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## A study of the structured teaching program's effectiveness in imparting knowledge about cord blood bank knowledge to B.Sc. nursing students in Meerut, Uttar Pradesh

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### Abstract

Hematopoietic stem cells from umbilical cord blood are easily obtained and can be used to treat a range of cancerous and non-cancerous conditions in both adults and children. A research was carried out to determine how well B.Sc. nursing students in Meerut, Uttar Pradesh, learned about cord blood banks using a structured teaching programme. Pre-experimental research was conducted, using a single group pre-test and post-test design. One of the independent variables was an organised curriculum on cord blood banks. To choose the samples, a suitable non-probability sampling approach was applied. 60 B.Sc. nursing students from Meerut, Uttar Pradesh, are included in the study. The pre-test mean was 9.52 with that of SD  $\pm 3.15$  and post-test mean was 17.62 with that of SD  $\pm 3.59$ . The pre-test knowledge level of all the adolescent was average 58.33%, 41.67% inadequate and 0% adequate and post-test knowledge level 30% average, 70% adequate and 0% inadequate knowledge. The obtained t-value (14.33) was statistically highly significant at 0.05 levels.

**Keywords:** STP, cord blood bank, umbilical cord

### Introduction

One of the most significant things is that, on the day of the baby's birth, parents undoubtedly have ideas about the future of their offspring and take tremendous delight in seeing each stage of the child's growth and development.

It is the responsibility of nurses to offer professional education that emphasises the value of cord blood and its potential for storage. After the cord has been isolated from the mother and child, nurses play a crucial role in gathering the umbilical cord blood. However, there is a need to increase nurses' knowledge of umbilical cord blood stem cell collection, preservation, and utilisation because many healthcare providers have misconceptions, ignorance, and insufficient knowledge of this information. (Joshi Ujala, 2017) [2].

Currently, leukaemia, anaemia, and autoimmune illnesses are among the immune system ailments that cord blood stem cells are utilised to treat. These stem cells are mostly utilised to treat youngsters, but they are also being used to treat adults who have just finished chemotherapy. Future specialists anticipate that the entire potential of umbilical cord blood to cure blood problems remains undiscovered, but they do think it to be a significant source of hematopoietic stem cells. Further study is necessary to determine whether other forms of stem cells, such as induced pluripotent stem cells, are more appropriate for treating illnesses unrelated to blood disorders. ACOG.

**Need for the Study:** Stem cells are abundant in umbilical

cord fluid and have the potential to treat blood disorders such as anemia, cancer, and immune system diseases that weaken the body's defenses. The fluid yields ten times more stem cells than bone marrow and can be easily harvested. Additionally, cord blood stem cells have a lower risk of rejection compared to adult stem cells and rarely carry infectious diseases. Traci C. Johnson, MD.

### Objectives of the study

- To assess the pre-test level of knowledge regarding cord blood bank among B.Sc. Nursing students.
- To assess the effectiveness of structured teaching programme on knowledge regarding cord blood bank among B.Sc. Nursing students (Post-test)
- To compare the pre-test and post-test level of knowledge among B.Sc. Nursing students.
- To find out the association between the post-test levels of knowledge regarding cord blood bank with their demographic variables.

### Hypothesis

- **H<sub>1</sub>:** There will be significant difference between pre-test and post-test level of knowledge scores of B.Sc. Nursing students on cord blood bank.
- **H<sub>2</sub>:** There will be significant association between post-tests level of knowledge regarding cord blood bank with their selected demographic variables.

**Assumptions**

- The nursing students may have minimal knowledge regarding cord blood bank.
- Structured teaching programme provides an opportunity for learning and better understanding regarding cord blood bank.

**Limitation**

- The study data collection period is only for four weeks.
- The study is limited to B.Sc. Nursing students.

**Sample Size**

60 B.Sc. Nursing students.

**Sampling technique**

Non –probability convenient sampling technique was used for the present study.

**Criteria for sample selection**

**Inclusion Criteria**

- Students studying B.Sc. Nursing.

- Nursing students who are willing to participate during the study

**Exclusion Criteria**

- Nursing students who were absent at the time of data collection
- Nursing students attended classes on cord blood bank.

**Methods and Materials**

This study was conducted with 60 B.Sc. Nursing Students samples in quantitative approach, pre – experimental design, one group pre-test and post-test design, sampling selection was done by convenient sampling technique. The study was conducted in Kalka College of Nursing, Meerut, Uttar Pradesh. Pre-existing knowledge was assessed by using semi structured questionnaires after the pre-test, structured teaching program was given regarding cord blood bank using PPT and Booklets after 7 days post test was conducted using the same tool.

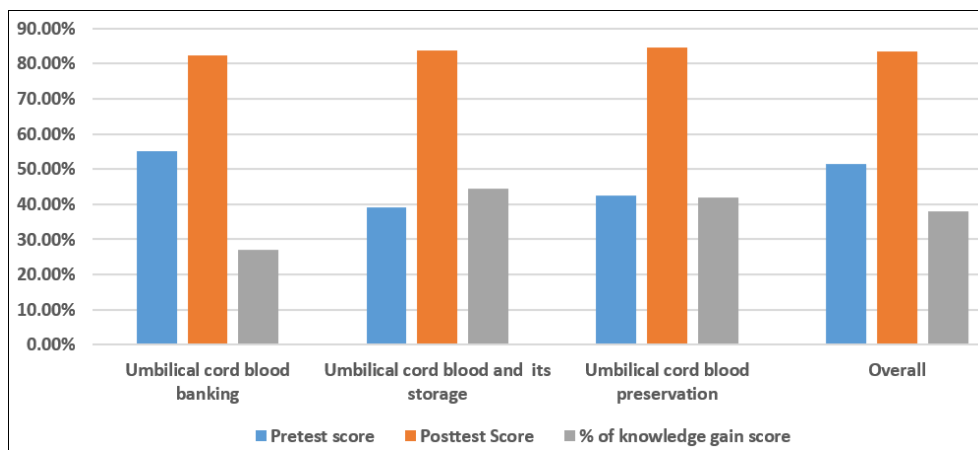
**Results**

**Table 1:** Each Domain wise Pretest and Post-test Percentage knowledge regarding cord blood bank

Domains	Pretest score	Posttest Score	% of knowledge gain score
Umbilical cord blood banking	55.17%	82.26%	27.09%
Umbilical cord blood and its storage	39.14%	83.68%	44.54%
Umbilical cord blood preservation	42.56%	84.54%	41.98%
Overall	51.47%	83.49%	37.87%

The above table 1 shows each domain wise knowledge gain score among 60 B.Sc. Nursing students. In pre-test students are having 45.62% of knowledge score and in post-test they

are having 83.49%. So they gained 37.87% after administration of Structured Teaching Programme.



**Fig 1:** Domain wise pretest and post-test percentage of knowledge score

**Table 2:** Each domain wise pre-test and post-test level of knowledge regarding cord blood bank, N=60

Level of knowledge	Pre-test		Post-test	
	N	%	N	%
Inadequate	25	41.67%	0	0.0%
Moderate	35	58.33%	18	30%
Adequate	0	0%	42	70%
Total	60	100.0%	60	100.0%

Table 2 depicts that to assess the pretest and post-test level of level of knowledge regarding cord blood bank. Majority (58.33%) of the students had average level of knowledge

regarding cord blood bank and (41.67%) had inadequate knowledge. Nobody had adequate level of knowledge regarding cord blood bank in the pre-test. Majority (30%) students had average level of knowledge regarding cord blood bank and none of them are inadequate knowledge and (70%) had adequate level of knowledge regarding cord blood bank in the post-test.

**Conclusion**

The current study emphasises the value of cord blood banks for nursing students. Since umbilical cord blood can be collected quickly after delivery and is widely available, it is

the responsibility of nurses to educate expectant mothers and their families about the advantages of cord blood banking, collection, and storage, as well as the features and availability of cord blood banks. Thus, the researcher acknowledged the significance of teaching B.Sc. nursing students who will work as staff nurses. These students will have more responsibilities and roles, including informing parents accurately. They also need to receive proper training in standard operating procedures for collection and storage to maintain the sterility and calibre of the collection unit.

**Conflict of Interest:** Not available.

**Financial Support:** Not available.

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### How to Cite This Article

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