

ORIGINAL ARTICLE

A Study to assess the Effectiveness of Planned Teaching Programme on Knowledge Regarding Cord Banking among 3rd Year Basic B.Sc. Nursing Students in the Selected Nursing College of the City

Suchismita Pati¹, Apurva Guldhe²

HOW TO CITE THIS ARTICLE:

Suchismita Pati, Apurva Guldhe. A Study to assess the Effectiveness of Planned Teaching Programme on Knowledge Regarding Cord Banking among 3rd Year Basic B.Sc. Nursing Students in the Selected Nursing College of the City. J Nurse Midwifery Matern Health. 2025; 11(2): 71-75.

ABSTRACT

Background: Cord banking refers to as the collection, processing, and long-term storage of umbilical cord blood (UCB) after a baby's birth. UCB contains stem cells, which can be used to treat various blood and immune system disorders. There are two main types of cord blood bank i.e. private and public. The purpose of the cord banking is primarily for family use. And to build the donor pool for individuals who needs a stem cell transplantation. UCB stem cell are used in bone marrow transplantation to help rebuild the bone marrow and restore the patients immune system. UCB is collected from the umbilical cord and placenta after the birth of baby. The UCB is processed and cryopreserved (frozen) at a specialized cord blood bank.

Objectives:

1. To assess the pre-test knowledge regarding cord banking among Basic B.Sc. Nursing 3rd year students.
2. To evaluate the effectiveness of planned teaching program regarding cord banking among Basic B.Sc. Nursing 3rd year students.
3. To find out the association between pre-test knowledge score and their selected demographic variable in the basic B.Sc. Nursing 3rd year students with cord banking.

Material and method: This study is based on a pre-experimental one group pre-test post-test design was adopted for the study the sample size was 30 and the basic

AUTHOR'S AFFILIATION:

¹ Associate Professor, Sumantai Wasnik Institute of Nursing, Nagpur, Maharashtra, India.

² Tutor, Sumantai Wasnik Institute of Nursing, Nagpur, Maharashtra, India.

CORRESPONDING AUTHOR:

Suchismita Pati, Associate Professor, Sumantai Wasnik Institute of Nursing, Nagpur, Maharashtra, India.

E-mail: suchismitapati1@gmail.com

➤ Received: 21-05-2025 ➤ Accepted: 01-08-2025



Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons Attribution NonCommercial 4.0 License (<http://www.creativecommons.org/licenses/by-nc/4.0/>) which permits non-Commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the Red Flower Publication and Open Access pages (<https://www.rfppl.co.in>)

B.Sc. 3rd year nursing students from nursing colleges using convenient sampling technique.

Result: The result revealed that the computed value of knowledge is $t=15.50$, $p<0.05$ which showed significance in the effect of planned teaching program there was no significant association cord banking among basic B.Sc.

3rd year nursing students and selected demographic variables like age, gender, belonging area, previous knowledge, education of parents and source of knowledge in cord banking acceptance of parents the result showed a positive effect by the planned teaching program by increasing the level of knowledge among basic B.Sc. 3rd year nursing students regarding cord banking.

Conclusion: Hence it is concluded that, based on the above stated findings it was concluded undoubtedly that the prepared material by the researcher in the form of structure teaching students to improve their Knowledge on cord banking.

KEYWORDS:

• Effectiveness • Basic B.Sc. Nursing student's • Knowledge • Cord banking

INTRODUCTION

Umbilical cord blood (UCB) contains stem and progenitor cells capable of restoring hematopoietic and immunological function *in-vivo*. UCB is currently used an alternative source of hematopoietic stem cell for transplantation in patient suffering from hematological malignancies, bone marrow failure and inherited metabolic disorder. In order to facilitate transplantation, large repositories of frozen cord blood units (CBUs) from altruistic donation have been established in many parts of the world and to date there are more than 300000 units stored worldwide. These products have been banked under stringent quality condition, in order to ensure their safety and efficacy.

A number of experts have stated that the use of umbilical cord goes beyond the mere utilization of human tissues for the purpose of treatment. This tissue is also used in research studies: genetic studies, studies to evaluate the effectiveness of new antibiotics, studies to identify new proteins, etc. meanwhile others claim that the law and other norm for the functioning of cord banks are not consistent and are poorly defined. Some of these critics point out that the confidentiality of donor information is handled differently in different places. The fact that private cord bank offers their services as "biological insurance" in order to obtain informed consent by promising the parents that tissues that will be stored ensures the health of their child in the future raises the

issue of whether the consent is freely given or given under coercion.

OBJECTIVES

1. To assess the pre-test knowledge regarding cord banking among 3rd year Basic B.Sc. Nursing students in college of city.
2. To assess the effectiveness of planned teaching programme on knowledge regarding cord banking among 3rd year Basic B.Sc. Nursing students.
3. To find out association between knowledge score with their demographic variables.

ASSUMPTIONS

1. Nursing students need proper information regarding importance of practicing cord banking.
2. The planned teaching programme will be helpful to improve knowledge of the nursing students regarding cord banking.

HYPOTHESIS

H₁- There will be significant difference between pre-test and post-test level of knowledge score regarding cord banking among 3rd year Basic B.Sc. nursing students at selected nursing college of the city.

H₂- There will be significant association

between pre-test knowledge score regarding cord banking among 3rd year Basic B.Sc. nursing students with the selected demographic variables.

METHODOLOGY

Research approaches: Quantitative research approach

Research design: one group pre-test and post-test research design

Setting of the study: selected nursing college in Nagpur.

Sample: 3rd year Basic B.Sc. nursing students

Sample size: 30

Sampling technique: Convenient sampling technique

DESCRIPTION OF TOOLS:

Section A: It consists of demographic data which include age of 3rd year Basic B.Sc. nursing students, gender, education status of parents, belonging area, source of knowledge.

Section B: It consist of knowledge questionnaires on cord banking for 3rd year Basic B.Sc. nursing students.

Result: Major Finding of the Study and Discussion

Section I: Deals with frequency and percentage wise distribution of 3rd year Basic B.Sc. nursing students with regards to demographic variables.

- According to age, 25(53.3%) students belong to 20-22 year of age group, 03(10%) students belong to 19-20 year of age group, 02(6.6%) students belong to 22-23 year of age group.
- According to gender, 21(70%) students are female by gender and 09(30%) students are male by gender.
- According to religion, 23(76.6%) students belong to Hindu religion, 5(16.6%) students belong to Buddhists religion, 2(6.6%) students belong to other religion.
- According to their parent's education, 23(76.6%) student's parents belongs to non-medical field and 7(23.3%) student's parents belongs to medical field.
- According to their previous knowledge, 22(73.30%) students had previous

knowledge and 08(26%) students does not had previous knowledge.

- According to the source of knowledge, 19(63.3%) student's knowledge source were people around them, 6(20%) student's knowledge source were other source, 3(10%) student's knowledge source were mass media, 2(6.6%) student's knowledge source were books.
- According to the belonging area, 25(83.3%) students were resident at urban area and 5(16.6%) students were resident at rural area.

Section II: Deals with assessment of levels of knowledge regarding cord banking among 3rd year Basic B.Sc. Nursing students in selected nursing college.

- Pre-test reveals that maximum students 18(60%) had good knowledge, 7 (23.3%) had very good knowledge, 4(13.3%) had poor knowledge and 1(3.3%) had excellent knowledge.
- Post-test reveals that maximum students 29(96.6%) had excellent knowledge, 1(3.3%) had very good knowledge.

Section III: Deals with comparison of the knowledge regarding cord banking 1 among 3rd year Basic B.Sc. Nursing students in selected nursing colleges at time of pre-test and post-test.

- Reveals that the mean pre-test value is 16.4(SD=3.49), was increased to 27.5(SD=1.80) in the post-test. The calculated t-value is 15.50 was greater than table value at $p < 0.05$ level of significance.

The proposed null hypothesis was:

H₀- There will be no significant difference between pre-test and post-test level of knowledge regarding cord banking among 3rd year Basic B.Sc. nursing students at selected nursing college of the city.

The above-mentioned null hypothesis was rejected and the research hypothesis was accepted, it states that,

H₁- There will be significant difference between pre-test and post-test level of knowledge regarding cord banking among 3rd year Basic B.Sc. nursing students at selected nursing college of the city.

It is inferred that, the planned teaching

programme on knowledge regarding cord banking is effective.

Section IV: Deals with associations between the levels of knowledge score regarding of cord banking among 3rd year Basic B.Sc. Nursing students with their selected demographic variables.

- This section includes association of level of knowledge regarding cord banking with their demographic variables. The overall mean of study related to cord banking was calculated and (chi square) test was use for findings. There was association between post-test knowledge regarding cord banking and few of the demographic factors like age and source of knowledge. Thus, it is inferred that the effectiveness of planned teaching programme on knowledge regarding cord banking was independent of most of selected demographic variable.

DISCUSSION

- The study was conducted to determine the effectiveness of a planned teaching program on knowledge regarding cord banking among 30 students of 3rd year basic B.Sc. in the different nursing colleges of Nagpur district. The research approach used was evaluative approach with one group pre-test and post-test, pre-experimental design. Descriptive hand inferential statistics were used to analyses the data. The planned teaching program was found to be effective in increasing the knowledge of students on knowledge regarding cord banking is 15.50, $p < 0.05$.
- A study was conducted to determine the effectiveness of a planned teaching program on knowledge regarding cord banking among 3rd year basic B.Sc. students. The study adopted evaluation approach with pre-test control group design. The data were collected planned interview schedule and observational checklist. Findings showed that there was significant difference between pre-test I
- ($k_1 = 55\%$) and post-test II ($k_2 = 92\%$) knowledge score and ability scores. This

indicated planned teaching program contributed to enhance knowledge and ability scores of knowledge regarding cord banking.

Declaration of No Conflict of Interest

- The authors of this study declare no conflict of interest in the execution, analysis, or publication of this research. No financial, professional, or personal affiliations influenced the study's outcomes or the structured teaching program's effectiveness. This research was conducted solely for academic purposes to enhance knowledge and public awareness of dengue fever prevention among adolescents.

Funding: Self, no external source of funding received.

Ethical Clearance Statement

This study "*A Study to assess the Effectiveness of Planned Teaching Programme on Knowledge Regarding Cord Banking among 3rd Year Basic B.sc. Nursing Students in the Selected Nursing College of the City*" was conducted with strict adherence to ethical research practices. The research protocol was reviewed and approved by an appropriate institutional ethics committee. Participants were informed about the purpose, procedure, and expected outcomes of the study. Informed consent was obtained from participants and their guardians, ensuring confidentiality and voluntary participation. The study was designed to avoid any physical or psychological harm to participants and followed all ethical guidelines for research involving human subjects.

CONCLUSION

Hence it is concluded that planned teaching was found to be effective in improving the knowledge regarding cord banking and based on the above stated findings it was concluded undoubtedly that the prepared material by the researcher in the form of structure teaching students to improve their Knowledge on cord banking.

REFERENCES

1. Serrano-Delgado V.M., Novello-Garza B., Valdez- Martinez E. Ethical issues relating the banking of umbilical cord blood in Mexico.

- BMC Med Ethics. 2009 Aug <https://pubmed.ncbi.nlm.nih.gov/term=Central+purpose+of+cord+banking>
2. Laughlin M.J., Eapen M., Rubinstein P., Wagner J.E., Zhang M.J., Champlin R.E., *et al.* Outcomes after transplantation of cord blood or bone marrow from unrelated donors in adults with leukemia N England J Med 2004; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6259528>
 3. Applebaum F.R. The use of bone marrow and peripheral blood stem cell transplantation in the treatment of cancer. CA Cancer J. Clin. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2720821>
 4. Astori G., Larghero J., Bonfini T., Giancola R., Di Riti M., Rodriguez L., Rodriguez M., Mambrini G., Bigi L., Iacone A., Marolleau J.P., Panzani I., Garcia J., Querol S. Ex vivo expansion of umbilical cord blood CD34+ cells in a closed system: a multicentric study. Vox. Sang. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2720821>
 5. Barker J.N., Weisdorf D.J., DeFor T.E., Blazar B.R., McGlave P.B., Miller J.S., Verfaillie CM, Wagner J.E. Transplantation of two partially HLA-matched umbilical cord blood units to enhance engraftment in adults with hematologic malignancy. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2720821>
 6. Miss Sabedi burgo, midwifery part I Wanmaya publication and research center. 1st 2010 march, page No. 95-98,
 7. D'Angelo G., Marseglia L., Granese R., Di Benedetto A., Giacobbe A., Impellizzeri P., Alibrandi A., Ferro E., Palmara A., Manti S., Arrigo T., Salpietro C., Buonocore G., Reiter R.J., Gitto E. Different concentration of human cord blood HMGB1 according to delivery and labour: A pilot study. Cytokine. <https://pubmed.ncbi.nlm.nih.gov/29571040>
 8. Li T., Xia M., Gao Y., Chen Y., Xu Y. Human umbilical cord mesenchymal stem cells: an overview of their potential in cell-based therapy. Expert Opin Biol Ther. <https://pubmed.ncbi.nlm.nih.gov/?term=Umbelical+cord>