

ASSESSMENT OF KNOWLEDGE, ATTITUDE, AND PRACTICE TOWARD BLOOD DONATION AMONG BSN STUDENTS AT ISRA UNIVERSITY HYDERABAD

Original Article

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Conflict of Interest: None

Grant Support & Financial Support: None

Acknowledgment: Deeply appreciate my respected principal, Teachers and respondents for their moral support throughout my study.

ABSTRACT

Background: Blood donation is a critical component of healthcare, addressing chronic shortages in many developing countries. Nursing students, as future healthcare providers, are in a unique position to contribute to blood donation efforts. Despite their potential and generally positive attitudes, their actual participation remains limited. Enhancing knowledge, attitudes, and practices (KAP) among this demographic is essential for increasing their involvement and addressing global blood supply needs.

Objective: To assess the knowledge, attitudes, and practices of Bachelor of Science in Nursing (BSN) students toward blood donation.

Methods: A descriptive cross-sectional design was used to conduct the study from July to September 2024 at Isra School of Nursing, Hyderabad. Convenience sampling was employed to select 100 BSN students from all academic years (first to fourth). Data were collected using a validated questionnaire comprising socio-demographics, knowledge, attitudes, and practices. SPSS version 23 was used for statistical analysis, including frequencies, percentages, means, and standard deviations.

Results: Of the 100 participants, 89% were female, and 62% were aged 21-23 years. Academic year distribution showed 42% were in their fourth year. While 57% exhibited unsatisfactory knowledge, 67% demonstrated a positive attitude toward blood donation. Only 26% reported donating blood, yet 56% expressed willingness to participate in future donation drives. Notably, 64% had received educational sessions on blood donation.

Conclusion: The findings revealed that a substantial proportion of nursing students lacked adequate knowledge about blood donation, despite showing positive attitudes. Variations in knowledge were associated with age and academic year. Educational interventions, such as seminars and workshops, are essential to bridge these gaps, enhancing participation and advocacy for blood donation campaigns.

Keywords: Attitude, Blood Donation, Cross-Sectional Studies, Knowledge, Nursing Students, Practices, Voluntary Programs

INTRODUCTION

Blood is a critical component of human life and healthcare, and blood donation is among the most altruistic acts a person can perform. Blood transfusions are essential in modern medical practice, often serving as life-saving interventions in cases of anemia, thrombocytopenia, coagulopathies, and acute hemorrhage caused by surgery, trauma, or chemotherapy. These medical scenarios highlight the urgent need for a readily available and safe blood supply to ensure timely treatment (1). The increasing prevalence of chronic illnesses, including cancer and hematologic disorders, has further driven the demand for blood and blood products, raising concerns about meeting this growing need effectively (1, 2).

Globally, blood donation is viewed as a noble act typically carried out without monetary compensation, emphasizing the donor's voluntary intent (3). The World Health Organization (WHO) has reported that only 62 nations maintain blood supply systems entirely reliant on voluntary, unpaid donors. This dependence underscores the gap in global blood donation practices and the need for greater awareness and participation. The WHO recommends that at least 1% of a country's population donate blood annually to meet the minimum healthcare requirements, with some estimates suggesting that 34 out of every 1,000 eligible individuals must donate yearly to sustain clinical needs (5, 7). Despite these benchmarks, many developing countries face critical blood shortages, severely compromising patient care and treatment standards.

Medical students, including those in nursing programs, are strategically positioned to address this challenge. Their education and clinical exposure often provide them with a deeper understanding of the importance of blood donation and its role in saving lives. These students are not only potential blood donors but also influential advocates within their communities, capable of promoting awareness and encouraging others to participate. However, studies indicate a significant gap between knowledge, attitudes, and practices (KAP) regarding blood donation among medical students. While they often demonstrate high levels of knowledge and positive attitudes, their actual donation practices remain comparatively low (8, 9). This discrepancy may be attributed to factors such as fear of needles, misconceptions about health risks, time constraints, and a lack of motivation or awareness of the pressing need for blood donations (10, 11, 12).

The global focus on promoting voluntary and frequent blood donations, as emphasized by the 2023 World Blood Donor Day theme, "Give blood, give plasma, share life, share often," reflects the urgent need to enhance donation systems and address barriers to participation. Although nursing students are ideally suited to support these efforts due to their training and healthcare roles, this demographic has been underexplored in research, particularly regarding the practical barriers they face. Evidence suggests that fostering positive attitudes and practices among nursing students could significantly influence their peers and communities, positioning them as pivotal agents in enhancing blood donation efforts (15, 16).

This study aims to assess the knowledge, attitudes, and practices of Bachelor of Science in Nursing (BSN) students at Isra University, Hyderabad, toward blood donation. By understanding their perspectives and identifying barriers, the findings could inform strategies to promote voluntary blood donation within this key demographic, ultimately contributing to a sustainable blood supply for future healthcare demands.

METHODS

The study utilized a cross-sectional design conducted from July to September 2024 at the Isra School of Nursing, Isra University, Hyderabad, a prominent institution providing comprehensive academic and clinical training in nursing. The target population comprised undergraduate students enrolled in the Bachelor of Science in Nursing (BSN) program across all four academic years. A sample of 100 students was selected through a convenience sampling method. Inclusion criteria required participants to be enrolled in the BSN program, be present during data collection, and willingly consent to participate. Students absent during data collection or unwilling to participate were excluded. Data collection involved a validated questionnaire structured into four sections: Section A captured socio-demographic information, including age, gender, academic year, and prior experience with blood donation. Section B assessed knowledge through six questions addressing key aspects of blood donation. Section C evaluated attitudes with five questions, and Section D examined practices through four focused queries. Prior to data collection, permission was obtained from the Principal of the Isra School of Nursing. Participants were informed about the study's purpose and procedures, and both written and verbal consent were secured. The questionnaire was distributed during scheduled lecture hours, ensuring confidentiality and anonymity. No identifying information was recorded to protect participants' privacy.

Data were analyzed using SPSS version 23. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were employed to summarize demographic characteristics and responses related to knowledge, attitudes, and practices toward blood donation. Ethical clearance was obtained from the Dean of the Isra School of Nursing, and participation was entirely voluntary. Participants were informed of their right to withdraw at any point without consequences. The study adhered to ethical principles, ensuring participants' confidentiality and providing them with comprehensive information about the objectives, methodology, and potential benefits or risks associated with their participation. While the methodology was thorough, the use of convenience sampling may limit the generalizability of findings to a broader population. Additionally, potential biases could arise if certain groups, such as students absent during data collection, had differing knowledge, attitudes, or practices compared to those present. These limitations should be considered when interpreting the results.

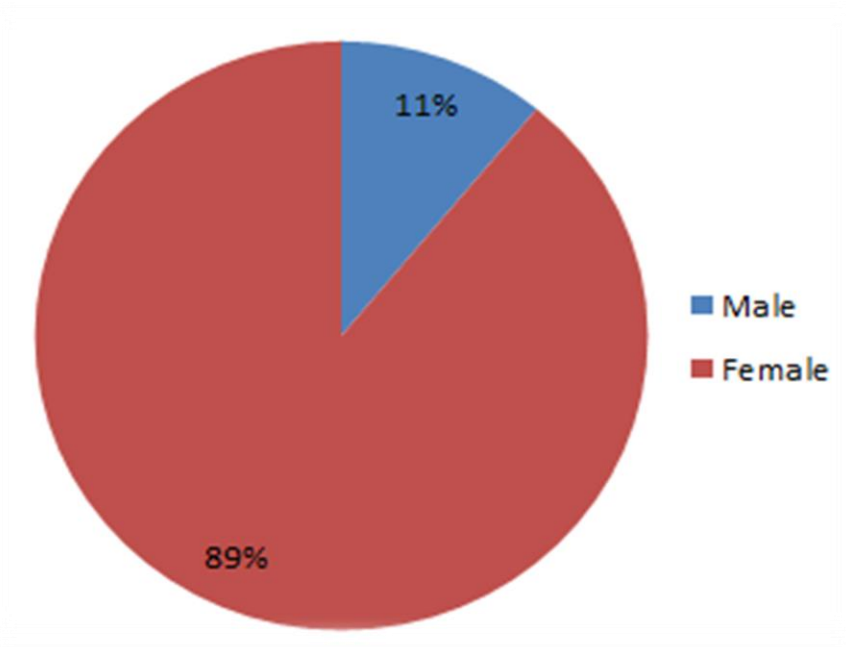
RESULTS

The results of the study revealed key insights into the demographic characteristics, knowledge, attitudes, and practices of participants regarding blood donation. Among the sample of 100 nursing students, the majority were female, accounting for 89% of the participants, while males represented 11%. Age distribution showed that the largest group of participants, 62%, were aged 21-23 years, followed by 19% aged 24-26 years, 18% aged 18-20 years, and only 1% aged above 30 years. Regarding marital status, 88% of the respondents were single, and 8% were married. Distribution across academic years indicated that 42% were fourth-year students, 24% were in their third year, 19% were first-year students, and 15% were in their second year.

In terms of knowledge about blood donation, 90% of participants correctly identified that the minimum age for donation is 18 years. However, only 59% considered blood donation a safe practice, and 57% acknowledged that certain medical conditions could preclude an individual from donating. Notably, awareness was lower regarding the frequency of donation, with only 23% aware that a healthy adult can donate blood every eight weeks. Additionally, just 27% of participants recognized the importance of matching donor and recipient blood types, while 13% were aware that O-negative blood is considered a universal donor type.

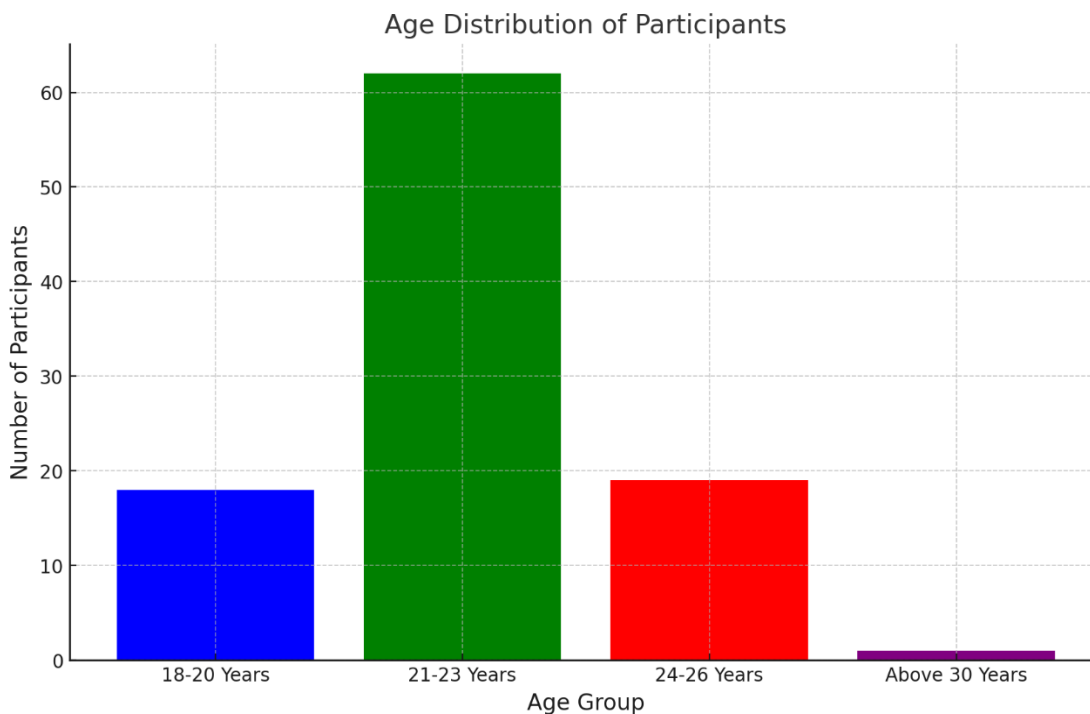
Participants' attitudes were predominantly positive. Most respondents, 67%, reported that being a health profession student encouraged them to donate blood, and 69% actively encouraged relatives and friends to donate voluntarily. Conversely, misconceptions persisted, with 19% believing that blood donation could weaken the immune system. Only 16% expressed support for financial compensation for blood donation, reflecting an altruistic attitude among the majority.

The practice of blood donation among participants was limited. Only 26% had donated blood, and of these, 20% reported a positive donation experience. Participation in promoting or organizing blood donation campaigns was also low, with only 15% reporting such involvement. However, 64% of participants indicated they had received lectures or courses about the importance of blood donation, and 56% expressed willingness to donate if a blood donation camp were organized on campus. Notably, 60% felt they had received adequate information from medical staff during their donation experiences.



The results of the participants' gender distribution are presented in Graph 1. In the sample set (N = 100), the study comprised 89 females (89.0%) and 11 males (11.0%).

Figure 1 Classification Based on Gender



This Figure presents 62% (n = 62) of the participants were between the ages of 21-23 years. 19% (n = 19) cited themselves as aged between 24 and 26 years, while 18% (n = 18) were aged 18-20 years. Additionally, only 1 participant (1.0%) was over 30 years.

Figure 2 Age Distribution

Table 1 Classification Based on Marital Status

CATEGORY	FREQUENCY	PERCENT
Single	92	92%
Married	8	8%
Total	100	100.0

Regarding the participants' marital status, the findings of this table reveal that majority of the participants, that is, 88 % (n=88) were single while only 8% (n=8) of them were married.

Table 2 Classification Based on Year of Study

CATEGORY	FREQUENCY	PERCENT
First Year	19	19%
Second Year	15	15%
Third Year	24	24%
Fourth Year	42	42%
Total	100	100.0

This table further reveals that out of the participants, 42 % (n = 42) are fourth year of study while 24 % (n = 24) are in their third year of study, 19 % (n = 19) are in their first year of study and 15 % (n = 15) in their second year of study.

Table 3 KNOWLEDGE OF THE PARTICIPANTS TOWARDS BLOOD DONATION

STATEMENTS	Yes (%)	Freq	No Freq (%)	DK (%)	Freq	Mean ± SD
Is blood donation a safe practice? Can donors get infected through blood donation?	59 (59%)		36 (36%)	5 (5%)		1.44±0.57
Is the minimum age required for a person to donate blood 18 years?	9 (9%)		44 (44%)	47 (47%)		2.58±0.79
Are there specific medical conditions that prevent someone from donating blood?	57 (57%)		26 (26%)	17 (17%)		1.62±0.80
Can a healthy adult donate blood every 8 weeks?	23 (23%)		46 (46%)	31 (31%)		2.61±0.93
Is it important to match the donor's and recipient's blood types?	27 (27%)		69 (69%)	4 (4%)		1.77±0.51
Is O-negative blood considered the universal donor?	13 (13%)		65 (65%)	22 (22%)		2.25±0.70
ATTITUDE OF THE PARTICIPANTS TOWARDS BLOOD DONATION						
Do you believe there are significant risks associated with donating blood?	22 (22%)		65 (65%)	13 (13%)		1.91±0.59
Do you believe there are benefits to donating blood?	51 (51%)		45 (45%)	4 (4%)		1.53±0.58
Do you think donating blood can weaken your immune system?	19 (19%)		33 (33%)	48 (48%)		2.31±0.79

STATEMENTS	Yes Freq (%)	No Freq (%)	DK Freq (%)	Mean ± SD
Do you think blood donation should be financially compensated?	16 (16%)	65 (65%)	19 (19%)	2.03±0.59
Does being a health profession student encourage you to donate blood?	67 (67%)	33 (33%)	-	1.36±0.52
Do you encourage your relatives and friends to donate blood voluntarily?	69 (69%)	31 (31%)	-	1.33±0.49
PRACTICE OF THE PARTICIPANTS TOWARDS BLOOD DONATION				
Have you ever donated blood?	26 (26%)	11 (11%)	63 (63%)	2.37±0.87
If yes, did you find your blood donation experience positive?	20 (20%)	61 (61%)	19 (19%)	1.99±0.63
Have you ever participated in organizing or promoting a blood donation campaign?	15 (15%)	38 (38%)	47 (47%)	2.32±0.72
Have you received lectures or courses about the importance of blood donation in your college?	64 (64%)	36 (36%)	-	1.37±.51
If your college organizes a blood donation camp on campus, would you participate and donate?	56 (56%)	44 (44%)	-	1.44±0.50
Do you feel you received adequate information from medical staff during your blood donation?	60 (60%)	27 (27%)	13 (13%)	1.55±0.76

This table summarizes the knowledge, attitudes, and practices of the participants regarding blood donation. In terms of knowledge, participants showed a high level of awareness regarding the minimum age required for blood donation, with 90% confirming that the minimum age is 18 years, resulting in a mean score of 2.58 (SD = 0.793). The lowest awareness was related to the perception of blood donation as a safe practice, with only 59% affirming its safety, reflected by a mean of 1.44 (SD = 0.574). Regarding attitudes, a significant majority, 67% felt that being a health profession student encourages blood donation, associated with a mean of 1.36 (SD = 0.522). However, only 19% believed that donating blood can weaken the immune system, resulting in a mean score of 2.31 (SD = 0.787), indicating a positive outlook among the majority. In terms of practices, only 26% (n=26) reported having ever donated blood, with a mean of 2.37 (SD = 0.872). Meanwhile, 64% indicated they had received lectures about the importance of blood donation, yielding a higher mean of 1.37 (SD = 0.505). Notably, 20% found their blood donation experience to be positive.

DISCUSSION

The findings of this study offer significant insights into the knowledge, attitudes, and practices of BSN students regarding blood donation. The results revealed a varied level of awareness, with commendable strengths in some areas and notable deficiencies in others. Among the strengths, 90% of participants correctly identified the minimum age for blood donation as 18 years, achieving a mean score of 2.58 (SD = 0.793). This aligns with previous studies highlighting the role of higher education in enhancing awareness of blood donation guidelines (17). However, only 59% perceived blood donation as a safe practice, with a mean of 1.44 (SD = 0.574), which contrasts sharply with other studies reporting higher confidence levels regarding the safety of blood donation (18, 19). This discrepancy underscores a critical gap in understanding that could hinder effective donation practices.



Attitudinally, most participants expressed positive perspectives, with 67% reporting that being a health professional student encouraged them to donate blood, reflected by a mean score of 1.36 (SD = 0.522). This finding aligns with evidence suggesting that healthcare education fosters a more proactive attitude toward blood donation (20, 21). Furthermore, only 19% believed that blood donation could weaken the immune system, yielding a mean of 2.31 (SD = 0.787). This finding is consistent with prior research indicating the persistence of misconceptions about health risks but demonstrates progress in addressing these concerns among nursing students (22). The high percentage of participants who encouraged others to donate blood reflects a commendable social responsibility, further highlighting the influence of professional training in shaping altruistic behaviors.

The practices of participants revealed a significant gap between knowledge and action. Only 26% of students reported having donated blood, with a mean score of 2.37 (SD = 0.872), a rate considerably lower than that observed in other populations of nursing students (23). This gap indicates that knowledge and positive attitudes are not consistently translating into practice. One strength noted was that 64% of participants had received lectures or courses on the importance of blood donation, resulting in a mean of 1.37 (SD = 0.505). This reinforces the critical role of structured educational programs, as previous studies have demonstrated that targeted interventions significantly enhance blood donation rates among healthcare students (15, 24).

The study's strengths include its comprehensive assessment of knowledge, attitudes, and practices across all academic years of BSN students, providing a nuanced understanding of the factors influencing blood donation. However, limitations such as the reliance on a convenience sampling method may affect the generalizability of the findings. Additionally, the study did not explore specific barriers, such as fear of needles or time constraints, that might impede blood donation practices. These limitations suggest the need for further research to identify and address practical obstacles.

Overall, while the study highlights the positive influence of nursing education on attitudes and knowledge, it underscores a critical need for interventions that bridge the gap between awareness and practice. Educational initiatives tailored to address misconceptions, promote the safety of blood donation, and provide practical opportunities for participation could enhance both individual and systemic contributions to addressing blood shortages.

CONCLUSION

The study concluded that while nursing students demonstrated a generally positive attitude toward blood donation, their knowledge about the practice was often insufficient, revealing critical gaps. Variations in knowledge were observed based on factors such as age, academic year, and individual attitudes, highlighting areas for targeted improvement. To bridge these gaps, there is a pressing need to implement educational initiatives such as seminars and workshops that emphasize the significance and benefits of blood donation. Strengthening the knowledge base of nursing students is essential, not only to enhance their personal practices but also to empower them as advocates for blood donation within their communities.

AUTHOR CONTRIBUTIONS

AUTHOR	CONTRIBUTION
SANAM SHAFI MUHAMMAD NIZAMANI	SUBSTANTIAL CONTRIBUTION TO STUDY DESIGN, ANALYSIS, ACQUISITION OF DATA MANUSCRIPT WRITING HAS GIVEN FINAL APPROVAL OF THE VERSION TO BE PUBLISHED
NASREEN REBECCA WILSON	SUBSTANTIAL CONTRIBUTION TO STUDY DESIGN, ACQUISITION AND INTERPRETATION OF DATA CRITICAL REVIEW AND MANUSCRIPT WRITING HAS GIVEN FINAL APPROVAL OF THE VERSION TO BE PUBLISHED
ZAFARULLAH JUNEJO	SUBSTANTIAL CONTRIBUTION TO ACQUISITION AND INTERPRETATION OF DATA HAS GIVEN FINAL APPROVAL OF THE VERSION TO BE PUBLISHED
GHULAM MUJADAD	CONTRIBUTED TO DATA COLLECTION AND ANALYSIS HAS GIVEN FINAL APPROVAL OF THE VERSION TO BE PUBLISHED
KIRAN WARIS ALI	CONTRIBUTED TO STUDY CONCEPT AND DATA COLLECTION HAS GIVEN FINAL APPROVAL OF THE VERSION TO BE PUBLISHED
LATTA HAZARI MAL	WRITING - REVIEW & EDITING, ASSISTANCE WITH DATA CURATION

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