Effectiveness of Structured Teaching Programme (STP) on Knowledge and Attitude Towards Blood Donation among Undergraduate Students of Center of Excellence, Govt. College Sanjauli, Shimla, Himachal Pradesh

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Abstract: _Background: Blood donation is a gift of life that improves health and reduces mortality but many patients in need of blood transfusion do not have timely access to safe blood. Emergency blood emergencies occur every minute, and each patient requiring blood is an emergency, and the patient may have set back their life. One donation from one person can benefit one or more patients, as whole blood is composed of several useful components that perform specific functions in the body and in the bodies of those who receive it. Methods and Material: randomized one group pre-test post-test design was used. The sample size was 60 undergraduate students by simple random sampling technique from Center of Excellence Govt. Degree College Sanjauli, Shimla, Himachal Pradesh. Data was collected by self- structured knowledge questionnaire and self- structured attitude 3 point Likert scale. Structured Teaching Programme was administered. Results: In pre-test knowledge scores of students 51(85%) had good knowledge, 5(8.3%) students had very good knowledge and 4(6.7%) students had fair knowledge whereas in post-test knowledge scores of students 58(96.7%) had very good knowledge and 2(3.3%) students had good knowledge. In pre-test attitude score among students 52(86.7%) had moderate favorable attitude, 7(11.7%) had favorable attitude, 1(1.6%) had unfavorable attitude whereas post-test attitude score among students 59(98.3%) had favorable attitude, 1(1.7%) had moderately favorable attitude. Using paired t test knowledge (t=66.127) attitude (t=79.778) that indicate effectiveness of Structured Teaching Programme to change knowledge and attitude. Conclusion: The study finding concluded that the Structured Teaching Programme was effective in improving the knowledge and attitude towards blood donation._

Keywords: Structured Teaching Programme, Knowledge, Attitude, Blood Donation, Undergraduate students

1. Introduction

Blood donation is a voluntary procedure that can help save lives. Donation may be of whole blood, or of specific components directly (apheresis). Blood banks often participate in the collection process as well as the procedures that follow it. [1]

Donated blood is an essential component in the management of many diseases. It is the main life saving for an individual with loss of large volumes of blood from accidents, hemorrhages or surgery. Evidences showed that the annual global blood collection is 112.5 million units of blood. Need of the blood donation is 14.6 million unit. Over half of these units of blood are collected in developed countries. The blood donation rate per 1000 people in high income countries is more than fivefold compered to low- income countries (33.1 vs 4.6 donations). [2]

Now a days every year our nation requires about 5 Crore units of blood, out of which only a meagre 2.5 Crore units of blood are available. More than 38,000 blood donations are needed every day. A total of 30 million blood components are transfused each year. Young people have been at the forefront of activities and initiatives aimed at achieving safe blood supplies through voluntary, non-remunerated blood donations. Blood can save millions of lives, and young people are the hope of future of a safe blood supply in the world. Blood donation is a major concern to the society as donated blood is life saving for individuals who need it. The WHO advocates that 3%-5% of the population should donate blood every year. This would be the ideal rate for maintaining a country's stock of blood and blood products at acceptable level[4].

According to Central Drugs Standard Control Organization (CDSCO), there were 22 blood banks in Himachal Pradesh in 2015. The assessment exercise identified 20 functional blood banks across the state. Of the 20 blood banks, 14 (70%) were supported by National AIDS Control Organization, Ministry of Health and Family Welfare, Government of India and the remaining 6 (30%) were Non-NACO blood banks. Shimla (5) had the highest number of blood banks, Kangra (3), Solan (3) and Hamirpur (2), Bilaspur (1), Chamba (1), Kinnaur (1), Kullu (1), Lahual and Spiti (0), Mandi (1), Sirmour (1), Una (1).

Blood donation is a gift of life that improves health and reduces mortality but many patients in need of blood transfusion do not have timely access to safe blood. An adequate and sustainable supply of safe blood can be assured by non-remunerated voluntary and unpaid blood donors as the rate of transfusion transmissible infection is lowest among them[5]

Safe and effective blood transfusion is a vital component to improving health care delivery and preventing the spread of blood borne diseases. Blood scarcity is frequently

encountered in hospitals and is due to an imbalance between the increasing demand for safe blood and blood products on the one hand and failure to organize regular blood supply due to misconceptions, perceived harms and risks, and a lack of motivation among potential donors

A cross-sectional study in which a 519 participant. Students Are nonsmoker, Age 18-30 year in 60% didn't donate blood and 42% regular donor. Reason for not donating blood is lack of knowledge 40%, lack of opportunity 20%, harmful to health 21%, fearing needle 16% and 61% didn't know blood group. Poor knowledge and Positive attitude. Weak positive correlation between knowledge, attitude and practice .so to provide the knowledge and motivate student regarding blood donation [3]

2. Methodology

Research Design
The research design for the study was quasi experimental Randomized one group pre-test post-test design i.e. to evaluate the effectiveness of Structure Teaching Programme knowledge and attitude toward blood donation.

Research Setting
The study was conducted at center of excellence Government Degree College Sanjauli Shimla (H.P.).

Sample Size
The sample size was 60 students of center of excellence Government Degree College Sanjauli Shimla (H.P.).

Research Sampling Technique
Simple random sampling technique was used to select the students of center of excellence Government Degree College Sanjauli Shimla (H.P.).

Selection and Development of Tool
The tool will be selected and developed through Extensive review of various sources like extensive library search, internet sources and consultation with experts and guide's opinion. Tool was selected on the basis of objectives of the study. Self –Structured Questionnaire and Likert Scale was used to evaluate the effectiveness of the structured teaching programme toward blood donation among students of center of excellence Government Degree College Sanjauli Shimla (H.P.).

Ethical Consideration
The pilot study and main study was conducted after the approval from the principal, research and ethical committee of Sister Nivedita College of Nursing, IGMC, Shimla. Written permission was obtained from the principal of Center of excellence Govt. Degree College Sanjauli, Shimla (H.P.). Written and verbal consent were taken from the students The purpose and details of the study were explained to the students.

Data collection procedure and analysis
Collection of data was done is two phases i.e. pre-test and posttest. Verbal and written consent was taken from the study subjects. Pretest was conducted on 15/05/2024 by using Self–Structured Questionnaire and Likert Scale. Structured

Teaching Programme was administered on 16/05/2024. After one weak 23/05/2025 post test was conducted by using Structured Questionnaire and Likert Scale. After collection of data researcher was thankful to the study subjects and concerned authority for full cooperation. According to the objectives and hypothesis of the study and opinion of the expert, it was planned to organize, tabulate and interpret the data by using both descriptive and inferential statistics.

3. Results

Socio- Demographic Characteristics
This section describes the demographic characteristics of the sample under study. The data obtained describes the characteristics pertaining Age, Sex, Religion, Educational status of father, educational status of mother, Family income, Area, Blood donated, Source of health information, Semester. Frequency and percentage distribution were computed for describing the sample characteristics. The findings are prescribed in the table 1.

Table 1: Frequency And Percentage Distribution of Socio Demographic Variables among Undergraduate Students, N=60

Variables	Opts	f	%
Age	Below 18 years	5	8.34
	18 years	24	40.00
	19 years	17	28.33
	20 years and above	14	23.33
Sex	Male	18	30.00
	Female	42	70.00
	Transgender	0	0.00
Religion	Hindu	58	96.67
	Muslim	2	3.33
	Sikh	0	0.00
	Others	0	0.00
Educational status of Father	Non formal	0	0.00
	Middle	4	6.67
	Matric	12	20.00
	+2	21	35.00
	Graduate	15	25.00
	Postgraduate	8	13.33
Educational status of Mother	Non formal	0	0.00
	Middle	7	11.67
	Matric	11	18.33
	+2	25	41.67
	Graduate	12	20.00
	Postgraduate	5	8.33
Income	10,000 -15,000 per month	17	28.33
	15,001-20,000 per month	17	28.33
	More than 20,000 per month	26	43.34
Area	Urban area	25	41.67
	Rural area	35	58.33
Blood donated	Yes	7	11.67
	No	53	88.33
If yes how many time	Zero time	53	88.33
	One time	7	11.67
Health information source	Mass media	31	51.67
	Teacher	13	21.67
	Friends/ neighbours	0	0.00
	Family	16	26.66
Semester	First semester	30	50.00
	Second semester	0	0.00
	Third semester	30	50.00

Assessment of pre-test and post-test knowledge and attitude scores towards blood donation among students.

Table 2: Comparison of Pre-Test and Post-Test intervention level of Knowledge Score

Level of Knowledge	Pre Test		Post Test	
	f	%	f	%
Fair	4	6.7	0	0
Good	51	8.5	2	3.3
Very good	5	8.3	58	96.7

Maximum Score=30
Minimum Score=0

Table 2 show that in in pre-test knowledge scores of majority of students i.e. 51(85%) had good knowledge, 5(8.3%) students had very good knowledge and 4(6.7%) students had fair knowledge. and post-test knowledge scores of majority of students i.e. 58(96.7%) had very good knowledge and 2(3.3%) students had good knowledge, 0(0%) students had fair knowledge.
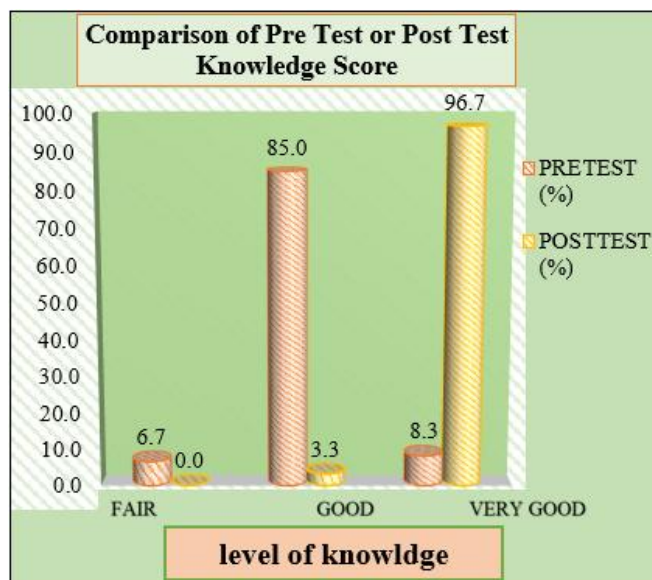

Figure 1: Cylindrical Diagram Representing Comparison of Percentage Distribution of Pre Test and Post-Test Knowledge Score

Table 3: Comparison with Paired "t" test of Pre-Test and Post-Test Knowledge Score.

Paired t Test	Mean ± S.D	Mean%	Range	Mean Diff.	Paired t Test
Pre-test knowledge	15.7±3.35	52.3	6-21	11.05	66.127*
Post-test knowledge	26.75±2.19	89.2	20-30		

*Significance Level 0.05
Maximum Score=30
Minimum Score=0

Table 3 showed the comparison of pre-test and post-test knowledge scores to determine the effectiveness of Structured Teaching Programme. Mean post-test knowledge scores 26.75 was significantly higher than the mean pre-test knowledge score was 15.7 as evidenced by t-test 66.127 at 0.05 level of significance among students. It showed that structured teaching programme was found effective to enhance the knowledge regarding blood donation.

Table 4: Comparison of Pre-Test and Post Test Intervention Level of Attitude Score, N=60

Level of attitude	Pre Test		Post Test	
	f	%	f	%
Unfavourable	1	1.7	0	0
Moderately favourable	52	86.7	1	1.7
Favourable	7	11.7	59	98.3

Maximum Score=54
Minimum Score= 18

Table 4 Showed the frequency and percentage distribution of Pre-test attitude score among students, majority of students 52(86.7%) had moderately favorable attitude, 7(11.7%) had favorable attitude, 1(1.6%) had unfavorable attitude and post test score among students, majority of students 59(98.3%) had favorable attitude, 1(1.7%) had moderately favorable attitude.
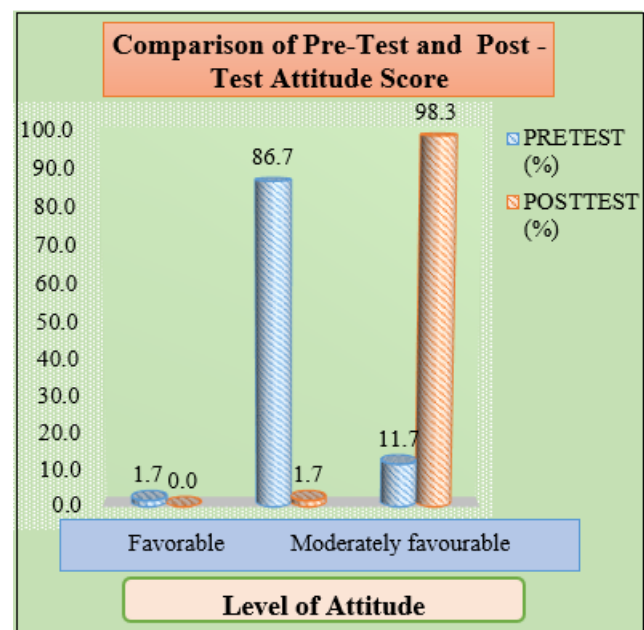

Figure 2: Cylindrical Diagram Representing Comparison of Percentage Distribution of Pre-Test and Post-Test Level of Attitude

Table 5: Comparison with Paired "t" test of Pre-Test and Post-Test Attitude Score

Paired t Test	Mean ± S.D	Mean%	Range	Mean Diff.	Paired t Test
Pre-test Attitude	38.47±3.275	71.20	29-44	10.46	79.778 **
Post-test Attitude	48.93±2.469	90.60	41-54		

*Significance Level 0.05
Maximum score =54
Minimum score =18

Table 5 showed the comparison of pre-test and post-test attitude scores to determine the effectiveness of Structured Teaching Programme. Mean post-test attitude scores 48.93 was significantly higher than the mean pre-test attitude scores 38.47 as evidenced by t-test 79.778 at 0.05 level of significance among students. It showed that Structured Teaching Programme was found effective to change the attitude regarding blood donation.

Table 6 Association of Pre-Test Knowledge Scores Regarding with Selected Socio Demographic Variables, N=60

Variables	Opts	Very Good	Good	Fair	X^2	df	Table Value	P Value
Age	Below 18 years	0	1	4	64.70	6	12.592	0.000***
	18 years	0	24	0				
	19 years	0	17	0				
	20 years and above	5	9	0				
Sex	Male	4	12	2	7.73	2	5.991	0.021*
	Female	1	39	2				
	Transgender	0	0	0				
Religion	Hindu	5	49	4	0.36	2	5.991	0.833NS
	Muslim	0	2	0				
	Sikh	0	0	0				
	Others	0	0	0				
Educational status of father	Non formal	0	0	0	95.29	8	15.507	0.000**
	Middle	0	0	4				
	Matric	0	12	0				
	+2	0	21	0				
	Graduate	0	15	0				
	Postgraduate	5	3	0				
Educational status of mother	Non formal	0	0	0	6.967	8	15.507	0.540NS
	Middle	0	7	0				
	Matric	1	10	0				
	+2	4	19	2				
	Graduate	0	11	1				
	Postgraduate	0	4	1				
Income	10,000-15,000 per month	0	13	4	17.30	4	9.488	0.002**
	15,001-20,000 per month	0	17	0				
	More than 20,000 per month	5	21	0				
Area	Urban area	3	22	0	3.59	2	5.991	0.166NS
	Rural area	2	29	4				
Blood donated	Yes	5	2	0	41.35	2	5.991	0.000*
	No	0	49	4				
If yes how many time	Zero time	0	49	4	NA		NA	
	One time	5	2	0				
Health information source	Mass media	3	25	3	3.21	4	9.488	0.522NS
	Teacher	0	13	0				
	Friends/ neighbours	0	0	0				
	Family	2	13	1				
Semester	First semester	0	26	4	9.02	2	5.991	0.011*
	Second semester	0	0	0				
	Third semester	5	25	0				

*Significant at 0.05 level

Table 6 showed that the chi square value shows that there is significant association between the level of knowledge score with demographic variable (Age, sex, educational status of father, income, blood donation, and semester). The calculated chi square value were less than the table values at 0.05 level of significance.

Table 7: Association Pre-Test Attitude Scores with Selected Socio-Demographic Variables, N=60

Variables	Opts	Favourable	Moderately favourable	Unfavourable	X^2	df	Table Value	P Value
Age	Below 18 years	4	1	0	11.18	3	7.815	0.011*
	18 years	24	0	0				
	19 years	17	0	0				
	20 years and above	14	0	0				
Sex	Male	17	1	0	2.37	1	3.841	0.123NS
	Female	42	0	0				
	Transgender	0	0	0				
Religion	Hindu	57	1	0	0.03	1	3.841	0.851NS
	Muslim	2	0	0				
	Sikh	0	0	0				
	Others	0	0	0				
Educational status of Father	Non formal	0	0	0	14.23	4	9.488	0.007**
	Middle	3	1	0				
	Matric	12	0	0				
	+2	21	0	0				
	Graduate	15	0	0				
	Postgraduate	8	0	0				

Variable	Category							
Educational status of Mother	Non formal	0	0	0	11.18	4	9.488	0.025*
	Middle	7	0	0				
	Matric	11	0	0				
	+2	25	0	0				
	Graduate	12	0	0				
	Postgraduate	4	1	0				
Income	10,000-15,000per month	16	1	0	2.57	2	5.991	0.276NS
	15,001-20,000per month	17	0	0				
	More than 20,000 per month	26	0	0				
Area	Urban area	25	0	0	0.72	1	3.84	0.394NS
	Rural area	34	1	0				
Blood donated	Yes	7	0	0	0.13	1	3.841	0.714NS
	No	52	1	0				
If yes how many time	Zero time	6	0	0			N.A	N.A
	One time	6	0	0				
Health information source	Mass media	30	1	0	0.95	2	5.991	0.621NS
	Teacher	13	0	0				
	Friends/ neighbours	0	0	0				
	Family	16	0	0				
Semester	First semester	29	1	0	1.01	1	3.841	0.313NS
	Second semester	0	0	0				
	Third semester	30	0	0				

*Significant at 0.05 level

Table 7 showed that chi square value there will be significant association between the level of posttest attitude with socio demographic variable (Age, Educational status of father, and educational status of mother). The calculated chi square values were less than the table values at 0.05 level of significance.

4. Discussion

The purpose of the study was conducted to assess the effectiveness of Structured Teaching Programme regarding knowledge and attitude towards blood donation among students of Center of Excellence Govt. Degree College Sanjauli, Shimla. Himachal Pradesh. The present study shows that majority of undergraduate students had good knowledge in pre test.and had moderate favourable attitude. The findings are similar with the existing literature by Rajan. K. Jinn (2020). In this study 33% of adolescents had inadequate knowledge and 77% of adolescents had favourable attitude regarding blood donation. In other hand post test score majority of undergraduate students i.e. 58(96.7%) had very good knowledge and 59(98.3%) had favourable attitude towards blood donation which is higher than the pre test score. this study concluded that structured teaching program was effective.

There was significant correlation found between pretest knowledge and post-test attitude ($r = 0.976$, $p = 0.0057$) pre-test knowledge and post-test attitude ($r = 959$, $p = 0.0254$). The findings are similar with the existing literature by Javaeed Aeslaan, Kousar Rubina, Farooq Aalya, Hina Saddaf, Ghauri Sanniya Khan (2020). In this study there was a statistically significant correlation between knowledge and attitude ($p = 021$). Overall knowledge was higher among the female students ($p = .019$). The study concludes that an overall good level of knowledge and attitude among medical students.

5. Conclusion

The following conclusions were drawn from the findings of the study:
1) Deficit in knowledge and moderate favorable attitude of undergraduate students was founded.
2) Undergraduate students had significant enhancement in knowledge and improvement in the attitude towards blood donation after administration of Structured Teaching Programme.
3) Structured Teaching Programme was effective in enhancing the knowledge and attitude towards blood donation
4) Positive correlation was found between knowledge score and attitude score of undergraduate students towards blood donation

Thus, the Structured Teaching Programme towards blood donation was effective in enhancing the knowledge and attitude.

References

[1] Wikipedia contributors. (2023, May 7). Blood donation. Wikipedia, The Free Encyclopedia. Available on https://en.wikipedia.org/w/index.php?title=Blood_donation&oldid=1153709856
[2] Enawgaw, B., Yalew, A., & Shiferaw, E. (2019). Blood donors' knowledge and attitude towards blood donation at North Gondar district blood bank, Northwest Ethiopia: a cross-sectional study. BMC Research Notes, 12(1), 729. Available on https://doi.org/10.1186/s13104-019-4776-0
[3] Hossain MS, Siam MH, Hasan MN, Jahan R, Siddiqee MH. Knowledge, attitude, and practice towards blood donation among residential students and teachers of religious institutions in Bangladesh–A cross-sectional study. Heliyon. 2022 Oct 1;8(10).
[4] Melku, M., Asrie, F., Shiferaw, E., Woldu, B., Yihunew, Y., Asmelash, D., & Enawgaw, B. (2018). Knowledge,

attitude and practice regarding blood donation among graduating undergraduate Health Science students at the University of Gondar, northwest Ethiopia. Ethiopian Journal of Health Sciences, 28(5), 571–582. Available on https://doi.org/10.4314/ejhs.v28i5.8

[5] (PDF) A study to assess the effectiveness of structured teaching program on knowledge regarding blood donation among adults at selected urban area of Rewa (M.P) (researchgate.net).

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