Indian Journal of Holistic Nursing
Volume 15, Issue 3 - 2024, Pg. No. 9-17
Peer Reviewed & Open Access Journal

Research Article

Knowledge and Attitude of Adolescent Students Regarding Voluntary Blood Donation: Impact of an Awareness Programme (J& K, India)

Huzafa Hamid[1], Nikita Sharma[2], Aisha Akhter[3], Suby Annu[4], Munira Kachroo[5], Insha Nazir[6], Snober Farooq[7], Jamsheed Ahmad wani[8], Neeha Falak[9], Bisma Jaileel[10], Seerat Ismail[11], Riffat Hijazi[12], Nishata Nazir[13]

[1,2,6-13]M Sc Nursing Student, [3]Assistant Professor & Guide, [4]Tutor & Co-Guide, [5]Principal & Professor, Mader-e-Meharban Institute of Nursing Sciences and Research, SKIMS, Soura.
DOI: https://doi.org/10.24321/2348.2133.202405

I N F O

Corresponding Author:
Huzafa Hamid, Mader-e-Meharban Institute of Nursing Sciences and Research, SKIMS, Soura.
E-mail Id:
haifawani22@gmail.com
How to cite this article:
Hamid H, Akhter A, Annu S, Kachroo M, Sharma N, Nazir I, Farooq S, Wani J A, Falak N, Jaileel B, Ismail S, Hijazi R, Nazir N. Knowledge and Attitude of Adolescent Students Regarding Voluntary Blood Donation: Impact of An Awareness Programme (J& K, India). Ind J Holist Nurs. 2024;15(3):9-17.

Date of Submission: 2024-05-20
Date of Acceptance: 2024-06-10

A B S T R A C T

Background: Millions of people require blood donations each year for various medical needs, including accidents, surgeries, and conditions like sickle cell anemia. The demand for safe blood is rising globally, making blood donation crucial for healthcare. This study aimed to assess adolescent students' knowledge and attitudes toward voluntary blood donation to promote awareness.

Methodology: A pre-experimental one-group pre-test/post-test design was conducted with 60 adolescent students selected through purposive sampling at Boys Higher Secondary School Soura, Srinagar. A self-structured questionnaire and a 3-point Likert scale assessed participants' knowledge and attitudes on blood donation.

Results: In the pre-test, 88.3% of participants had inadequate knowledge, 11.7% had moderate knowledge, and none had adequate knowledge. After the intervention, 91.7% had adequate knowledge, 8.3% had moderate knowledge, and none had inadequate knowledge. Regarding attitude, 88.3% initially held a negative attitude, 11.7% were neutral, and none were positive. In the post-test, 78.3% had a positive attitude, 21.7% were neutral, and none held a negative attitude.

Conclusion: The study concluded that adolescents initially had low knowledge and negative attitudes about blood donation, likely due to limited exposure and education. Post-intervention results showed significant improvement in both knowledge and attitude, indicating the effectiveness of the awareness program. 4o

Keywords: Knowledge, Attitude, Voluntary Blood Donation, Awareness Programme, Adolescent Students

Introduction

Availability of safe blood and blood products is a critical aspect in improving the general health care of the population. Blood donation saves millions of lives each year, but adequate and safe blood supply is demanding challenge in developing countries like India. Hence, World Health Organization (WHO) adopted a policy aimed at 100% voluntary non-remunerated blood procurement by the year 2020.[1]

Today in the developed world, majority of blood donations are done by unpaid volunteers who donate blood for a community supply. In some countries, established supplies are limited and donors usually give blood when family or friends need blood transfusion (directed donation). Despite the many reasons that people donate, not enough potential donors are actively doing so. donate. In India, blood donations are facilitated by several organizations and hospitals by organizing blood donation camps. Donors can also visit blood banks in hospitals to donate blood or donate directly to a receiver.[2]

About 118.54 million blood donations are collected worldwide. Out of these,106.1 million were whole blood donations and 12.4 million were apheresis donations. These donations were collected from all types of blood donors: voluntary non-remunerated, family/replacement & paid donors.[3]

In 2021, blood transfusion services supported by National AIDS control Organization in India collected a total of approximately 5.83 million blood units. This reflected a decrease from nearly 7.3 million units in the previous year (2019-2020). As per WHO Norms, it is estimated that blood donation by 1% of the population is generally the minimum needed to meet a nation's most basic requirements for blood.[4]

As per National Blood Transfusion council India, under the Ministry of Health and Family Welfare guidelines, people aged between 18 and 65 years with a body weight of over 45kg are allowed to donate blood in India. To be eligible for blood donation blood donor must have haemoglobin level 12.5g/dl – 14g/dl for females and 13g/dl – 16g/dl for males.[5]

There is a lot of hesitation among people to donate blood because of myths and misconceptions regarding fear of needle and pain, physical weakness, sickness, and a risk for infection, fear of possible ill effects. Other causes of hesitation can be ignorance regarding the same due to the prevalent illiteracy. [6]

Need For The Study

Every year Millions of people rely on the generosity of another person to receive blood. The need for safe blood is universal. The need for blood and blood products is rising in all parts of the world. Every year, road traffic accidents cause 1.3 million deaths globally and disabling between 20 million and 50 million people. About 90% of the deaths from road traffic accidents occur in developing countries.[7]

According to WHO global blood safety, around 103 million blood donations are made annually by all types of blood donors; 50% of all donations are collected in developed countries, home to 18% of world's population. The donation rates are still less than 1% of the population in 75 countries and all of them are developing and transitional countries (WHO, 2014).[8]

As per statistics, around 11 million blood donations are collected in India every year against the required 13.5 million for 1.35 billion population in the country (1%), leaving a gap of nearly 2 million.[17] As per government data 34 per 1,000 eligible people must donate blood at least once in a year to fulfil the estimated clinical demand for blood in India.[9]

As per statistics, Jammu & Kashmir collected 64,658 units of blood in the year 2020-2021, of which 35,611 units were collected through voluntary blood donation, accounting for 55% of the total.[10]

In the year 2017-2018 total blood units collected were 0.72lakh, 0.74lakh in 2018-2019, 0.76lakh in 2019-2020.[11]

According to central Drugs Standard control Organization (CDSCO), there were 31 blood banks in Jammu and Kashmir in 2015. During January 2015-2016, the annual blood collection from all the blood banks reported was 83,499 of which 57% units were through voluntary blood donation and remaining were from replacement donations. According to WHO, it is estimated that blood donation by 1% of the population can meet a nation's most basic requirements for blood (WHO, 2016), which means that Jammu and Kashmir with a population of 12,541,302, currently needs around 125,413 units of blood.[12]

Prabu and Anbumani[13] in 2020 conducted a pre-experimental study at AMT school, Bakshi Nagar Jammu on 50 students of GNM 1st year by using purposive sampling technique, to assess knowledge regarding blood donation. The results of the study revealed the mean pre-test knowledge score was 9.72 2.11 that improved to 17.64 1.77. The mean difference between pre-test and post-test level of knowledge was 7.92. Thus, the study concluded that video-assisted teaching programme was successful in improving the knowledge of GNM 1st year students regarding blood donation.

In view of the above data, it was found that there is a high demand of blood and blood products in present era due to the increasing number of accidents and newly emerging diseases. It is more so in a place like Jammu and Kashmir where the number of emergency medical interventions

ISSN: 2348-2133
DOI: https://doi.org/10.24321/2348.2133.202405

due to accidents and surgical procedures are on the rise. The researcher during her clinical experience observed numerous cases where the need for blood was critical, yet it was not readily available, underscoring the importance of a reliable blood supply. Recognizing this urgent need, researcher was motivated to explore ways to address the growing demand by promoting awareness programme on voluntary blood donation.

Methodology

The research design used in this study was "Pre experimental One Group Pre-test, Post-test design. The primary objective of the study was to find the effectiveness of awareness programme on knowledge and attitude of adolescent students regarding voluntary blood donation. Permission was obtained from the concerned authorities to conduct the final study. Ethical clearance was obtained from Institutional Ethical Committee (IEC) to conduct the study on 60 adolescent students of 11th and 12th standard selected via purposive sampling technique.

A self-structured questionnaire and 3- point Likert scale was administered to adolescent students at Boys Higher Secondary School Soura as a pre-test measure on 29th April 2024 and intervention was given in the form of awareness programme followed by post-test on 7th day by using the same tool. Assessment of knowledge scores was categorised into various levels based on the scale developed by researcher Pandiyan[14], in his study.

Assessment of attitude scores was categorised into various levels based on the scale developed by Singh15 in her study.

Table 1. Scoring Criteria for Knowledge

Knowledge Score	Percentage (% age)	knowledge Level
0 – 17	≤50	Inadequate
18 – 25	51- 75	Moderately Adequate
26 – 34	>75	Adequate

Maximum score = 34, Minimum score = 0

Table 2. Scoring Criteria for Attitude

Attitude score	Score percentage (% age)	Level Of Attitude
Less than 21	≤60	Negative
21-28	61-80	Neutral
29-36	81-100	Positive

Maximum score = 34, Minimum score = 12

Results And Discussion

Out of 60 study subjects, maximum (56.7%) belonged to age group of 16-17 years whereas (43.3%) belonged to the age group of 18-19 years. Maximum of the study subjects (68.4%) belonged to the urban area where as (31.6%) belonged to rural areas. Higher number of study subjects (41.7%) had educational status of father as primary to high school, 28.3% as secondary education, 16.7% as illiterate and 13.3% had graduation and above. Almost equal number of fathers of study subjects had occupation as government employees (33.3%), 31.7% as private employees, 30% as Businessman and very few fathers of study subjects had occupation as any other (5%). Higher number of study subjects (48.3%) had educational status of mother as illiterate, 26.7% as primary to high school, 13.3% as secondary education and 11.7% as graduation and above. Higher number of the study subjects (51.6%) had occupation of mother as homemaker, 26.7% as private employees and 21.7% as government employees. Maximum of the study subjects (70%) belonged to nuclear family and only (30%) belonged to joint family. Majority (83.3%) of the study subjects had no information regarding voluntary blood donation, 11.7% study subjects had social media as the source of information, 5% had friends / Relatives as the source of information (Table 3).

These findings were similar to the results of the studies conducted by Bharathi[16] in 2021 and Pandiyan[14] in 2015.

Table 3.Frequency and percentage distribution of study subjects according to Demographic Variables

Variables	Categories	Frequency (f)	Percentage (%)
Age in Years	16-17 years	34	56.7%
	18-19 years	26	43.3%
Residence	Urban	41	68.4%
	Rural	19	31.6%
Education Status of father	Illiterate	10	16.7%
	Primary to high school	25	41.7%
	Secondary	17	28.3%
	Graduate and above	8	13.3%
Occupation of father	Government employee	20	33.3%
	Private employee	19	31.7%
	Businessman	18	30%
	Any other	3	5%

ISSN: 2348-2133
DOI: https://doi.org/10.24321/2348.2133.202405

Educational status of mother	Illiterate	29	48.3%
	Primary to high school	16	26.7%
	Secondary	8	13.3%
	Graduate and above	7	11.7%
Occupation of mother	Government employee	13	21.7%
	Private employee	16	26.7%
	Homemaker	31	51.6%
Type of family	Nuclear family	42	70.0%
	Joint family	18	30.0%
Source of Information	No information	50	83.3
	Social media	7	11.7%
	Friends/ Relatives	3	5%

Findings related to knowledge scores of study subjects.

on pretest knowledge score, majority of study subjects (88.3%) had inadequate knowledge, 11.7% of study subjects had moderately adequate knowledge and none had adequate knowledge whereas on post-test, majority of study subjects (91.7%) had adequate knowledge, 8.3% had moderately adequate knowledge and none had inadequate knowledge regarding voluntary blood donation as depicted in table 4 &figure 1.

The findings of present study were consistent with a pre-experimental study conducted by Upadhyay, Varghese, Parmar, Bhil, Bhiladiya, Chaudhary et al [17] (2023),

The mean post -test knowledge scores (30.37±2.755) of the study subjects regarding voluntary blood donation were significantly higher than the mean pre-test knowledge scores (13.37 ±4.029) at p<0.05 level of significance. This indicated that awareness programme was effective in enhancing the knowledge of adolescent students regarding voluntary blood donation as depicted in table 5. The findings were supported by a pre-experimental study conducted by Jose[18] (2021).

Table 4.Frequency and percentage distribution of pre- and post-test knowledge scores regarding voluntary blood donation.

n=60

Attitude Level	Attitude scores	Pre-test Attitude		Post-test Attitude	
		Frequency	Percentage (%)	Frequency	Percentage (%)
Negative Attitude	Less than 21	53	88.3%	0	0%
Neutral Attitude	21-28	7	11.7%	13	21.7%
Positive Attitude	29-36	0	0%	47	78.3%
Total		60	100%	60	100%

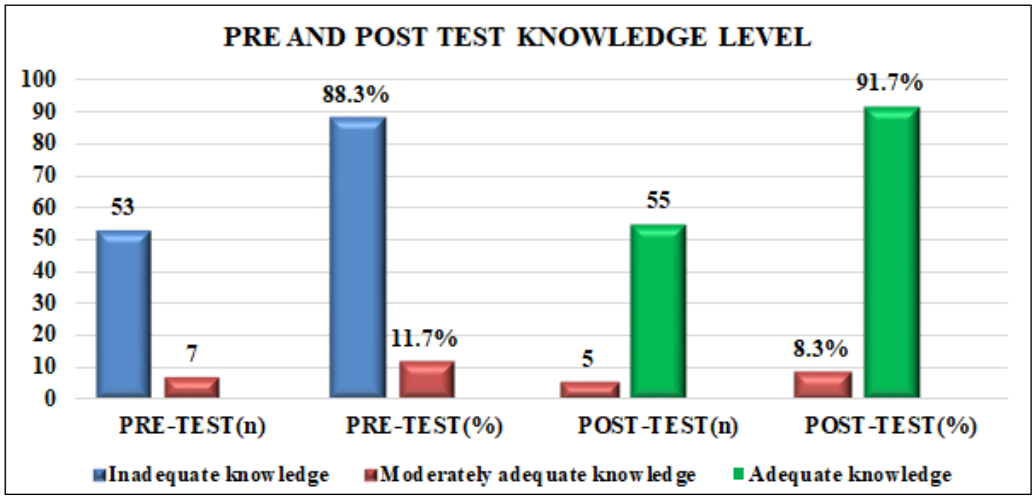

Figure 1.Bar diagram showing pre -test and post- test knowledge scores regarding voluntary blood donation

ISSN: 2348-2133
DOI: https://doi.org/10.24321/2348.2133.202405

There was statistically no significant association of pre- test knowledge scores of study subjects with their selected demographic variables like age, residence, educational status of father, occupation of father, educational status of mother, occupation of mother, type of family, source of information as depicted in table 6. The findings of the present study were supported by a study conducted by Pandiyan[14] (2015).

Findings related to attitude scores of study subjects

On pretest attitude score, majority of study subjects (88.3%) had negative attitude, 11.7% of study subjects had neutral attitude and none had positive attitude whereas on post-test, majority of study subjects (78.3%) had positive attitude, (21.7%) of study subjects had neutral attitude and none had negative attitude regarding voluntary blood donation as depicted in table 7 and figure 3. The findings of present study were consistent with a pre-experimental study conducted by Nisha, Aishwarya, Arti, Bagisha, Bharti[19] in 2023,

The mean post -test attitude scores (30.82±3.666) of the study subjects regarding voluntary blood donation were significantly higher than the mean pre-test attitude scores (16.45 ±3.442) at p<0.05 level of significance. This indicated that awareness programme was effective in improving the attitude of adolescent students regarding voluntary blood donation as depicted in table 7. The findings were supported by a pre-experimental study conducted by Jhon, Mall, Mukherjee, Chakraborty, Maji, Savy et al [20] (2023).

There was statistically no significant association of pre-test attitude scores of study subjects with their selected demographic variables like age, residence, educational status of father, occupation of father, educational status of mother, occupation of mother, type of family, source of information as depicted in table 9. The findings of the present study were supported by the study conducted by Singh and Raghunandan[15] (2022).

Table 5.Comparison between pre-test and post-test knowledge scores of study subjects regarding Voluntary blood donation

n=60

Attitude score	Mean±SD	Paired 't' test	p-value	Results
Pre-test	16.45±3.442	22.15	0.001***	significant
Post-test	30.82±3.666			

***=significant at 0.01 level

Table 6.Association of pre-test knowledge score of study subjects with their selected demographic variables

n=60

Variables	Category	Inadequate Knowledge	Moderately adequate knowledge	-			
		f	f	Total	Chi square	d f	p-value & Results
Age in Years	16-17	31	3	34	0.615	1	0.433 NS
	18-19	22	4	26			
Residence	Urban	36	5	41	0.035	1	0.851 NS
	Rural	17	2	19			
Educational status of father	Illiterate.	9	1	10	1.04	3	0.792 NS
	Primary to high school	21	4	25			
	Secondary.	16	1	17			
	Graduate and above	7	1	8			
Occupation of father	Government employee	17	3	20	0.641	3	0.887 NS
	Private employee	17	2	19			
	Businessman	16	2	18			
	Any other.	3	0	3			

ISSN: 2348-2133
DOI: https://doi.org/10.24321/2348.2133.202405

Educational status of mother	Illiterate.	26	3	29	1.931	3	0.587 NS
	Primary to high school.	13	3	16			
	Secondary.	8	0	8			
	Graduate and above.	6	1	7			
Occupation of mother	Govt employee	12	1	13	1.097	2	0.578 NS
	Private employee	13	3	16			
	Homemaker	28	3	31			
Type of Family	Nuclear family.	37	5	42	0.008	1	0.930 NS
	Joint family.	16	2	18			
Source of information	No	45	5	50	1.548	2	0.461 NS
	social media	6	1	7			
	Friends/Relatives	2	1	3			

NS= non-significant NS

Table 7.Frequency and percentage distribution of pre- and post-test attitude scores regarding voluntary blood donation

n=60

Level of Knowledge	Knowledge scores Frequency	Pre-test Knowledge		Post-test Knowledge	
		Percentage (%)	Frequency	Percentage (%)	Frequency
Inadequate	0-17	53	88.3	0	0
Moderately Adequate	18-25	7	11.7	5	8.3
Adequate	26-34	0	0	55	91.7
Total		60	100	60	100

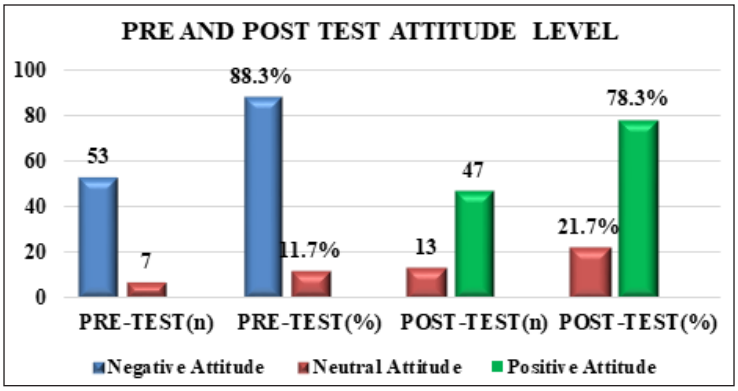

Figure 3.Bar diagram showing pre -test and post- test attitude scores regarding voluntary blood donation

Table 8.Comparison between pre-test and post-test attitude scores of study subjects regarding Voluntary blood donation

n=60

Knowledge score	Mean±SD	Paired 't' test	p-value	Results
Pre-test	13.37 ± 4.029	26.98	0.001***	significant
Post-test	30.37±2.755			

***=significant at 0.01 level

ISSN: 2348-2133
DOI: https://doi.org/10.24321/2348.2133.202405

Table 9.Association of pre-test attitude score of study subjects with their selected demographic variables

n=60

Variables	Category	Negative Attitude	Neutral Attitude	Total			
		f	f	-	Chi square	d f	p-value & Results
Age in Years	16-17	30	4	34	0.001	1	0.978 NS
	18-19	23	3	26			
Residence	Urban	35	6	41	1.106	1	0.293 NS
	Rural	18	1	19			
Educational status of father	Illiterate.	8	2	10	1.234	3	0.745 NS
	Primary to high school	22	3	25			
	Secondary.	16	1	17			
	Graduate and above	7	1	8			
Occupation of father	Government employee	18	2	20	6.784	3	0.079 NS
	Private employee	14	5	19			
	Businessman	18	0	18			
	Any other.	3	0	3			
Educational status of mother	Illiterate.	24	5	29	2.866	3	0.413 NS
	Primary to high school.	14	2	16			
	Secondary.	8	0	8			
	Graduate and above.	7	0	7			
Occupation of mother	Govt employee	13	0	13	7.41	2	0.025 NS
	Private employee	16	0	16			
	Homemaker	24	7	31			
Type of Family	Nuclear family.	37	5	42	0.008	1	0.930 NS
	Joint family.	16	2	18			
Source of information	No	44	6	50	0.448	2	0.799 NS
	social media	6	1	7			
	Friends/Relatives	3	0	3			

NS= Non-significant

Conclusion

On Pre-test, majority of the study subjects had inadequate knowledge and negative attitude regarding voluntary blood donation. So, there was need to educate them regarding voluntary blood donation. On Post –test, majority of the study subjects had adequate knowledge and positive attitude regarding voluntary blood donation after administration of awareness programme which was evident from post-test score. Also, there was no association of pre-test knowledge and attitude scores with selected demographic variables.

Sources of Funding: None

Conflicts of Interest: None

References

1. Verma, Rk S. Voluntary blood donation: Attitude and practice among Indian adults. Journal of Community Medicine and Health Education [Internet]. 2016 [cited 2023 Feb 29];6(3):1–6. Available from: https://www.omicsonline.org/open-access/voluntary-blood-donation-attitude-and-practice-among-indian-adults-2161-0711-1000436.php?aid=74440
2. Choudhary M. To assess the knowledge and attitude regarding blood donation among the general public in a selected hospital in Delhi. Journal of Com-

munity Public Health Nursing [Internet]. 2022 [cited 2023 Feb 29];8(351). Available from: http://dx.doi.org/10.4172/2471-9846.1000351
3. Bottom of Form World Health Organization. Global status report on blood safety and availability 2021 [Internet]. [cited 2023 Feb 25]. Available from: https://www.who.int/publications/i/item/9789240051683.
4. India: Blood unit collection 2021 [Internet]. Statista. [cited 2023 Feb 26]. Available from: https://www.statista.com/statistics/1288352/india-blood-unit-collection/
5. What are the criteria to be a blood donor? | Blood donor eligibility criteria [Internet]. Kauvery Hospital; 2021 [cited 2023 Feb 26]. Available from: https://kauveryhospital.com/blog/family-and-general-medicine/what-are-the-criteria-to-be-a-blood-donor/
6. Baig M, Habib H, Haji A, Alsharief F, Noor A, Makki R. Knowledge, misconceptions and motivations towards blood donation among university students in Saudi Arabia. Pakistan Journal of Medical Sciences. 2013[cited 2023 Mar 01];29(6):1295-9. Doi: 10.12669/pjms.296.4137. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3905364/
7. More voluntary blood donations essential [Internet]. Who.int. [cited 2023 Feb 27]. Available from: https://www.who.int/news/item/14-06-2012-more-voluntary-blood-donations-essential
8. Siromani U, Thasian T, Isaac R, Mammen JJ. Where do we stand towards 100% voluntary blood donation – are we really moving towards achieving the goal? International Journal of Emergency Mental Health. 2015 [cited 2023 Feb 23];17(3):607-608. Doi: 10.4172/1522-4821.1000e230.Availablefrom: https://www.researchgate.net/publication/283009513_Where_do_we_Stand_Towards_100_Voluntary_Blood_Donation__are_we_Really_Moving_Towards_Achieving_the_Goal
9. Ayu K. World Blood Donors Day 2022: Severe shortage of blood in India [Internet]. Media India Group. 2022 [cited 2024 Feb 27]. Available from: https://mediaindia.eu/society/world-blood-donors-day-2022/
10. Sankalak booklet third ed. 2021 pdf [Internet]. 2021 [cited 2023 Feb 27]. Available from: https://naco.gov.in/sites/default/files/Sankalak_Booklet_2021_Third_Edition.pdf
11. Sankalak: Status of National AIDS response, 2nd ed. 2020 [Internet]. 2020 [cited 2023 Feb 27]. Available from: https://naco.gov.in/sites/default/files/Sankalak%20Status%20of%20National%20AIDS%20Response,%20Second%20Edition%20(2020).pdf
12. A Report on the "Assessment of blood banks in Jammu and Kashmir, India" [Internet]. National AIDS Control Organization (NACO) and National Blood Transfusion Council (NBTC), Ministry of Health and Family Welfare, Government of India, in collaboration with U.S. Centers for Disease Control and Prevention (HHS/CDC); [cited 2023 Feb 28]. Available from: http://nbtc.naco.gov.in/assets/resources/reports/commonResource_1517228531.pdfTop of Form
13. Prabu IJ, Anbumani J. A study to assess the effectiveness of video-assisted teaching programme on the level of knowledge regarding blood donation among GNM 1st year students of AMT School, Jammu. International Journal of Advanced Nursing Management. 2020 [cited Mar 26];8(2):127-32. Doi:10.5958/2454-2652.2020. 00030.X. Available from: https://ijanm.com/HTMLPaper.aspx?Journal=International%20Journal%20of%20Advances%20in%20Nursing%20Management;PID=2020-8-2-5
14. Pandiyan mb. Effectiveness of structured teaching programme on knowledge of blood donation among Government Higher Secondary School Students. Pondicherry Journal of Nursing. 2015[cited 2023 mar 29];8(2):38-40. Doi: 10.5005/pjn-8-2-38.Available from: https://pjn.sbvjournals.com/abstractArticleContentBrowse/PJN/72/8/2/18678/abstractArticle/Article
15. Singh S, Singh R. Study to assess the effectiveness of Planned Teaching Program on knowledge and attitude regarding Voluntary Blood Donation among college students. International Academic Journal of Advanced Practices in Nursing. 2022 [cited 2023 Mar 28];3(1). Doi: 10.47310/iajapn. 2022.v03i01.007. Available from: https://iarconsortium.org/iajapn/85/343/
16. Bharathi AR. Teaching programme on blood donation awareness among Chennai government school students. Journal of Research in Medical and Dental Science. 2021[cited 2023 Mar 29];9(12):284-288.Available from: https://www.jrmds.in/articles/teaching-programme-on-blood-donation-awareness-among-chennai-government-school-students.pdf
17. Upadhyay R, Varghese J, Parmar R, Parmar A, Bhil V, Bhiladiya B, et al. A study to assess the effectiveness of planned teaching programme on knowledge regarding blood donation among college students at selected arts colleges Banaskantha, Gujarat. International Journal Nursing Research. 2024 [cited 2023 Mar 27];9(3):77-82. Doi:10.31690/ijnr. 2023.v09i03.013. Available from: https://www.researchgate.net/publication/374896477_
18. Jose J. A study to assess the effectiveness of planned teaching programme on knowledge regarding blood donation among late adolescent students (18-20 years) at Tagore College of Arts and Science, Chrompet, Chennai. International Journal of Creative Research Thoughts.

ISSN: 2348-2133
DOI: https://doi.org/10.24321/2348.2133.202405

2021[cited 2023 Mar 29];9(3):2320-2882. Available from: https://ijcrt.org/papers/IJCRT2103620.pdf
19. Kumari N, Aishwarya, Arti, Bagisha, Bharti. A pre-experimental study to assess the effectiveness of planned teaching programme on knowledge and attitude regarding blood donation among nursing students in Abhilashi College of Nursing, Tanda Distt. Mandi (H.P). International Journal of Scientific Research. 2023 [cited 2023 Mar 27];12(11). Doi: 10.36106/ijsr. Available From: https://www.worldwidejournals.com/international-journal-of-scientific-research-(IJSR)/fileview/
20. John TA, Mall S, Mukherjee S, Chakraborty S, Maji S, Savy SE, Das S. Knowledge and attitude regarding blood donation among students in selected colleges. IJFMR. 2023[cited 2023 Mar 27];5(5). Doi: 10.36948/ijfmr. 2023.v05i05.6095. Available from: https://www.ijfmr.com/research-paper.php?id=6095

ISSN: 2348-2133
DOI: https://doi.org/10.24321/2348.2133.202405