

# Effectiveness of Video Assisted Teaching Programme on Umbilical Cord Blood Banking Among B.Sc. Nursing IV Year Students in A Selected Nursing College, Bangalore.

Mrs. Aruna J<sup>1</sup>, Mrs. Arya S S<sup>2</sup>

<sup>1,2</sup>Professors, Pediatric Nursing, Mount Shepherd College of Nursing, Bangalore.

## Abstract:

**Background:** Umbilical cord blood has shown to be a suitable source of hematopoietic stem cell based therapies that are increasingly being utilized with promising results in both malignant and non-malignant disorders. Awareness of umbilical cord blood banking is lacking for nurses, health professionals and antenatal mothers. B.Sc. Nursing 4<sup>th</sup> year students, who are going to become professional nursing practitioners very soon, can play a vital role in health promotion if adequately educated.

**Aim:** To assess the effectiveness of Video assisted teaching programme on umbilical cord blood banking among the B.Sc. [Nursing] 4<sup>th</sup> year students in a selected Nursing College, Bangalore.

**Methods:** A quantitative approach with a quasi-experimental one-group pre-test post-test design was adopted. Fifty B.Sc. Nursing 4<sup>th</sup> year students were selected using purposive sampling. Data were collected using a structured knowledge questionnaire. A Video assisted teaching programme was administered, followed by a post-test. Data were analyzed using descriptive and inferential statistics.

**Results:** The mean post-test knowledge and attitude scores were significantly higher than the pre-test scores ( $p < 0.05$ ). The Video assisted teaching programme was effective in improving both knowledge on umbilical cord blood banking.

**Conclusion:** Video assisted teaching programme are effective educational strategies to enhance awareness toward umbilical cord blood banking among B.Sc. [Nursing] 4<sup>th</sup> year students.

**Keywords:** Umbilical cord blood banking, Video assisted teaching programme, Knowledge.

## INTRODUCTION:

Since ages placenta was considered as a biological waste and was discarded. But now after knowing its unbelievable uses, it is considered as a pure blessing for the medical science. Stem cell from umbilical cord is said to treat about 80 diseases, and have been used in more than 20,000 transplants worldwide. In India approximately 42,434 births occur daily, which results in discarding 42,434 umbilical cords a day. So, the storage of stem cells derived from umbilical cord can prove to be best possible insurance against life threatening diseases.

Since the first human cord blood transplant, cord blood banks have been established worldwide for the collection and cryopreservation of cord blood. Laboratory results show that compared with human leukocyte antigen matched unrelated bone marrow transplant, cord blood has many advantages including

prompt availability of the transplant and decrease of graft vs. host disease and better long term immune recovery resulting in a similar long term survival.

**Objectives:**

1. To assess the pretest and post-test level of knowledge among B.Sc. [Nursing] 4<sup>th</sup> year students regarding umbilical cord blood banking.
2. To determine the effectiveness of the video assisted teaching programme on knowledge regarding umbilical cord blood banking.
3. To find out the association between the level of knowledge regarding umbilical cord blood banking with their selected demographic variables.

**Hypothesis:**

H<sub>1</sub>: There is a significant difference between pre-test and post-test knowledge scores regarding umbilical cord blood banking.

H<sub>2</sub>: There is a significant association between the knowledge of the B.Sc. [Nursing] 4<sup>th</sup> year students regarding umbilical cord blood banking and their selected demographic variables.

**Methodology:**

Research Design: Quasi-experimental one-group pre-test post-test research design

Setting: Ambika College of Nursing, Nelamangala, Bangalore.

Population: B.Sc. Nursing IV year students

Sample Size: 50 members

Sampling Technique: Purposive sampling

**Inclusion Criteria:**

- Members willing to participate
- Available during data collection

**Tool for Data Collection:**

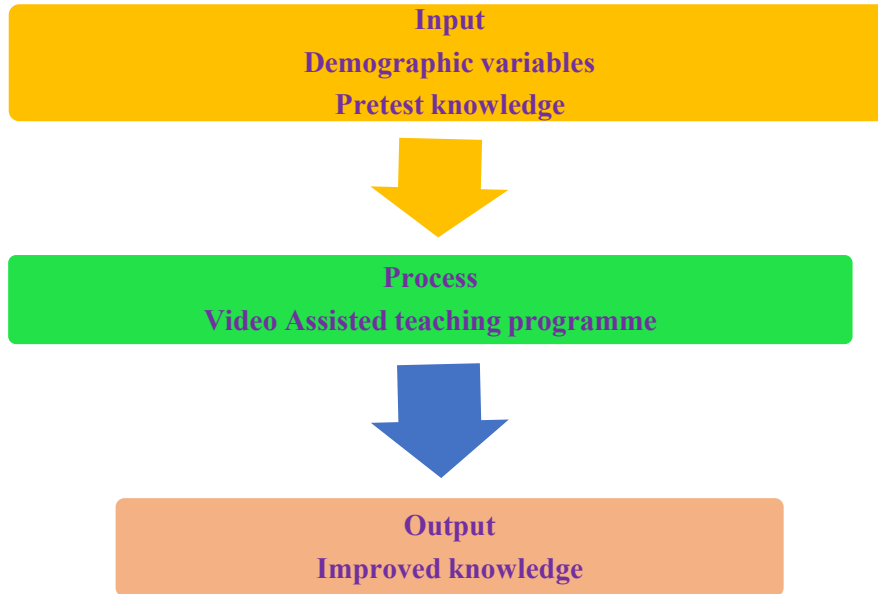
Structured Knowledge Questionnaire (32 items)

**Intervention:**

The video-assisted teaching program conceptualized for this research aimed at enhancing knowledge regarding umbilical cord blood banking among the B.Sc. Nursing IV year students. The program had been developed with consultation from Hematologists, Neonatologists, Academic Clinicians and educational experts in an endeavor to ensure that the contents were indeed informative, entertaining, and age appropriate. Video content was prepared to cover all the fundamental aspects of umbilical cord blood, types and indications of umbilical cord blood banking, processing, testing and storage of umbilical cord blood. It also tackled some ethical and legal issues about umbilical cord blood banking.

The intervention was conducted for a period of one week with pre-and post-assessment periods to measure the effectiveness of this intervention. The participants included 50 B.Sc. Nursing IV year students from Ambika College of Nursing, Nelamangala, Bangalore, who were selected through purposive sampling.

**Conceptual Framework (Modified General Systems Theory)**



**Results:**

**Table 1: Aspect wise Pre-test Mean, Standard deviation and Mean percentage of the knowledge scores on Umbilical cord blood banking**

No.	Knowledge aspects	Statements	Max. score	Range	Knowledge score		
					Mean	Mean %	SD
I.	Umbilical cord blood	8	8	7	4.5	56.67	1.47
II.	Process of Umbilical cord blood banking	18	18	9	4.72	26.2	2.07
III.	Benefits of Umbilical cord blood banking	6	6	6	2.5	42.2	1.41
	Combined	32	32	22	11.8	36.8	2.86

**Table 2: Aspect wise post-test Mean, Standard deviation and Mean percentage of the knowledge scores on Umbilical cord blood banking**

No.	Knowledge aspects	Statements	Max. score	Range	Knowledge score		
					Mean	Mean %	SD
I.	Umbilical cord blood	8	8	4	6.97	86.6	0.97
II.	Process of Umbilical cord blood banking	18	18	8	12.06	67.03	2.42
III.	Benefits of Umbilical cord blood banking	6	6	3	4.95	82.5	0.92
	Combined	32	32	15	23.95	74.84	1.76

**Table 3: Mean, SD and Mean percentage of Enhancement of knowledge scores and its statistical significance N=50**

No.	Knowledge aspects	Enhancement	p- value
-----	-------------------	-------------	----------

		Max. score	Mean	SD	Mean%	Paired 't' test	
I.	Umbilical cord blood	8	2.4	1.19	30	15.68*	p<0.05
II.	Process of Umbilical cord blood banking	18	7.38	3.34	41.01	17.16*	p<0.05
III.	Benefits of Umbilical cord blood banking	6	2.41	1.04	40.27	17.98*	p<0.05
	Combined	32	12.20	3.09	38.12	30.4*	p<0.05

Note: \*Significant at 5% level of significance for df=49 (i.e. p<0.05)

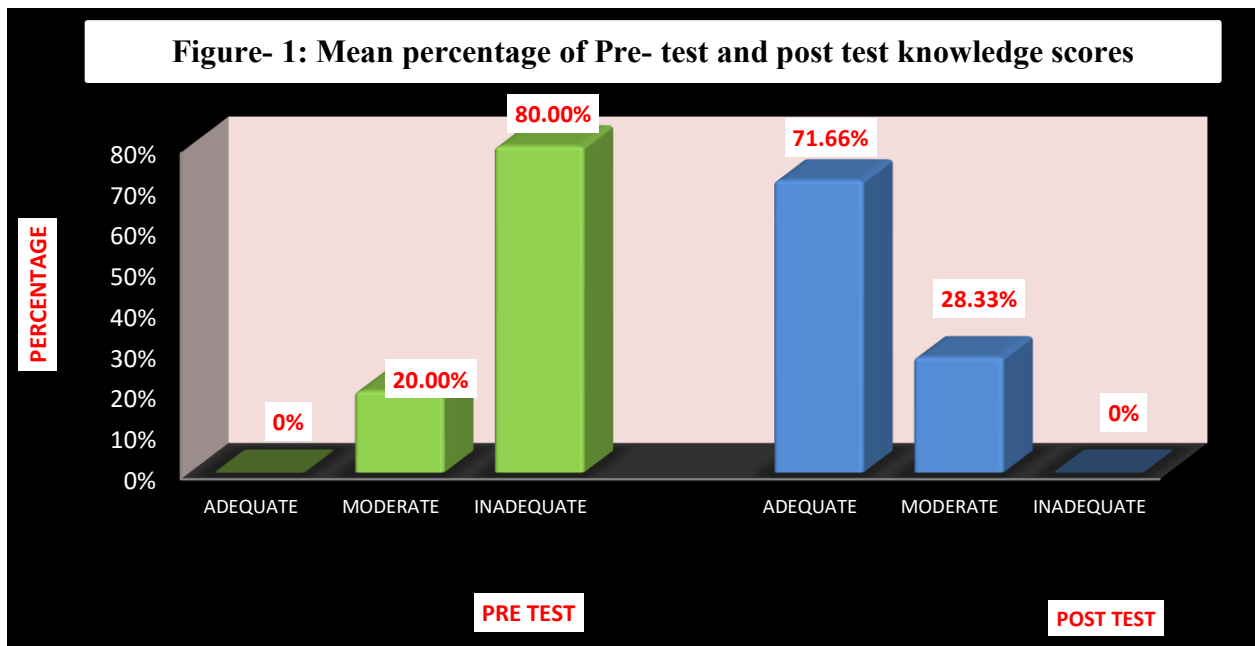


Table- 4: Association between the Pretest knowledge and the selected demographic variables  
N=50

S.No.	Demographic Variables	Knowledge		Chi-Square value	Table Value	Inferences
		Inadequate	Moderate			
1.	Age					
	a) 19-21 years	41	3	4.1	3.84	S
	b) >21 years	4	2		df=1	
2.	Marital Status					
	a) Married	2	1	2.29	3.84	NS
	b) Unmarried	44	3		df=1	
3.	Religion					
	a) Hindu	34	3	0.563	3.84	NS
	b) Christian	11	2		df=1	

4.	Hobbies					
	a) Reading Books	15	1		5.99	
	b) Playing games	25	2	1.52	df=2	NS
	c) Drawing Picture	5	2			
5.	Area of Residence					
	a) Urban area	11	1	4.9	3.84	S
	b) Rural area	34	4		df=1	
6.	Area of Interest					
	a) Pediatrics	14	1			
	b) Psychiatry	4	1	1.82	7.84	NS
	c) Adult health	2	1		df= 3	
	d) Obstetrics	24	3			
7.	History of previous attendance to conference or health education related to umbilical cord blood banking					
	a) Yes	3	1	9.66	3.84	S
	b) No	42	4		df= 1	
8.	History of visiting any child who has survived by the treatment of umbilical cord blood transplantation					
	a) Yes	4	1	6.77	3.84	S
	b) No	41	4		df= 1	
9.	Source of health information					
	a) Mass media	19	2	4.2	5.99	NS
	b) Professional Organizations	14	3		df=2	
	c) Health personnel	11	1			

### Discussion

The present study demonstrated a significant improvement in knowledge regarding Umbilical cord blood banking following the video assisted teaching programme. The findings are consistent with previous studies conducted among staff nurses, which reported improved awareness and favorable attitudes after educational interventions. The interactive session following the teaching programme and use of simple language may have contributed to better comprehension and retention of information.

A significant association was found between four demographic variables such as Age, Area of residence, and history of previous attendance to conference or health education related to umbilical cord blood banking, history of visiting any child who has survived by the treatment of umbilical cord blood transplantation and source of health information with their knowledge scores.

**Conclusion**

The video assisted teaching programme was effective in improving regarding Umbilical cord blood banking among B.Sc., Nursing IV year students. Educating Nursing students can have a multiplier effect in promoting awareness at the grassroots level.

**Recommendations**

- Regular educational programmes for Nursing students and staff nurses
- Replication of the study with a control group and larger sample.

**Limitations**

- Small sample size
- Absence of a control group
- Short follow-up period

**References:**

1. DC Dutta. (2018). Textbook of Obstetrics. 9<sup>th</sup> edition. New Delhi: Jaypee Brothers medical publishers.
2. Myles. (2009). Text book of Midwives. 15<sup>th</sup> edition. London: Elsevier Publications.
3. Nima Bhaskar. (2012). Text book of Midwifery and Obstetrical Nursing. 1<sup>st</sup> edition. Bangalore: EMMESS Medical publishers.
4. V Padbidri E, I Anand. (2006). Text book of Obstetrics. 1<sup>st</sup> edition. New Delhi: Icon Publications.
5. Ayushi A Mistry, Ameen A, Amin (2018) Knowledge of umbilical cord blood banking among obstetricians and mothers in Anand and Kheda district, Gujarat, India. Journal of family medicine and primary care. 7(5), 1032-1036.
6. Dunia Jwdat, Sulaiman Aitwijri, Hadeel Alsemari, Mayssasaade, Ahmed Alaskar (2018). Public Awareness on cord blood banking in Saudi Arabia: International Journal of stem cell.
7. H Dine, N.H Sahin. (2009). Pregnant women's knowledge and attitudes about stem cells and cord blood banking. Journal of International Nursing Review.
8. Jordan H, Perlow. (2006). Patient's knowledge of umbilical cord blood banking. Journal of reproductive medicine.