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Community Health Nursing

A Study to Assess the Effectiveness of Planned Teaching Programme on Knowledge Regarding Blood Donation among the Students in Selected Pu Colleges of Bagalkot

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Abstract **Original Research Article**

***Background*:** Blood is a specialized bodily fluid found in humans and other animals that performs many essential functions within the body. Blood has consistently been one of the fundamental necessities for human survival. Blood transfusion is crucial in preserving the lives of those patients requiring transfusions. Lack of awareness, fear, and misconceptions surrounding blood donations, along with the absence of voluntary blood donation organizations, are significant barriers in developing countries to promote voluntary blood donation. ***Method*:** A pre-experimental, one-group pre-test post-test framework was utilized for the research. By employing a simple random sampling method, 60 students were chosen, and data was gathered through a structured knowledge questionnaire on blood donation. Following data collection, a structured teaching program was implemented for the participants, and an 8th day post-test was administered using the same questionnaires. ***Results*:** The pretest mean (63. 01), SD (5. 44), mean percentage (59. 51%), minimum score (26), maximum score (104), and range (20) are recorded, respectively. The posttest mean (65. 1), SD (4. 032), mean percentage (62. 59%), minimum score (26), maximum score (104), and range (20) are noted. ***Conclusion*:** The study's findings hold significant implications for the nursing profession, including nursing practice, nursing education, nursing research, and nursing administration.

Keywords: Structured Teaching Program, Blood Donation, Effectiveness, Knowledge, Socio-Demographic Variables, PU College Students and Questionnaire.

INTRODUCTION

Essentially, blood is extremely essential in human life; it transports oxygen, nutrients, and waste products. Adults have 4-6 liters of blood in their bodies, and those suffering from chronic illnesses, accidents, and health issues require blood donations.

To meet the essential demand for blood and blood products, at least 1% of the population should voluntarily donate blood, according to the WHO. The WHO's 2000 statement, with the slogan "Safe blood starts with me, blood saves people's lives," highlighted the significance of voluntary blood donation (BD) by healthy individuals for an enhanced quality of life [1].

Nothing can compare to the value of human blood. Therefore, raising awareness about blood donation is the utmost priority to alleviate the shortage of blood donor's worldwide [2].

The donor is also required to respond to questions about their medical history and undergo a brief physical examination to ensure the donation is safe for their health [3].

India, with a population of about one billion, is consequently a nation that needs substantial amounts of blood to save the lives of its citizens. It is stated that approximately 8 million units of blood are needed each year in our country [4].

As blood is withdrawn from the donor's body, there will be a decrease in blood cells; to replace this loss, new cells will be generated by the marrow, thus revitalizing the blood and assisting in combating

Hemochromitosis (a genetic disorder), where iron builds up in body tissues due to improper iron metabolism, which may lead to organ damage [5].

Safe blood is a vital element in enhancing health care and in preventing the proliferation of infectious diseases globally. Millions of lives are preserved each year through blood transfusions, yet the quality and safety of blood transfusions remain a concern, especially in developing countries [6].

MATERIAL AND METHODS

An experimental study was conducted from July 22 to 27/ 2024, using a stratified random sampling technique, and a total of 60 students were chosen. The study took place at Basaveswara PU Science College in Bagalkot. Primary data was gathered through research design and planning. Utilize the questionnaire report to assess knowledge outcomes concerning blood donation.

Data Source: In this study, data was gathered from PU students.

Scientific Research:

The research is experimental and describes the facts and characteristics of the chosen sample. The purpose of the research is to evaluate the knowledge regarding blood donation. Therefore, an experimental research method was employed.

Research Design:

An experimental study is a framework in which the researcher compiles data at a specific point in time [the time of data collection]. This study is experimental in nature; researchers need to engage a selected group of PU students and gather information about their knowledge regarding blood donation. Since it was not feasible to collect data only once per intervention in this study, a quantitative approach was considered suitable for this research.

Variables:

Dependent variables: This research categorizes variables that hinge on the awareness of blood donation.
Independent variable: The independent variable is the organized teaching program among the students.

Sociodemographic Variable:

Includes age, sex, family type, study year, family member count, mother's education, father's education, mother's occupation, father's occupation, etc.

Study area: The research investigation took place at Basaweshwara PU Science College in Bagalkot. A total of 60 PU students are enrolled in this college. There are 60 students in the 12th grade, comprising 39 girls and 21 boys.

Target Group: The target group for this research consists of PU students attending Bagalkot Science College.

Accessible Cluster: In this investigation, the accessible cluster includes PU students aged 18 to 20 years who are studying at Basaweshwara PU Science College in Bagalkot.

Sample and Sample Size:

The study's sample comprised PU students aged between 18 and 20. There are 60 students in the 12th grade, all enrolled at Basaweshwara PU science college in Bagalkot. The sample size for this study is N=60.

Sampling Method:

The sample for this research was chosen utilizing the simple random sampling method. Our cohort is organized according to the class structure. Each group was divided into two subgroups based on gender. For instance, the general population of Basaweshwara PU Science College in Bagalkot took part in this study.

Data Collection Tools:

Data collection tools refer to methods that researchers employ to observe or gauge significant changes regarding their research inquiries. In this study, a sample and a crafted questionnaire were utilized for data gathering.

Data Collection Process: Bagalkot.

Prior Permission Obtained:

Formal authorization was secured from the Director of Shri BVVS Health Institute in Bagalkot. The simple random sampling technique was implemented to select subjects fulfilling the inclusion criteria. The researcher clarified the study's objective to the participants, and their consent was acquired. A pilot study was performed in selected areas of Bagalkot from July 16/2024, to July 20/ 2024, to assess the design's feasibility and effectiveness. Six PU students were chosen to select and self-administer standardized, closed-ended knowledge assessment questionnaires.

Ethical Approval:

An ethical approval certificate was obtained from the B. V. V. S Ethics Committee and Sajjalashri Institute of Nursing Sciences, Navanagar, Bagalkot. Informed consent was secured from the students participating in this research. The confidentiality and anonymity of student information and identities are safeguarded.

Data Analysis:

Data analysis refers to the structured arrangement and integration of research data and the application of gathered data to evaluate research hypotheses. Data underwent analysis through the use of experimental and inferential statistics.

- Evaluate population data utilizing frequencies and distribution percentages.
- Apply the mean and standard deviation to assess teens' scores.
- The Card Group employed least squares tests to discover relationships between knowledge about blood donation and their socio-demographic variables.

RESULTS

Research indicates that PU students' understanding of blood donation correlates with their socio-demographic factors. The pretest mean (63. 01), SD (5. 44), mean percentage (59. 51%), minimum score (26), maximum score (104), and range (20) are reported respectively. The posttest mean (65. 1), SD (4. 032), mean percentage (62. 59%), minimum score (26), maximum score (104), and range (20) are noted.

Table 1: Analysis of Demographic Data (N=60)

S.No	Sociodemographic data	Character	Frequency	Percentage
1	Age in years	16-18 years	57	95%
		18-20 years	3	5%
		20&above	0	0%
2	Sex	Male	21	35%
		Female	39	65%
3	Year of the study	PUC 1ST year	0	0%
		PUC2ND Year	60	100%
4	Type of family	Nuclear	33	55%
		Joint	27	45%
5	Religion	Hindu	54	90%
		Muslim	4	6.6%
		Christian	1	1.6%
		Other	1	1.6%
6	Number of family member	1-4	19	31%
		5-8	23	38.3%
		9-12	10	16%
		13 & above	8	13.3%
7	Education of the mother	No formal education	5	8.3%
		Primary	22	36.6%
		High school	27	45%
		PUC & above	6	10%
8	Occupation of the mother	Government employee	1	1.6%
		Private employee	0	0%
		Business	4	6.6%
		House wife	55	91.6%
9	Education of the father	Primary	10	16.6%
		High school	19	31.6%
		PUC	22	36.6%
		Graduation& above	9	15%
10	Occupation of the father	Unemployed	4	6.6%
		Government employee	5	8.3%
		Business	20	33.3%
		Private employee	7	11.6%
11	Family monthly income in rupees	Rs<10,000	46	76.6%
		Rs>20,000	14	23.3%
12	Do you know your Hemoglobin level?	YES	31	51.6%
13	Have attended any educational programme on blood donation?	YES	21	35%
		NO	39	65%
14	Have you donated blood at	Hospital	36	60%
		College	1	1.6%
		Home	0	0%
		All of the above	23	38.3%

Table 2: Association between pre-test knowledge score of the respondent with their socio-demographic factor

Sl.no	Sociodemographic variable	Chi-square	df	P Value	significance of association
1	Age	0.05	4	0.4497	NS
2	Sex	1.89	4	0.756	NS
3	Year Of The study	0	4	1	NS
4	Type Of Family	1.24	4	0.8715	NS
5	Religion	29.49	4	<0001	Significant
6	Number Of Family Members	1.42	4	0.8407	NS
7	Education Of Mother	7.7	4	0.1032	NS
8	Occupation Of Mother	0.11	4	0.9985	NS
9	Education Of Father	5.76	4	0.2178	NS
10	Occupation Of Father	1.73	4	0.7853	NS
11	Family Monthly Income	3.34	4	0.5026	NS
12	Hb Level	1.09	4	0.8959	NS
13	Have Attend Educational Programme On Blood Donation	1.89	4	0.756	NS
14	Blood Donated At	1.64	4	0.8016	NS

Pre-Test: - Description of the Relationship between the Pre-Test Knowledge Score of the Respondent and Their Socio-Demographic Factors

Age:

The computed chi square value is 0. 05(0. 4447) indicates that there is no significant relationship between the age of the students and their knowledge.

Sex:

The computed chi square value is 1. 89 (0. 756) indicates that there is no significant relationship between the sex of the students and their knowledge.

Year of the Study:

The computed chi square value is 0(1) indicates that there is no significant relationship between the year of study of the students and their knowledge level.

Type of Family:

The computed chi square value is 1. 24(0. 8715) indicates that there is no significant relationship between the type of family of the students and their knowledge level.

Religion:

The computed chi square value is 29. 49 (<0.0001) indicating that there exists a significant association between the Religion of the students and their level of knowledge.

Number of Family Members:

The computed chi square value is 1.42(0. 8407) indicating that there is no significant association between the number of family members of the students and their level of knowledge.

Education of Mother:

The computed chi square value is 7. 7(0.1032) indicating that there is no significant association between the education of the mother of the students and their level of knowledge.

Occupation of Mother:

The computed chi square value is 0.11(0. 9985) indicating that there is no significant association between the occupation of the mother of the students and their level of knowledge.

Education of Father:

The computed chi square value is 5. 76(0. 2178) indicates that there is no significant relationship between the education level of the students' fathers and their knowledge level.

Occupation of Father:

The computed chi square value is 1. 73(0. 7853) indicates that there is no significant relationship between the occupation of the students' fathers and their knowledge level.

Family Income:

The computed chi square value is 3. 34(0. 5026) indicates that there is no significant relationship between the family income of the students and their knowledge level.

Hb Level:

The computed chi square value is 1. 09(0. 8959) indicates that there is no significant relationship between the Hb level of the students and their knowledge level.

Have Attended any Educational Programme on Blood Donation:

The computed chi square value is 1.89(0. 756) indicates that there is no significant relationship between the students and their knowledge level.

Have You Contributed Blood At:

The computed chi square value is 1. 64(0. 8016) indicates that there is no significant relationship between the marital status of the adolescents' parents and their level of physical activity.

Table 3: Association between post-test knowledge score of the respondent with their socio-demographic factor

Si.no	Sociodemographic variable	Chi-square	df	P Value	significance of association
1	Age	4.34	1	0.0372	NS
2	Sex	0.06	1	0.8065	NS
3	Year Of The study	4.48	1	0.0278	NS
4	Type Of Family	0.0.3	1	0.8625	NS
5	Religion	0.16	3	0.9838	NS
6	Number Of Family Members	6.61	3	0.0854	NS
7	Education Of Mother	2.03	3	0.4662	NS
8	Occupation Of Mother	0.11	3	0.9906	NS
9	Education Of Father	2.57	3	0.4628	NS
10	Occupation Of Father	60	4	≤.0001	Significant
11	Family Monthly Income	0.34	1	0.5598	NS
12	Hb Level	0.06	1	0.8065	NS
13	Have Attend Educational Programme On Blood Donation	7.51	1	0.0061	Significant
14	Blood Donated At	0.73	3	0.866	NS

Post-Test: - Description of the Relationship between Post-Test Knowledge Score of the Respondent and Their Socio-Demographic Factors

Age:

The computed chi square value is 4. 34(0. 0372) indicates that there is no meaningful association between the age of the students and their knowledge.

Sex:

The computed chi square value is 0. 06 (0. 8065) indicates that there is no meaningful association between the sex of the students and their knowledge.

Year of the Study:

The computed chi square value is 4. 48(0. 0278) indicates that there is no meaningful association between the year of study of the students and their level of knowledge.

Type of family: - The computed chi square value is 0. 03(0. 8625) indicates that there is no meaningful association between the type of family of the students and their level of knowledge.

Religion: The computed chi square value is 0. 16 (0. 9838) indicates that there is no meaningful association between the religion of the students and their level of knowledge.

Number of Family Members:

The computed chi square value is 6. 61(0. 0854) indicates that there is no meaningful association between the number of family members of the students and their level of knowledge.

Education of Mother:

The computed chi square value is 2. 03 (0. 5662) indicates that there is no significant relationship between the education of the mother of the students and their knowledge level.

Occupation of Mother:

The computed chi square value is 0. 11 (0. 9906) indicates that there is no significant relationship between the occupation of the mother of the students and their knowledge level.

Education of Father:

The computed chi square value is 2. 57 (0. 4628) indicates that there is no significant relationship between the education of the father of the students and their knowledge level.

Occupation of Father:

The computed chi square value is 60 (lessthan. 0001) indicates that there is a significant relationship between the occupation of the father of the students and their knowledge level.

Family Income:

The computed chi square value is 0. 34 (0. 5598) indicates that there is no significant relationship between the family income of the students and their knowledge level.

Hb Level:

The computed chi square value is 0. 06 (0. 8065) indicates that there is no significant relationship between Hb level of the students and their knowledge level.

Have Attended any Educational Programme on Blood Donation:

The computed chi square value is 0.01 (0. 9203) indicates that there is a significant relationship between students and their knowledge level.

Have You Donated Blood at:

The computed chi square value is 0. 73 (0. 8661) indicates that there is no significant relationship between parents' marital status of the adolescents and their physical activity level.

Table No.4: Assessing Effectiveness of Planned Teaching Programme Regarding Blood Donation

Samples-60	Mean	S. D	Mean%	Min score	Max score	Range
Pre test	63.0167	5.441496	59.51%	26	104	20
Post test	65.1	4.0325	62.59%	26	104	20

The pretest average (63. 01), standard deviation (5. 44), average percentage (59. 51%), minimum score (26), maximum score (104), and range is (20) respectively. The posttest average (65. 1), standard deviation (4. 032), average percentage (62. 59%), minimum score (26), maximum score (104), and range is (20).

Table: 5 Correlation between pre test and post test knowledge regarding blood donation

Parameter	Value
Pearson's correlation co-efficient	0.2038
r^2	0.04155
P-value	0.1182
Covariance	4.4729
Sample size (n)	60
Statistic	1.5857

The outcome of the Pearson correlation suggested that there exists a non-significant small positive relationship between the pretest and posttest r(58)204, p(0. 118).

DISCUSSION

This research was conducted by Tinju James and Richard Sunny (5) involving 153 students aged between 18 and 20 years. The average age of the participants was 20. 91. Within the participant group, 44. 7% were male, while 55. 3% were female. 25. 8%, 39. 7%, and 34. 4% of the students were in their first, second, and final years of medical studies, respectively. 61. 6% of the participants had not previously donated blood. 62. 3% of the participants had attended awareness programs about blood donation [7].

In this study, blood donation is crucial for saving lives and is beneficial in surgical procedures, emergencies, childbirth, bleeding from peptic ulcers, liver conditions, lung illnesses, cancer cases, burn injuries, and blood disorders like hemophilia, anemia, and thalassemia. However, certain patients who require a transfusion do not get prompt access to safe blood. A safe blood donor is someone who donates blood willingly, without knowledge of who will benefit from it, without any expectations, and without being subjected to direct or indirect pressure [8].

The objective is to evaluate the extent and elements related to blood donation behavior among college students in southwestern Ethiopia. Consequently, the rate of blood donation was found to be 35. 5%, 95% CI (30. 8%-40. 2%). This figure aligns with the 35. 9% observed in Saudi Arabia [24]. Nevertheless, it surpasses 21. 6% (7), 27.1% in Ghana [14], 29.7% in Malaysia (25), 24. 5% in Samara [26], 26% in Iran [27], and 13% in Iraq [28], yet it falls short of the 47. 8% seen in Tigray, Ethiopia [13]. The results from this research are somewhat greater than those of most prior studies conducted [9].

In our research, an overwhelming majority (~92%) of the participants had never donated blood, but 42% indicated a desire to become regular blood donors. This figure is lower than that recorded in a different survey conducted among university students in Bangladesh, which showed approximately 74% of students exhibited a positive attitude toward blood donation [22]. Likewise, a significant positive attitude toward blood donation was noted in other nations, such as Tanzania (93%) and Ethiopia (~95%) [9-23]. This low intention among religious students in Bangladesh suggests that blood donation campaigns aimed at students in religious residential academic institutions were inadequate. Our study demonstrated that only a small percentage (12%) of the students and teachers at the RRA institution were approached by any organization for blood donation [10].

RESULTS

The mean of the pretest (63. 01), standard deviation (5. 44), mean percentage (59. 51%), minimum score (26), maximum score (104), and range (20) are stated respectively. The posttest mean (65. 1), standard deviation (4. 032), mean percentage (62. 59%),

minimum score (26), maximum score (104), and range (20) are recorded respectively.

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CONTRIBUTION OF AUTHORS

Research Proposal: Prof. Jayashri Itti, Lecturer Lakshm avva Gondi
Research Design: Experimental
Supervision: Lecturer Lakshmavva Gondi
Documentation: All researchers
Data Collection: All researchers
Data Analysis and Interpretation: All researchers
Who Researched: All researchers
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Critical Review: Lecturer Lakshmavva Gondi
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Conflict of Interest: None

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