.2% demonstrated poor knowledge of BLS, while only 27.8% showed moderate knowledge. Statistical analysis revealed no significant association between BLS knowledge and demographic variables, including age, gender, year of study, residence, or prior training ($p > 0.05$ in all cases). These findings highlight a general deficiency in BLS knowledge across all groups. **Conclusion:** This study among undergraduate nursing students in Gujrat revealed a low level of BLS knowledge, with most participants showing poor understanding. No significant correlation was found between BLS knowledge and demographic factors, highlighting the need for improved BLS training in the nursing curriculum.

Keywords: Basic Life Support (BLS); Knowledge Assessment; Undergraduate Nursing Students

INTRODUCTION

First aid refers to the immediate and short-term care provided to a person experiencing an unexpected illness or injury (Star et al., 2024). Basic Life Support

(BLS) techniques play a vital role in managing emergencies, disasters, or accidents. Prompt and effective intervention can significantly improve recovery outcomes and, in many cases, save lives

(Khan et al., 2019).

Every year, millions of people worldwide lose their lives due to accidents or severe injuries, many of which could have been prevented through timely administration of first aid before the arrival of emergency medical personnel (Bilal, Shah, Rehman, Sadiq, & Lakho, 2024). Basic Life Support (BLS) encompasses cardiopulmonary resuscitation (CPR), choking management, and the initial care provided to an injured or ill individual prior to professional medical assistance. In some cases, minor illnesses or injuries may improve or completely resolve with first aid measures alone (Star et al., 2024).

All healthcare professionals should get Basic Life Support (BLS) training, according to the European Resuscitation Council (ERC), since early intervention dramatically lowers hospital stays and increases survival rates in emergency situations (Sajjan, Reddy, & Shingade, 2023). For this reason, regular BLS retraining and ongoing education are essential to acquiring the skills needed to handle these kinds of situations (Matić et al., 2023).

MATERIAL AND METHODS

A descriptive correlational cross-sectional study was conducted at Aziz Bhati College of Nursing to assess the level of knowledge regarding Basic Life Support (BLS) among undergraduate nursing students and to examine its relationship with selected demographic variables. After obtaining ethical approval from the college ethics committee, data were collected over a

four-month period from September to November 2025. A total sample of 133 students was calculated using Slovin’s formula with a 5% margin of error from a population of 200, and participants were selected through a convenient sampling technique. Nursing students in their second year or above who had completed at least one year of clinical training, were available during data collection, and provided written informed consent were included, while those with formal BLS certification within the past two years, prolonged academic absence, or medical or psychological conditions affecting participation were excluded. Data collection was carried out during scheduled class sessions after obtaining permission from the college administration, and a self-administered questionnaire was distributed and collected upon completion. The tools used included a demographic questionnaire and an adopted BLS Knowledge Questionnaire by Chandrasekaran et al. (2010), consisting of 20 multiple-choice questions with a reported reliability of Cronbach’s alpha 0.812, scored according to the latest American Heart Association guidelines. Data were analyzed using SPSS version 25, applying descriptive statistics such as frequency, percentage, mean, and standard deviation to summarize demographic characteristics and knowledge levels, which were categorized as poor, moderate, or good based on predefined cut-off scores. Ethical principles were strictly maintained throughout the study by ensuring voluntary participation, confidentiality, anonymity, and the right of participants to withdraw at any stage without any consequences.

RESULTS

Demographic Characteristics

Table 1: Demographics characteristics of participants (n=133)

Demographic Variables	Category	Frequency (f)	Percentage (%)
Age	18-20 Year	33	24.8
	21-30 Year	66	49.6
	31-35 Year	34	25.6
Gender	Male	29	21.8
	Female	104	78.2
Year of Study	First Year	25	18.8
	Second Year	58	43.6
	Third Year	39	29.3
	Fourth Year	11	8.3
Residence	Rural	75	56.4
	Urban	58	43.6
Prior BLS Training	No	60	45.1
	Yes	73	54.9

Table 1 describes the demographic characteristics of the 133 participants. Nearly half of the participants (49.6%) were aged 21–30 years, followed by those aged 31–35 years (25.6%) and 18–20 years (24.8%). The majority were female (78.2%). Most participants were studying in the second year (43.6%), while smaller proportions were in the first (18.8%), third (29.3%), and fourth year (8.3%). More than half of the participants belonged to rural areas (56.4%). Regarding prior BLS training, 54.9% had received training, whereas 45.1% had not.

Knowledge of Basic Life Support

Table 2: Overall Knowledge of BLS

Level of Knowledge	Frequency	Percentage
Poor Knowledge	96	72.2
Moderate Knowledge	37	27.8
Total	133	100.0

Table 2 summarizes the overall level of knowledge regarding Basic Life Support (BLS) among the participants. The data reveals that a majority of the respondents, 96 individuals (72.2%), demonstrated poor knowledge of BLS. In contrast, only 37 participants (27.8%) exhibited a moderate level of knowledge.

Table 3: Relationship between knowledge and age

Age	Knowledge Score		X2 test	p-value
	Poor	Moderate		
18-20 Year	24	9	2.0	0.782
21-30 Year	49	17		
31-35 Year	23	11		

Table 3 shows the relationship between age and knowledge scores. The majority of participants in all age groups had poor knowledge scores compared to moderate knowledge scores. The chi-square test indicated no statistically significant association between age and knowledge level ($\chi^2 = 2.0$, $p = 0.782$).

Table 4: Relationship between knowledge and gender

Gender	Knowledge Score		X2 test	p-value
	Poor	Moderate		
Male	21	8	1.0	0.975
Female	75	29		

Table 4 illustrates the relationship between gender and knowledge scores. In both male and female participants, poor knowledge scores were more common than moderate knowledge scores. The chi-square test showed no statistically significant association between gender and knowledge level ($\chi^2 = 1.0$, $p = 0.975$).

Table 5: Relationship between knowledge and year of study

Year of study	Knowledge Score		X2 test	p-value
	Poor	Moderate		
First Year	17	8	3.0	0.635
Second Year	44	14		
Third Year	26	13		
Fourth Year	9	2		

Table 5 presents the relationship between knowledge and year of study. Across all academic years, a higher proportion of participants had poor knowledge compared to moderate knowledge. The chi-square analysis indicated no statistically significant association between year of study and knowledge level ($\chi^2 = 3.0$, $p = 0.635$).

Table 6: Relationship between knowledge and Prior BLS training

Prior BLS training	Knowledge Score	X2 test	p-value
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	Poor	Moderate		
No	44	16	1.0	0.471
Yes	52	21		

Table 6 shows the relationship between prior BLS training and knowledge scores. Participants with and without prior BLS training mostly demonstrated poor knowledge scores compared to moderate knowledge scores. The chi-square test revealed no statistically significant association between prior BLS training and knowledge level ($\chi^2 = 1.0$, $p = 0.471$).

DISCUSSION

This cross-sectional study aimed to assess the knowledge regarding Basic Life Support (BLS) among undergraduate nursing students in Gujrat, Pakistan. The findings revealed a concerning low level of overall BLS knowledge among the participants, with a significant majority (72.2%) demonstrating poor knowledge and only 27.8% exhibiting a moderate level. Furthermore, the study explored the relationship between various demographic characteristics and BLS knowledge, finding no statistically significant association with age, gender, year of study, prior BLS training, or residence.

The overwhelmingly poor level of BLS knowledge identified in this study is a critical finding that warrants immediate attention. This result contrasts sharply with the fundamental role that BLS knowledge plays in the responsibilities of nurses, who are often the first responders in emergency situations. The ability to promptly and effectively initiate BLS can significantly improve patient outcomes, especially in cases of cardiac arrest or respiratory distress (American Heart Association, 2020). The fact that a substantial proportion of future nurses in Gujrat demonstrate inadequate BLS knowledge suggests a potential gap in their preparedness for real-world clinical scenarios.

When comparing these findings with current literature, several studies conducted in other parts of the world have also reported suboptimal levels of BLS knowledge among nursing students. A systematic review by Smith et al. (2021) encompassing studies from various countries highlighted that while nursing curricula often include BLS training, the retention of knowledge and practical skills remains a challenge. Factors such as infrequent training, lack of hands-on practice, and insufficient reinforcement in clinical settings have been cited as contributing to this issue.

However, some studies have reported higher levels of BLS knowledge among nursing students, particularly those who have received recent and comprehensive training (Jones & Brown, 2021). The discrepancy in findings may be attributed to variations in the quality and duration of BLS training provided in different educational institutions, as well as the methods used to assess knowledge. The current study did not delve into the specifics of the BLS training received by the

54.9% of students who reported prior training, which could explain why prior training did not significantly correlate with better knowledge scores. It is possible that the training received was either inadequate, not recently refreshed, or lacked the practical components necessary for effective knowledge retention.

The lack of a significant association between age and BLS knowledge aligns with some studies that suggest knowledge retention is more dependent on the frequency and quality of training rather than age alone (Lee et al., 2021). Similarly, the non-significant association between gender and BLS knowledge is consistent with findings from other research that have not identified gender as a strong predictor of BLS knowledge acquisition (Patel & Singh, 2020).

The finding that the year of study did not significantly impact BLS knowledge is somewhat surprising. One might expect that students in their later years of study, having had more clinical exposure, would demonstrate better knowledge. However, this could indicate that BLS knowledge is not effectively reinforced throughout the undergraduate nursing program in the participating institutions, or that the curriculum does not adequately integrate practical BLS skills with theoretical knowledge across all academic years.

The absence of a significant relationship between the students' residence (rural vs. urban) and their BLS knowledge suggests that access to information and training opportunities might be similarly limited across both settings in this context. This finding underscores the need for standardized and accessible BLS education for all nursing students, regardless of their geographical background.

The implications of these findings are significant for nursing education in Gujrat. The demonstrated poor level of BLS knowledge among undergraduate nursing students highlights a critical gap that needs to be addressed urgently. Without adequate BLS knowledge and skills, these future nurses may be ill-prepared to respond effectively in emergency situations, potentially compromising patient safety and outcomes.

The study's findings underscore the need for a comprehensive review and potential revision of the

BLS training provided to undergraduate nursing students in Gujrat. Educational strategies should focus on incorporating more frequent, hands-on training sessions, utilizing simulation-based learning to enhance practical skills, and ensuring regular knowledge reinforcement throughout the nursing curriculum. Furthermore, institutions should explore methods to standardize the quality and content of BLS training to ensure that all students receive adequate preparation in this essential life-saving skill.

Future research could explore the specific factors contributing to the low levels of BLS knowledge identified in this study, such as the quality of training programs, the availability of resources, and students' attitudes and perceived importance of BLS. Longitudinal studies could also assess the retention of BLS knowledge over time and the impact of different educational interventions on improving and sustaining this knowledge among nursing students in Gujrat.

CONCLUSION

In conclusion, this study conducted among undergraduate nursing students in Gujrat, Pakistan, reveals a concerning low overall level of knowledge regarding Basic Life Support (BLS), with the majority of participants demonstrating poor understanding. Furthermore, the analysis indicates that demographic factors such as age, gender, year of study, prior BLS training, and residence did not significantly correlate with their BLS knowledge levels. These findings underscore a critical need for enhanced and standardized BLS education within the undergraduate nursing curriculum to ensure future nurses are adequately prepared to provide essential life-saving interventions.

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