

## **A study to assess the knowledge and attitude regarding blood and organ donation among the adolescents in selected colleges at Bangalore with a view to develop a self-instructional module**

**Nissy Paul and Cheryl Lobo**

<sup>1</sup> MSc Nursing, Community Health Nursing, Department of Community Health Nursing, Adarsha College of Nursing, Bangalore, Karnataka, India

<sup>2</sup> HOD & Professor, Department of Community Health Nursing, Adarsha College of Nursing, Bangalore, Karnataka, India

### **Abstract**

The life force in all human beings, regardless of color, race or belief, flows through their arteries and veins; it is red liquid which – depends on whether they are well or ill – bears good and bad tidings. Its various components form a highly developed defense and transport system which gives and saves life. Life is a dynamic process. It starts from birth and ends in to death. In between comes a different stage of life with different diseases and problems. The medical advancement of modern medicine is organ transplantation which has the power to save the lives of the clients. The present study was aimed to assess the knowledge and attitude regarding blood and organ donation among adolescents in selected colleges at Bangalore with a view to prepare a self-instructional module. The conceptual frame work of the study was based on community Nursing practice model Marilyn E. Parker and Dr. Barry. The research design used for this study was Non experimental descriptive design. Non probability purposive Sampling was used to select 100 samples for the study. The tool used for the study was structured interview schedule to assess knowledge and attitude regarding blood and organ donation. The data gathered were analyzed employing descriptive and inferential statistics. The findings of the study includes 33% of adolescents had inadequate knowledge and 77% of adolescents had favorable attitude regarding blood and organ donation. The study revealed that there was positive correlation ( $r=0.268$ ) between the knowledge and attitude scores of blood and organ donation. Distributing SIM regarding blood and organ donation helps the adolescents to have adequate knowledge, awareness and positive attitude regarding blood and organ donation.

**Keywords:** Blood and organ donation, self-instructional module, transport system

### **Introduction**

The life force in all human beings, regardless of color, race or belief, flows through their arteries and veins; it is red liquid which –depends on whether they are well or ill – bears good and bad tidings. Its various components form a highly developed defense and transport system which gives and saves life <sup>[1]</sup>.

Blood is a whole world in itself, each component having a specific job – red blood cells transport oxygen throughout the body; plasma transport proteins, including antibodies and clotting factors, and nutrients like glucose for energy around the body; white blood cells constitute defense mechanism against disease, and platelets ensure that bleeding stops. Blood also carries waste products from all the organs to be evacuated from the body <sup>[2]</sup>.

In 2021, the theme for World Blood Donor Day is “Give blood and keep the world beating””. The message highlights the essential contribution blood donors make to keep the world pulsating by saving lives and improving others' health. In effect this year's global campaign is armed principally at young people. Only 30% of donors today are less than 30 years old. It is therefore important to motivate more young people to become blood donors. Young people can play an important role in saving the lives by donating blood and by speaking to other young people to encourage

them to become the blood donors of the next generation <sup>[3]</sup>.

The theme, Blood Donation: Give! Aims to impart in everyone the importance of ‘sharing is caring’, inspiring care and how this care could save lives while enhancing your personal health through blood donation. “Not many people are able to truly change the world. Organ donation changes the world for transplant recipients.” A gift of life comes back from the dead to save the life of the terminally ill person; truly a modern day miracle. We are now at a time of tremendous social change where ordinary individuals are making a powerful statement that they care for their unfortunate brothers and sisters and are willing to reach out to help. Much work is required to transform these examples of “Social Awareness” in to a social movement.” our involvement can make a difference <sup>[5]</sup>.

An article which was published that in Deccan Herald “Three dates prior to the camp, a motivation camp is held, giving the students or employees information on who can donate blood and the benefits. Organ donation is donating a donor's organs like heart, kidneys, lungs, and pancreas, after the donor dies, for the purpose of transplanting them into another person who is need of an organ. A regular blood donor's heart (one donating 4-5 times in a year) is much healthier than a non-donor's says Dr. Raina “The annual requirement of blood generation in our country is eight

million units’ whereas the generation is only 3.5 million units per annum at present. In Delhi we need over 7 lakh units’ whereas the generation is a negligible two lakh units. Sometimes even less. No wonder there is always, a short supply “One campaign is aimed not at the 5% who donate, but the 4.5% whose blood donation would help alleviate the dismal situation in the city. Says Dr. Riana. Safe blood organization is a registered body that creates awareness amongst the masses on the beneficial effects of blood donation [6].

For the last five years, Karabasappa Manohar Gondi’s duty to save lives. Has made it his mission to encourage and educate people about organ and blood donation, and sign them up for the cause. He has been spreading awareness about the subject on every possible occasion in the area, and has led over 670 villagers in Hangal taluk to pledge their eyes while 11 people, including women, have pledged to donate their bodies. His mobile number is now widely in circulation, and he is often the first person called up by people during a medical emergency [7].

Organ donation is the gift of an organ to help someone who needs a transplant. Organ transplantation has greatly improved the grim outlook of patients suffering from end stage. Organ failure when one donate life, he gives someone more than restored health and well-being, and gives them hope for a better tomorrow. From care giver to patient, donor to recipient, and family to patient, the gift of hope touch us all.

**Objectives**

- To assess the knowledge regarding blood and organ donation among adolescents
- To assess the attitude regarding blood and organ donation among adolescents.
- To find relationship between knowledge and attitude regarding blood and organ donation among adolescents.
- To find the association between the level of knowledge regarding blood and organ donation among adolescents with their selected demographic variables.
- To find the association between the level of attitudes regarding blood and organ donation among adolescents with their selected demographic variables.

**Hypothesis**

H1- There will be a significant relationship between the knowledge score and attitude score.

H2- There will be a significant association between knowledge score among adolescents with their selected demographic variables.

H3- There will be a significant association between attitude score among adolescents with their selected demographic variables.

**Methodology**

**Research Design :** One group pre-test post-test design

**Setting: selected** Colleges at Bangalore

**Target Population:** Adolescents

**Sample Technique:** Purposive sampling technique

**Sample Size:** It consisted of 100 adolescents

**Tool used for data collection:** Following tools used for the data collection

**Part I**

It consists of demographic variables such as age, sex, religion, type of family, education, health information resources, registered blood / organ donor.

**Part II**

It consists of structured interview schedule which consists of 35 multiple choice questions regarding blood and organ donation. It has four options among which, one is the correct response.

**Scores will be interrupted as follows**

Level of knowledge	Scores	Percentage.
Adequate	25 – 35	67 – 100%
Moderately adequate	13 – 24	34 - 66%
Inadequate	1 – 12	0-33%

**Part III**

Five point likert scale consists of 15 statements to assess the attitude of the adolescents regarding blood and organ donation. Total score is 75.

For the positive attitude statements the score was measured as follows.

**Strongly agree: 5**

- Agree** : 4
- Uncertain** : 3
- Disagree** : 2
- Strongly disagree** : 1

For the negative attitude statements the score was measured as follows.

- Strongly agree** : 1
- Agree** : 2
- Uncertain** : 3
- Disagree** : 4
- Strongly disagree** : 5

**Scores will be interpreted as follows:**

Level of attitude	Scores	Percentage
Favorable	51- 75	67 - 100%
Moderately favorable	26 – 50	34 - 66%
Unfavorable	0 – 25	0-33%

**Procedure of data collection**

The study was conducted at PVP School, Bangalore. The written permission was obtained from principal PVP School. The 100 samples who met the inclusion criteria were selected by purposive sampling method. Oral consent was obtained from the study participants after explaining the purpose of the study. The demographic data and the knowledge regarding blood and organ donation was assessed by using structured interview schedule. The attitude regarding blood and organ donation was assessed using five point likert scales. 10 to 25 adolescents were selected from each section. 45 minutes was spent for each study samples. 10 to 25 adolescents were interviewed per day, between 9am to 5 pm. The same procedure was carried out in all the other sections to obtain data from all the samples. After collecting the data from all the samples, the

SIM was developed, validated and distributed to all the samples. Finally the data was tabulated and analyzed statistically.

**Results**

**a. The findings related to socio-demographic variables of participants**

**Table 1:** Frequency and percentage of demographic variables of adolescents. n = 100

SL. No	Demographic Variables	Frequency	percentage
1	Age		
1.1	14 – 17 years	28	28
1.2	18 – 21 years	72	72
2	Sex		
2.1	Male	71	71
2.2	Female	29	29
3	Religion		
3.1	Hindu	87	87
3.2	Christian	11	11
3.3	Muslim	2	2
3.4	Others	-	-
4	Type of Family		
4.1	Nuclear family	71	71
4.2	Joint family	29	29
5	Education		
5.1	Primary education	48	48
5.2	Secondary education	27	27
5.3	Higher secondary education	10	10
5.4	Graduates	15	15
6	Sources of Information		
6.1	Television Programme	61	61
6.2	Radio Programme	8	8
6.3	News Paper	31	31
7	Registration		
7.1	Yes	7	7
7.2	No	93	93

Table 1 showed that description of demographic variables. The majority of the adolescents 72 (72%) were belonged to the age group of 18 – 21 years and 14 – 17 years adolescents were 28 (28%) There were 71 (71%) Males and 29 (29%) were females. The data showed that the highest number 87 (87%) of adolescents were Hindus, few 11 (11%) of adolescents were Christian very few 2(2%) of adolescents were Muslims. Majority of the adolescents 71(71%) belonged to nuclear family. Few 29 (29%) of the adolescents belong to joint family. There were 48 (48%) of the adolescents studied primary education, 27 (27%) of the adolescents studied secondary education, 10 (10%) of the adolescents studied higher education, majority of the

adolescents 15 (15%) were graduates. The majority of the adolescents 61 (61%) had health information from television programs, 8 (8%) of the adolescents had health information from radio programs, 31 (31%) of adolescents had health information from newspaper and magazines. The data showed that the most 93 (93%) of the adolescents were not registered, very few 7 (7%) of the adolescents were registered for blood & organ donation.

**Section B**

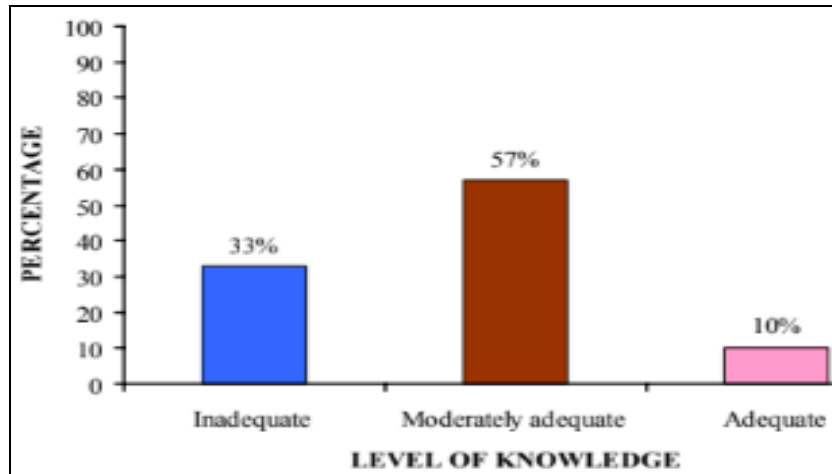
**Frequency and Percentage of Knowledge Scores of Adolescents Regarding Blood and Organ Donation.**

**Table 2:** Frequency and percentage of knowledge scores of adolescents regarding blood and organ donation n=100

S. No	Level of knowledge	Frequency (F)	Percentage (%)
1	Adequate Knowledge Moderately	10	10
2	Adequate Knowledge	57	57
3	Inadequate Knowledge	33	33
	Total	100	100

Table 2 showed that 33 (33%) had inadequate knowledge 57 (57%) had moderately adequate knowledge and 10(10%) of

adolescents had adequate knowledge regarding blood and organ donation.



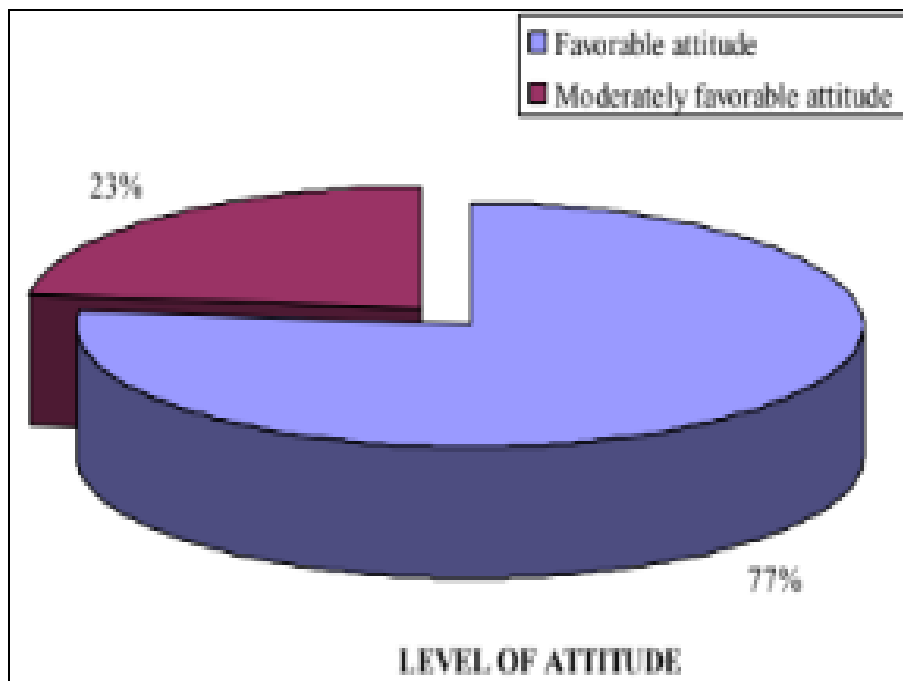
**Fig 1:** Percentage distribution of knowledge score regarding blood and organ donation among adolescents

**Section C:** Frequency and percentage of attitude scores regarding blood and organ donation among adolescents.

**Table 4:** Frequency and percentage of attitude scores regarding blood and organ donation among adolescents.

S. No	Level of Attitude	Frequency (F)	Percentage %
1	Favorable attitude	77	77
2	Moderately favorable attitude	23	23
3	Unfavorable attitude	-	-
	Total	100	100

**Table 4** Showed that 77 (77%) had favorable attitude, 23(23%) had moderately favorable attitude and 0(0%) had unfavorable regarding blood and organ donation.



**Fig 2:** Percentage distribution of attitude score regarding blood and organ donation among adolescents

**Section D** Correlation of knowledge scores with attitude scores regarding blood and organ donation among adolescents.

**Table 5:** Mean and standard deviation of adolescents regarding `blood and organ donation among adolescents. n=100

S. No	Variable	Mean	Standard Deviation
1	Knowledge	17.81	5.69
2	Attitude	54.56	5.77

Table 5 Showed that mean score of knowledge and attitude regarding, blood and organ donation were 17.81(SD± 5.69) and 54.56 (SD±5.77) respectively.

**Table 6:** Correlation of knowledge and attitude scores among adolescents regarding blood organ donation. n = 100

S. No	Variable	Mean scores	Co Efficient of co r relation	Table Value
1	Knowledge	17.81	0.268	0.195
2	Attitude	54.56		

(DF: 98) (P< 0.05=0.195)

Table 6 showed that there was positive correlation (r = 0.268) of knowledge and attitude regarding blood and organ donation among adolescents at 0.05 level

**Section E**

Association of knowledge scores regarding blood and organ donation among adolescents with their selected demographic variables.

**Table 7:** Association of knowledge scores regarding blood and organ donation among adolescents with their selected demographic variables n = 100

S. No	Demographic Variables	Level of knowledge						X2	Table Value	Inference
		Adequate		Moderately adequate		Inadequate				
		No	%	No	%	No	%			
<b>1</b>	<b>Age</b>									
1.1	14 –17 yrs.	2	2	9	9	17	17	13.58	5.99	(S)
1.2	18 – 21yrs	8	8	48	48	16	16	(DF=4)		
<b>2</b>	<b>Sex</b>									
2.1	Male	6	6	43	43	22	22	1.43	5.9	(N.S)
2.2	Female	4	4	14	14	11	11	(DF=4)	9	
<b>3</b>	<b>Religion</b>									
3.1	Hindu	8	8	49	49	30	30			(N.S)
3.2	Christian	2	2	7	7	2	2			
3.3	Muslim	-	-	1	1	1	1	2.067	9.4	
3.4	Others	-	-	-	-	-	-	(DF=6)	9	
<b>4</b>	<b>Family Type</b>									
4.1	Nuclear family	7	7	41	41	23	23	<b>0.056</b>	<b>5.9</b>	(N.S)
4.2	Joint family	3	3	16	16	10	10	(DF=4)	9	
		Adequate		Moderately Adequate		Inadequate				
		No	%	No	%	No	%			
<b>5</b>	<b>Education</b>									
5.1	Primary Education	3	3	24	24	21	21			
5.2	Secondary Education	5	5	13	13	9	9			
5.3	Higher Secondary	1	1	8	8	1	1	6.63		
5.4	Education Graduate	1	1	12	12	2	2	(DF= 6)	15.51	(N.S)
<b>6</b>	<b>Health Resources</b>									
6.1	Television Programme	8	8	37	37	16	16			
6.2	Radio Programme	-	-	3	3	5	5	5.74		
6.3	News paper	2	2	17	17	12	12	(DF=4)	9.49	(N.S)
<b>7</b>	<b>Registration</b>									
7.1	Yes	7	7	- 58	- 58	- 32	- 32	3.52	5.99	(N. S)
7.2	No	3	3					(DF= 2)		

(p< 0.05) N.S = not significant, S = Significant

Chi Square values were calculated to find out the association between knowledge scores of adolescents with their demographic variables regarding blood and organ donation reveals that there is association between knowledge scores when compared to age ( $\chi^2 = 13.58$ ) and there is no-association between knowledge scores when compared to sex ( $\chi^2 = 1.43$ ), Religion ( $\chi^2 = 2.067$ ), family

type ( $\chi^2 = 0.056$ ), Education ( $\chi^2 = 6.63$ ), Health Resources ( $\chi^2 = 5.74$ ) and Registration ( $\chi^2 = 3.52$ ).

**Section F**

Association of attitude scores regarding blood and organ donation among adolescents with their selected demographic variables.

**Table 8:** Association of attitude scores regarding blood and organ donation with with their selected demographic variables. n= 100

S. No	Demographic Variables	Level of Attitude						X2	Table Value	Inference
		Favorable		Moderately favorable		Unfavorable				
		No	%	No	%	No	%			
<b>1</b>	<b>Age</b>									

1.1	14 – 17 yrs.	18	18	10	10	-	-	3.55	3.84	(NS)
1.2	18 – 21 yrs.	59	59	13	13	-	-	(df=4)		
2	<b>Sex</b>									
2.1	Male	50	50	21	21	-	-	5.98		
2.2	Female	27	27	2	2	-	-	(df=4)	3.84	(S)
3	<b>Religion</b>									
3.1	Hindu	67	67	20	20	-	-			
3.2	Christian	10	10	1	1	-	-			
3.3	Muslim	-	-	2	2	-	-	7.89		
3.4	Others	-	-	-	-	-	-	(df=6)	7.82	(S)
4	<b>Family Type</b>									
4.1	Nuclear Family	54	54	17	17	-	-	0.12 (df=4)	3.84	(N.S)
4.2	Joint Family	23	23	6	6	-	-			
7	<b>Education</b>									
7.2	Primary Education	33	33	15	15	-	-			
7.3	Secondary Education	22	22	5	5	-	-			
7.4	Higher secondary	9	9	1	1	-	-	2.26		
7.5	Education Graduate	13	13	2	2	-	-	(DF=6)	9.49	(N.S)
5	<b>Sources of Information</b>									
5.1	Television Programme	47	47	14	14	-	-			
5.2	Radio Programme	6	6	2	2	-	-	0.02	5.99	(N.S)
5.3	News paper	24	24	7	7	-	-	(DF=4)		
6.	<b>Registration</b>									
6.1	Yes	6	6	1	1	-	-	0.32		
6.2	No	71	71	22	22	-	-	(DF=2)	3.84	(N.S)

( $p < 0.05$ ) NS = Not Significant, S = Significant

Chi Square values were calculated to find out the association (table 7) between the attitude scores adolescents with their demographic variables regarding blood and organ donation reveals that there is association between attitude scores when compared to sex ( $\chi^2 = 5.98$ ), Religion ( $\chi^2 = 7.89$ ) and there is no association between attitude scores when compared to age ( $\chi^2 = 3.55$ ), family type ( $\chi^2 = 0.12$ ), Education ( $\chi^2 = 2.26$ ), sources of Information ( $\chi^2 = 0.02$ ) and Registration ( $\chi^2 = 0.32$ ).

### Discussion

The aim of this present study was to assess the knowledge and attitude regarding blood and organ donation among adolescents in PVP School, Mariappanaplaya, at Bangalore. 100 adolescents were selected for the study by using Non probability purposive sampling technique; the data were collected by using structured interview schedule and collected data was statistically analyzed. This chapter attempts to discuss the findings of the study as per objective. These findings are discussed under the following headings:

- Assess the knowledge regarding blood and organ donation among adolescents.
- Assess the attitude regarding blood and organ donation among adolescents.
- Find out the relationship between knowledge and attitude regarding blood and organ donation among adolescents.
- Find out the association between the level of knowledge regarding blood and organ donation with their selected demographic variables.
- Find out the association between the level of attitudes regarding blood and organ donation with their selected demographic variables.

### Description of the demographic characteristics of adolescents

The data analysis revealed that the highest percentage 72% of adolescents were in the age of 18-21 years. Majority of adolescents 71% were male. Highest percentage 87% of the adolescents was Hindus. Majority 71% of the adolescents were nuclear family. The highest percentage 61% of adolescents got health sources information from Television programme. Majority of adolescents 93% were not registered their names for blood & organ donation. Highest percentage of adolescents 27% had secondary education.

### First objective

#### Assess the knowledge regarding blood and organ donation among adolescents.

The data analysis showed that, the assessment of knowledge regarding blood and organ donation among 100 adolescents revealed 33% had inadequate knowledge, 57% had moderately adequate knowledge and 10% had adequate knowledge. Area wise analysis shows that mean score of physiology of blood is 2.48(SD±1.2), blood donation criteria 3.83(SD ± 1.47), care following blood donation 0.83((SD ± 1.2), safe blood donation 1.43( SD±0.53%), meaning of organ donation 1.37(SD ± 0.70) type of organ donation 0.85(SD ± 0.71), criteria for organ donation 4.97(SD ± 2.21), timing for organ donation 1.92 (SD ± 1.6)and contraindications for organ donation 0.11(SD ±0.3). The overall mean knowledge scores of blood and organ donation among adolescents was 17.79(SD ± 9.39). It revealed that there was a need for creating awareness regarding blood and organ donation. This finding is consistent with the study findings of (2019) where 53.2% had inadequate knowledge about blood donation, and also it is consistent with the study finding of (2019) revealed that

67.9% had lack of awareness regarding organ donation.

### **Second objective**

#### **Assess the attitude regarding blood and organ donation among adolescents.**

The data analysis showed that in assessing the attitude regarding blood and organ donation among 100 adolescents 77% had favorable attitude, 23% had moderately favorable attitude. This finding was supported by the study conducted by Sophia.s Wang *et al.*, (2017) on public attitudes regarding the blood donation and storage of specimens. The study results revealed 42% had favorable attitude regarding blood donation. ky chung a study was conducted in Hong Kong to study the attitudes of local medical students with regard to organ donation. A majority (85%) had a positive attitude but only a (23%) had signed the organ donation card.

### **Third objective**

#### **Find the relationship between knowledge and attitude regarding blood & organ donation among adolescents.**

The data analysis revealed that the relationship between knowledge and attitude score of blood & organ donation among adolescents showed that there is a positive correlation ( $r=0.268$ ) between knowledge score and attitude score of adolescents regarding blood & organ donation. Hence the research H1=There will be significant relationship between knowledge score and attitude score regarding blood and organ donation among adolescents was accepted.

This finding is consistent with the study findings, the results revealed that medical students had highly positive attitude towards organ donation (mean score 4.34,  $\pm 0.46$ ). This may be because the medical students had adequate knowledge regarding organ donation.

### **Fourth Objective**

#### **Find the association between the level of knowledge regarding blood and organ donation with their selected demographic variables.**

The study showed that there was statistically significant association between the level of knowledge with age ( $x^2=13.58$ ) at  $p<0.05$  level. Therefore the research H2= There will be significant association between knowledge score regarding blood and organ donation among adolescents with their selected demographic variables was accepted except for sex, religion, family type, education, health resources, registration.

This finding is consistent with the findings, the results revealed the study samples from different culture and language groups showed difference in the knowledge related to organ donation.

### **Fifth objective**

#### **Find the association between the levels of attitudes regarding blood & organ donation with their selected demographic variables.**

The study showed that there was statistically significant association between the level of Attitude with sex ( $x^2=5.98$ ) and religion ( $x^2=7.89$ ) at  $P<0.05$  level. Therefore the research H3 = There will be significant association between attitude score regarding blood and organ donation

among adolescents with their demographic variables was accepted except for age, type of family, education, health resources, registration.

This finding is consistent with the findings revealed the main reason for not agreeing organ donation was belief of inappropriateness related to religion (25.7%), and there was no significant difference based on gender.

### **Conclusion**

The present study assessed the knowledge and attitude regarding blood and organ donation among adolescents. The result showed that 33% had inadequate knowledge, 57% had moderately adequate knowledge and 10% had adequate knowledge. In attitude 23% had moderately favorable attitude and 77% had favorable attitude. The mean knowledge and attitude scores are 17.81% ( $SD\pm 5.69$ ) and 54.56 ( $SD\pm 5.77$ ). The study revealed there was a positive correlation ( $r=0.268$ ) between knowledge and attitude score of blood and organ donation. This study finding concluded that the adolescents in the community had less knowledge regarding blood and organ donation. The SIM will play an important role in improving the knowledge and positive attitude of adolescents regarding blood and organ donation.

### **References**

1. Lewis, *et al.* Medical surgical nursing. (7<sup>th</sup> ed.). New Delhi: Elsevier publications. 2007;237:1227.
2. Semltzer S. Text book of Medical surgical nursing. (8<sup>th</sup>ed.). Philadelphia: lippincott- Raven publishers, 2015, 1004-1206.
3. Basavanthappa BT. "Nursing theories".1st edition. Jaypee brothers, 2009, 171-3.
4. Dewit S. Essentials of medical – surgical nursing (4<sup>th</sup> ed.). Pennsylvania: Saunders company publishers, 1998, 314.
5. Potter P. Fundamentals of nursing. (3<sup>rd</sup>ed.). Missouri: Mosby publishers, 1992, 298-879.
6. <https://www.Deccanherald.com/states/karnataka/2018/dec/30/constable-leads-hundreds-to-donate-blood-and-pledge-organs-1918334.html>.
7. <http://faqs.org/healthtopics/62/?Blood-donation.donation>. HTML.
8. <https://www.organdonation.nhs.uk/get-involved/news/nhsbt-recruiting-for-organ-donation-ambassador-programme/>