

A Study To Assess The Effectiveness of Structured Teaching Programme on Knowledge Regarding Cord Blood Banking Among Female Graduates At A Selected College, Tirupati.

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Abstract

Background:

Cord blood banking is the most important topic of science and technology today. Female graduates need to understand about cord blood banking hence those are going to give birth to the baby in the future.

Aim: *To evaluate the effectiveness of structured teaching programme on female graduates' knowledge regarding cord blood banking.*

Method:

Pre-experimental design (pre and post intervention) was utilized. A total sample of 50 female graduates were recruited in the study. The study was conducted at Sri padmavathi women's degree college at Tirupati. Data was collected through a structured questionnaire of female graduates knowledge towards cord blood banking.

Results: *The results revealed that, out of 50 female graduates, 30(60%) were having inadequate knowledge, 16(32%) were having moderate knowledge, 4(8%) were having adequate knowledge before structured teaching programme. As well as 70 per cent were having moderate knowledge, 24 per cent were having adequate knowledge and remaining (6%) were having inadequate knowledge respectively.*

Conclusion and recommendation: *The implementation of structured teaching programme was effective and effectively improved female graduates knowledge towards cord blood banking. The study recommended that adequately planned in-service training and awareness programs related to cord blood banking must established to develop female graduates knowledge in order to fit newly developed concepts.*

Key words: *Cord blood banking, Structured teaching programme, Female graduates.*

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I. Introduction

Umbilical cord is the vital direct interlink between mother and foetus, which is always depicted as the relationship of an emotional bonding of motherhood, which is a beautiful experience for a women. When mother gives birth, the blood that remains in the placenta umbilical cord is referred as cord blood.

Cord blood (short for umbilical cord blood) is the blood that remains in the umbilical cord and placenta post-delivery. At or near term, there is a maternal-fetal transfer of cells to boost the immune systems of both the mother and baby in preparation for labor. This makes cord blood at the time of delivery a rich source of stem cells and other cells of the immune system. Cord blood contains stem cells that can grow into blood vessels, organs and tissues. These stem cells can be used to treat hematopoietic and genetic disorders. Baby's cord blood can be used for future use.

Cord blood banking is the process of collecting the cord blood and extracting and cryogenically freezing its stem cells and other cells of the immune system for potential future medical use.

There was a time before the 1990s when the umbilical cord and its blood were considered medical waste. Today, parents bank or store their baby's umbilical cord blood because the stem cells it contains are currently utilized or show promise in the treatment of life-threatening and debilitating diseases.

Luckily for expectant parents, cord blood can be easily collected at the baby's birth via the umbilical cord with no harm to the mother or baby. The procedure is short and non-invasive. The blood may be collected during natural labour as well as caesarean section. This is why pregnancy is a great time to plan to collect and bank a baby's cord blood.

Cord blood has an abundance of stem cells and immune system cells, and the medical uses of these cells has been expanding at a rapid pace. As these cells help the body re-generate tissues and systems, cord blood is often referred to as a regenerative medicine.

Cord blood is currently approved by the FDA for the treatment for nearly 80 diseases, and cord blood treatments have been performed more than 35,000 times around the globe to treat cancers (including lymphoma and leukemia), anemias, inherited metabolic disorders and some solid tumors and orthopedic repair. Researchers are also exploring how cord blood has the ability to cross the blood–brain barrier and differentiate into neurons and other brain cells, which may be instrumental in treating conditions that have been untreatable up to this point. The most exciting of these are autism, cerebral palsy and Alzheimer's.¹

Cord blood taken from a baby's umbilical cord is always a perfect match for the baby. In addition, immediate family members are more likely to also be a match for the banked cord blood. Siblings have a 25 percent chance of being a perfect match and a 50 percent chance of being a partial match. Parents, who each provide half the markers used in matching, have a 100% chance of being a partial match. Even aunts, uncles, grandparents and other extended family members have a higher probability of being a match and could possibly benefit from the banked cord blood.

As most parents would like to bank their babies' cord blood to help safeguard their families, it is often the cost of cord blood banking that is the one reason why they do not. Most cord blood banks have an upfront fee for collecting, processing and cryopreserving the cord blood that runs between \$1,000 and \$2,000. This upfront fee often also includes the price of the kit provided to collect and safely transport the cord blood, the medical courier service used to expedite the kit's safe shipment, the testing of the mother's blood for any infectious diseases, the testing of the baby's blood for any contamination, and the cost of the first full year of storage. There is then often a yearly fee on the baby's birthday for continued storage that runs around \$100 to \$200 a year.

“ Cord blood is useful because it is a source of stem cells that form into blood cells. Cord blood can be used for transplantation in people who need regeneration, that is, ‘regrowth’, of these blood- forming cells”,Wonnacott says.²

The baby’s cord blood will be processed and stored in a laboratory facility, often referred to as a blood bank. The cord blood should be processed and stored in a facility that is accredited by the American Association of Blood Banks (AABB) for the purpose of handling stem cells.³

Cord blood stem cells are pluripotent, which is the ability to differentiate into not only different blood cell types, but potentially into different types of tissue including bone, cartilage, hepatic, pancreatic, neurologic, muscle, epithelial, endothelial and skin (Gluckman,E.,et al,2011). Redefining health in its endeavour to bring a leading edge healing concept is proud to introduce stem cells therapy. stem cell therapy is the most advanced technology available globally to repair the body’s failing system.(Nietfeld et al.,2008)

OBJECTIVES:

1. To assess the level of knowledge regarding cord blood banking among female graduates by pre-test.
2. To assess the effectiveness of structured teaching programme on knowledge regarding cord blood banking among female graduates by post-test.
3. To find out the association between pre test and post test knowledge scores regarding cord blood banking with selected socio-demographic variables.

HYPOTHESES:-

H01 : There is no significant knowledge regarding cord blood banking among female graduates.

H02 : There is no significant association between knowledge of Female graduates regarding cord blood banking with their selected socio- demographic variables.

Material and methods

A Pre-experimental one group pre-test and post-test was adopted.50 female graduates were selected by using convenient sampling technique on the basis of inclusive criteria to assess the knowledge regarding cord blood banking among female graduates by using structured questionnaire.

Pre-Knowledge on cord blood banking among female graduates	Frequency (f)	Percentage (%)	Mean (x)	Standard deviation (s)
Inadequate	30	60.00	14.14	5.66
Moderate	16	32.00		
Adequate	4	8.00		

Post- knowledge on cord blood banking among female graduates	Frequency (f)	Percentage (%)	Mean (x)	Standard deviation (s)
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Inadequate	3	6.00		
Adequate	12	24.00	26.46	4.64
Moderate	35	70.00		

II. Results

In pre-test out of 50 female graduates, 30(60%) were having inadequate knowledge, 16(32%) were having moderate knowledge, 4(8%) were having adequate knowledge in pre-test. In post-test 70 per cent were having moderate knowledge, 24 per cent were having adequate knowledge and remaining (6%) were having inadequate knowledge. The pre-test mean score was 14.14, standard deviation was 5.66 and post-test mean knowledge was 26.46 and the standard deviation was 4.64. The t-value was 14.402 and the p value was 0.000. Hence research hypothesis was accepted. It evidenced that the structured teaching programme improved knowledge regarding cord blood banking among female graduates. The researcher identified that there was significant association between the pre-test knowledge and socio-demographic variables such as age, year of study, residence, education of father and occupation of mother at $p < 0.01$ level and education of mother, occupation of father and income per month was significant at $p < 0.05$ level. The association of post-test knowledge score of subjects with socio-demographic variables such as religion and education of mother are having significant association at 0.01 level and remaining socio-demographic variables (year of study, residence, education of the father, occupation of the mother, occupation of the father, income per month) are having significant association at 0.05 level. Hence the research hypothesis H_2 which stated that there will be significant association between level of knowledge of the female graduates with selected socio-demographic variables was accepted.

III. Conclusion

The present study revealed that female graduates have inadequate knowledge regarding cord blood banking and after structured teaching programme knowledge had improved among female graduates

Nursing implications:

Nursing practice:

- Health education is an essential part of nursing practice. So nurses can play a key role in bringing awareness regarding cord blood banking and emphasis on need develop healthy habits.
- Health education is strong weapon in preventing diseases. Hence nurses working in the hospitals and community health centers have to realize their responsibilities in giving health education to the mothers about cord blood to treat diseases.

Nursing education:

- Nurses should update their knowledge regarding cord blood banking among the population.
- Community nurse health educators can encourage students to participate and conduct awareness camps, in-service education and other education programmes regarding cord blood banking.
- The community health nursing curriculum needs to be strengthened to enable nursing students to develop skills and understanding of prevention of diseases with cord blood.

Nursing administration:

- The nursing administrators should help in providing the adequate resources for conducting teaching programmes in the community regarding cord blood banking.
- The nursing administrators can organize various training and in service education programmes to improve the knowledge of nurses to educate the mothers.

Nursing research:

- There is need of nursing research to be conducted on various aspects of cord blood banking.
- There should be adequate funds to encourage upcoming nurse researches towards cord blood banking.

Delimitations:-

The study was limited to:-

- Female graduates who are in Sri padmavathi women's degree college, Tirupati □ Who were willing to participate during data collection
- Who were available during data collection

IV. Recommendations

On the basis of findings, the following recommendations have been made for further study:

- A similar study can be conducted to assess the knowledge and attitude towards the cord blood banking in general population.
- Information booklet and manuals can also be prepared and distributed to the community about the prevention of diseases with cord blood.
- Follow up study can be conducted to assess the effectiveness of structured teaching regarding cord blood banking among mothers.
- A comparative study can be conducted between urban and rural mothers.
- A study could be conducted to develop a health education pamphlet on benefits of cord blood banking.

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