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Research Article

A Study to Assess the Effectiveness of Planned Teaching Programme on Knowledge Regarding Blood Donation among College Students at Selected Arts Colleges Banaskantha, Gujarat

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Abstract

Background: Blood donation (BD) is an essential and integral part of our fitness care system. Without BDs, various scientific techniques that we take with no consideration could not take place. BDs enable medical professionals to perform a wide range of life-saving procedures.

Methods: This study used a quantitative research methodology with a pre-experimental one-group pre-test post-test research design. By employing the non-probability purposive sampling approach, 60 college students were chosen. Explain about BD self-administered questionnaire was used for the pre-test on the 1st day. On the 7th day, a post-test was conducted using a self-administered questionnaire to determine the impact of the planned teaching on college students' knowledge about BD. Both descriptive and inferential statistical methods, including frequency, percentage, and Chi-square, were used to examine and interpret the data that had been collected.

Results: According to the results, just 5% of respondents had adequate knowledge about BD, 33.33% had moderate knowledge, and 61.66% had inadequate knowledge. The mean score of post-test knowledge score of 16.63 (68.22%) is higher than the mean pre-test knowledge score of 7.03 (32.78%), the enhancement in the knowledge of respondents was 9.6 (35.44%) suggesting that the planned teaching program was effective in increasing the knowledge of college student regarding BD among. The data also show that at a significance level of 0.05, the "z" value of 13.18 is significantly greater than the table value of 1.96.

Conclusion: The planned teaching program significantly enhanced college students' knowledge of BD.

Keywords: Assess, college students, effectiveness, knowledge, planned teaching program

Introduction

Fundamentally, human blood is a crucial, life-saving substance that, if ready vacuity can be ensured, has the power to save millions of lives. To satisfy the initial need for blood and blood products, at least 1% of the population should voluntarily donate blood, according to the WHO.[1] The WHO's 2000 statement, with the tagline "Safe blood starts with me, blood saves people's lives," emphasized the importance of voluntary blood donation (BD) by healthy individuals for a higher quality of life. A goal was to decrease the risk of the transmission of transfusion-associated diseases by promoting 100 unpaid, voluntary BDs from donors in low-threat communities.[2]

Twenty to fifty million individuals are injured or rendered disabled as a result of traffic accidents each year, killing 1.2 million people, and the majority of these victims require blood transfusions within the first 24 h of treatment. About

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90% of deaths occur in developing and post-industrial nations. By 2020, it is anticipated that road business deaths will rise by 65 globally and by 80 in low- and medium-HDI nations, making road business injuries the third highest contributor to the worldwide burden of complaint.[3]

A valuable and important source of health resources is blood components. Transfusions of blood are an essential component of care that, in some circumstances, even save lives. However, there are significant disadvantages, thus it is important to think carefully before transfusing blood components.[4] Mortal blood is an essential part of being a mortal, and it is not shielded.[5]

According to the WHO, the first of the population's BD is often the bare minimum required to satisfy a country's most basic requirements for blood safety; the requirements are more stringent in nations with more developed health-care systems. However, the average BD rate and ratios in developing nations are 15 times lower than those in developed nations. According to encyclopedias, less than one BD per ten thousand people occurred in more than 70 countries in 2006. Around 8 million units of blood were anticipated to be short in the WHO African region in 2006, but only 3.2 million units — or roughly 41.5 of the demand — were collected.[6] In some nations, people may prefer direct donation from family members or musketeers over "non-natives" because they think this will eliminate the risk of transfusion-transmittable infection.[7]

Medical professionals use blood transfusions to treat patients who require blood or blood products to treat a deformity. An important public action to help with blood shortages is to maintain a force of safe blood components that is based on voluntary, compensated BD.[8]

Blood is the mystical component that grants another person a joyful life. Even though we have made amazing advances in knowledge, we are not yet capable of creating the magic component known as Blood. Death's blood has no protection. Regular voluntary BD are essential for the blood transfusion program as the demand for safe blood is increasing. Millions of lives can be saved by blood, and young people are the world's blood force of the future and a temporary solution.[9]

Materials and Methods

Research design and setting

Pre-experimental one-group pre-test post-test research design has been selected for this study to assess effectiveness of planned teaching programmed on knowledge regarding BD. The present study has been performed in the selected ARTS colleges at Banaskantha district.

Sample, sample size, and sampling technique

The samples selected for the present study are ARTS college students. The sample size were 60 college students. The non-probability purposive sampling techniques were utilized to select the sample. A 60 sample of college student were selected from ARTS colleges at Banaskantha, Gujarat.

Data collection tool and technique

Demographic data consists of selected sociodemographic variables such as gender, stream of HSC, religion, residency of students, and do you have any information about BD. This section consists of five-item structured knowledge questionnaire on BD among college students. This section consists of 25 items on selected aspects of BD. Each item had one or more correct answers all of which were scored. Each correct answer was given a score of "1" and wrong answer "zero." The total score was 25.

Processing of the data collection: Data collection refers to the methodical gathering of information (data) pertinent to the study's goal. Before collecting data, official approval was acquired from the principal of Shree Adarsh ARTS College in Deodar. The primary investigation was conducted from May 9, 2022, through May 15, 2022. Sixty respondents were chosen for the study using the non-probability purposive sampling method. The investigator met the respondents and built rapport with them after getting permission and making sure they were comfortable at work and with their health. Each kid was asked to sign a written statement of informed consent. The respondents received the proper orientation regarding the purpose of the study, the form of the questionnaire, and the precautions taken to protect them from any hazards such as maintaining confidentiality, security, and identity. The pre-assessment test was done by questionnaire for 60 students and sociodemographic variables were collected from students. The PTP was given to all 60 students. After 7 days of the intervention, the post-test was administered to the 60 students.

Results

Organization and presentation of the data

To facilitate tabulation and statistical processing, the obtained data were loaded into a master Excel file. Based on the goals and hypotheses developed for a current study, a data were analyzed and interpreted using descriptive and inferential statistics.

The findings are presented under the following headings

- Section A: frequency and percentage distribution of sociodemographic variables
- Section B: Assessment of pre-test and post-test level of knowledge regarding BD among the college students at selected arts colleges in Banaskantha, Gujarat."
- Section C: Effectiveness of the planned teaching program
- Section D: Association between the post-test knowledge score with selected demographic variables of BD among the college students.

Section A: Frequency and percentage distribution of Sociodemographic variables

Gender

Most of the respondents 65% belonged to the male, then 35% belonged to the female, 00% respondent to the transgender.

Stream of HSC

Most of the respondents 75% belonged from ARTS than Science most of the respondents 13.33%, Commerce most of the respondents 8.33% and another respondent 3.33%.

Religions

Most of the respondents 53.33% belonged to the Hindu, 30% of respondents to Muslim, and 16.66% belonged to other.

Residency of student

Most of the respondents 60% belonged to urban and 40% of respondents belonged to rural.

Any information about BD

Most of the respondents 80% they are belonged to Yes, and 20% are responded to No [Table 1].

Section B

Assessment of pre-test and post-test level of knowledge regarding BD among the college students at selected arts colleges in Banaskantha, Gujarat."

Table 2 shows that regarding the use of the planned teaching program on knowledge regarding BD among the students of arts colleges, in the pre-test, 5% of the respondents had adequate knowledge, 33.33% had moderate knowledge, and 61.66% had inadequate knowledge; in the post-test, 70% of the respondents had adequate knowledge, 30% had moderate knowledge, and 0% of the respondent had inadequate knowledge.

Section C: Effectiveness of the planned teaching program

Table 3 showed that the aforementioned table also shows that respondents' knowledge has increased by 9.6 (35.44%), demonstrating that the post-test knowledge score is higher than the pretest knowledge score. The data also show that at a significance level of 0.05, the "z" value of 13.18 is significantly higher than the table value of 1.96. This shows that there was a difference between respondents' pre-test and post-test knowledge scores, indicating that the planned teaching program is effective in raising college students' knowledge scores.

H1: There is a significant difference between the pre- test and post-test knowledge score of college students. At 0.05 levels, a hypothesis was investigated. At the 0.05 level of significance, the estimated "z" value of 13.18 is significantly greater than the table value of 1.96. This indicates that there is a significant difference between pre-test and post-test knowledge score; hence, the H1 hypothesis was proved and accepted.

Section D: Association between the post-test knowledge score with selected demographic variables of BD among the college students

This section examines the analysis and interpretation of the information gathered to ascertain the relationship between the post-test knowledge score and particular demographic variables. A relationship between post-test knowledge score and certain demographic variables such as gender, HSC stream, religion, residence of students, and any information on BD is described using a parametric Chi-square test.

Table 4 showed that the obtained χ^2 value of gender, that is, 10.78 is more than the tabular value 5.99 which indicates that there is a significant association between the post-test

Table 1: Frequency and percentage distribution of sociodemographic variables (*n*=60)

Demographic variables	Frequency (%)
Gender	
Male	36 (65)
Female	24 (35)
Transgender	0
Total	60 (100)
Stream HSC	
Arts	45 (75)
Science	8 (13.33)
Commerce	5 (8.33)
Other	2 (3.33)
Total	60 (100)
Religion	
Hindu	32 (53.33)
Muslim	18 (30)
Other	10 (16.66)
Total	60 (100)
Residency of students	
Urban	34 (60)
Rural	26 (40)
Total	60 (100)
Any information about blood donation	
Yes	32 (80)
No	28 (20)
Total	60 (100)

Table 2: Assessment of pre- and post-test level of knowledge regarding blood donation among the college students

Level of knowledge (%)	Score	Frequency (%)	
		Pre-test	Post- test
Inadequate knowledge (0–33)	0–8	37 (61.66)	0
Moderately knowledge (34–67)	9–17	20 (33.33)	18 (30)
Adequate knowledge (68–100)	18–25	3 (5)	42 (70)
Total	25	60 (100)	60 (100)

Table 3: Effectiveness of the planned teaching program

Knowledge	Mean	Mean (%)	SD	Enhancement	Enhancement (%)	Difference	*Z*	Inference
Pre-test	7.03	32.78	4.13	9.6	37.03	118	13.18	Significant
Post-test	16.63	68.22	3.88					

SD: Standard deviation

knowledge score and gender at df of 2 ($P < 0.05$ level). Hence, the H2 hypothesis is accepted. Table 5 showed that the obtained χ^2 value of stream of HSC, that is, 11.86 is more than the tabular value 7.815 which indicates that there is a significant association between the post-test knowledge score and stream of HSC at df of 3 ($P < 0.05$ level). Hence, the H2 hypothesis is accepted.

Table 6 showed that the obtained χ^2 value of religion, that is, 13.94 is more than the tabular value 5.99 which indicates that there is a significant association between the post-test knowledge score and religion at df of 2 ($P < 0.05$ level). Hence, the H2 hypothesis is accepted.

Table 7 showed that the obtained χ^2 value of the residency of students, that is, 8.68 is more than the tabular value 3.84 which indicates that there is a significant association between the post-test knowledge score and residency of students at df of 1 ($P < 0.05$ level). Hence, the H2 hypothesis is accepted.

Table 8 showed that the obtained χ^2 value of the any information about BD, that is, 10 is more than the tabular value 3.84 which indicates that there is a significant association between the post-test knowledge score and use of any information about BD at df of 1 ($P < 0.05$ level). Hence, the H2 hypothesis is accepted.

The Chi-square test was used to examine the relationship between post-test knowledge and sociodemographic factors such gender, HSC stream, religion, student residency, and knowledge of BD. Out of which gender $\chi^2 = 10.78$, stream of HSC $\chi^2 = 11.86$, religion $\chi^2 = 13.94$, residency of student $\chi^2 = 8.68$, information about BD $\chi^2 = 10$ was found to be significant associated with post-test knowledge score at 0.05 level; hence, research hypothesis H2 was accepted.

Discussion

In Ludhiana, Punjab, a quasi-experimental research was carried out to assess the effectiveness of a structured teaching program on students' knowledge of BD. Researcher created STP regarding BD. A self-structured knowledge questionnaire was created based on a structured teaching program to evaluate the study sample's pre- and post-test knowledge scores regarding BD and its advantages. A study's results presented that, following the administration of the Structured Knowledge

Table 4: Association between post-test knowledge score of the respondent with gender (*n*=60)

Variables gender	Below median	Above median	Total	χ^2	Difference	*P* (0.05)	Inference
Male	30	6	36	10.78	2	5.99	Significant
Female	10	14	24				
Transgender	0	0	0				
Total	40	20	60				

Table 5: Association between posttest knowledge score of the respondent with stream of HSC (*n*=60)

Variables stream of HSC	Below median	Above median	Total	χ^2	Difference	*P* (0.05)	Inference
Arts	38	7	45	11.86	3	7.815	Significant
Science	6	2	8				
Commerce	2	3	5				
Other	0	2	2				
Total	39	21	60				

Table 6: Association between posttest knowledge score of the respondent with religion (*n*=60)

Variables religion	Below median	Above median	Total	χ^2	Difference	*P* (0.05)	Inference
Hindu	26	6	32	13.94	2	5.99	Significant
Muslim	5	13	18				
Other	6	4	10				
Total	37	23	60				

Table 7: Association between post-test knowledge score of the respondent with residency of students (*n*=60)

Variables residency of students	Below-median	Above median	Total	χ^2	Difference	*P* (0.05)	Inference
Urban	28	6	34	8.68	1	3.84	Significant
Rural	12	14	26				
Total	40	20	60				

Table 8: Association between post-test knowledge score of the respondent with information about blood donation

Variables any information about blood donation	Below median	Above median	Total	χ^2	Difference	*P* (0.05)	Inference
Yes	28	4	32	10	1	3.84	Significant
No	14	14	28				
Total	42	18	60				

Program, respondents' mean post-test knowledge scores about BD and its advantages were significantly (p 0.01) higher than their pretest knowledge scores (12.64). Maximum 28 subjects (or 55%) had average knowledge scores on the pre-test, followed by 19 subjects (or 38%) who had bad knowledge scores, and 2 subjects (or 4%) who had really poor knowledge scores. Just 1 (2%) people scored well in knowledge. In the pretest, no subject received a very high knowledge score. The level of post-knowledge score for 21 subjects increased after the STP was administered because in the post-test, 24 (48%) of the subject students received very good knowledge scores, followed by 20 (40%) who received good level knowledge scores. Six (12%) people only had average knowledge scores. None of the subjects received ratings for a bad or extremely poor level of knowledge. According to a study, implementing a structured teaching program on BD was quite successful with college-bound kids.[10]

A research with the title to assess non-medical students' BD knowledge at selected colleges in Mount Abu, Rajasthan was conducted. Using probability, 100 students not studying medicine were chosen straightforward random sampling method. The level of knowledge of non-medical students on BD was evaluated using a self-structured knowledge questionnaire. The demographic data that make up the majority of this study's sample include the following: Age (50–22), gender (54–49%), Hinduism (90–%), place of residence (46–46%), family monthly income (<10,000), father education level (primary education), mother education (no formal education), father occupation (50–50%), and mothers' occupation (housewife, 88%). Only 4% of non-medical students had an outstanding understanding about BD, whereas the majority of students (46%) had only fair awareness, (32%) average knowledge, and 18% had good knowledge. The results showed that, at 0.05, there was a significant relationship between age and knowledge level. The research's findings unequivocally demonstrate that non-medical students lack basic knowledge about BD.[8]

A study to evaluate the impact of a PTP on non-professional college students' understanding of BD was carried out in a few key districts of the city of Jaipur. In this study, an evaluative research strategy was used. For the current investigation, a pre-experimental design with a single group, pre-test, and post-test phases was employed to gauge PTP efficacy. The sample size for this study was 60. There were no female samples. Data collection involved administering a standardized knowledge questionnaire. The study's conclusions show that the pre- and post-test mean differences are statistically significant at the 0.05 level. This proves that the PTP was effective in terms of information acquisition by the non-professional students. Pre-test results showed that the majority of students (91.67%) had average knowledge scores (36–70%), 8.33% had low knowledge scores (0–35%) and 0% had good knowledge scores (70–100%); in contrast, post-test results showed that the majority of students (98%), had good knowledge scores, 1.67% had average knowledge scores, and 0% had poor knowledge scores. Between the student's pre-test and post-test knowledge, there is a sizable gap. The student's knowledge improves as a result of the planned instructional program.[11]

An evaluation of the planned teaching program's impact on late adolescent students' (18–20 year old) knowledge about BD A pre-experimental one-group pre-test and post-test research study was conducted at Tagore College of Arts and Science, Chrompet, Chennai. The sample for the study was chosen using a purposeful sampling strategy. There were 30 late teenage pupils in the study sample as a whole. The mean score on the knowledge test before and after is 8.87 and 18.47, respectively. At P-value of 0.001, that value is statistically significant by 27.03. This shows that a mean difference of 10 exists. It is expected that a planned training program about BD among late adolescent students (18–20 years old) has a substantial impact on its success. The research investigation came to the conclusion that most students had enough awareness of BD based on the findings. Thus, it is determined that the planned teaching approach is successful in educating late adolescent pupils (18–20 years old) about BD. (MRS. JEEVA JOSE, 2021).[12]

To evaluate the success of information education communication (IEC) regarding the advantages of BD among community members in Madhapar village in Rajkot, Gujarat, a pre-experimental one-group pre-test and post-test research study was undertaken. To determine the effectiveness of IEC and the advantages of BD, the sample size was 50. The inferential statistical method was used to assess the data that had been obtained. The effectiveness of IEC with regard to the advantages of BD among the Madhapar village area was assessed using a t-test. t-test results showed a value of 21.601 At 0.001 levels, this revealed to be highly significant. Thus, the study's findings indicated that the IEC regarding advantages of BD among rural people.[9]

Conclusion

According to the study's conclusions, planned teaching programs significantly enhanced college students' knowledge about BD.

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Conflicts of Interest

None.

Authors' Contribution

Each author has made a contribution to the research study's planning, execution, analysis, and manuscript-based presentation.

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