



A Study To Assess The Effectiveness Of Planned Teaching Programme On Knowledge Regarding Umbilical Cord Stem Cell Banking Among Nursing Students Of Selected College At Mangalore

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ABSTRACT

Since ages placenta was considered as a biological waste and were 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. The aim of the study was to assess the effectiveness of planned teaching programme on knowledge regarding umbilical cord stem cell banking among nursing students. **Objectives of the study** a) to assess the level of knowledge regarding umbilical cord stem cell banking among nursing students. b) to determine the effectiveness of planned teaching programme regarding stem cell banking among nursing students. **Method:** The study was conducted using quantitative research approach. 60 nursing students were selected using purposive sampling technique. One group pre test post test research design was adopted for data collection. Pretest using structured knowledge questionnaire followed by planned teaching programme was conducted on day 1 and post test was conducted on day 7 to assess the gain in knowledge. **Results:** The data was analysed using descriptive statistics and paired t test. The study revealed that in pretest, 68.3% (41) of the students had average knowledge, 25.1% (15) had poor knowledge and 6.66% (6) had good knowledge whereas in post test 18.4% (11) had average knowledge, 3.27% (2) had poor knowledge and 78.3% (47) had good knowledge. **Interpretation and conclusion :** The finding of the study shows that the mean post test knowledge score (17.8 ± 3.74) was higher than mean pretest knowledge score (10.45 ± 3.12). The computed 't' value ($t_{59} = 8.78$) was higher than table value ($t_{59} = 1.67$) at 0.05 level of significance. Thus it was concluded that planned teaching programme was effective in increasing the knowledge regarding umbilical stem cell banking among nursing students.

Key words : umbilical cord, stem cell banking, knowledge ,nursing students, planned teaching programme

Introduction:

“How beautifully everything is arranged by nature, as soon as child enters the world, it finds another ready to take care of it”-Jules Michelet” Mother and baby share a perfect bond from the period of conception and it is she who nurtures and gives the best of everything to her child. And with the advancement of the technologies, she is not just bound to care for her baby at the present but she can now gift her baby with a gift of health, through stem cell and cord blood banking. The first umbilical cord blood transplantation [UCBT] was performed in 1988 in patient with Fanconi’s anemia¹. Over 40,000 UCB transplants (UCBTs) have been performed, in both children and adults, for the treatment of many different diseases, including hematologic, metabolic, immunologic, neoplastic, and neurologic disorders. In addition, cord blood banking has been developed to the point that around 800,000 units are being stored in public banks and more than 4 million units in private banks worldwide¹. The umbilical cord is a rich source of stem cells that can be derived from cord blood and cord tissue and can treat more than 80 diseases leukemia, lymphoma, autoimmune disorders, brain and spinal cord injuries, autism, hearing loss, cerebral palsy, type 1 diabetes and other dangerous conditions and still increasing or under research² Cord blood banking includes the collection, processing and storage of umbilical cord blood for any future needs that are related to the family or others. There are two types of cord blood banks which are for every individual. Today there are over 40 cord blood banks worldwide, both public and private.

- a) Public banks- collect donated cord blood for research or for use by anyone who may need it and no charge is associated with this service.
- b) Private banks- store cord blood for personal use by the family. There is fee associated with this service³

Umbilical cord blood stem cells are located in the blood of the umbilical cord after birth. They are similar to hematopoietic stem cells in adults, but they are less mature and can differentiate into various types of cells. Hematopoietic stem cells are located in the bone marrow and form blood cells.⁴ Literature has shown that nurses have a recognized role in providing patient education. They are perceived as a credible source of health information. Since nurses and midwives are maternal and child health care professionals, they must be knowledgeable and aware of recent trends in diagnosis and treatment, competent and able to apply their knowledge of nursing and midwifery practice⁵ The results of research studies indicated that nurses were having a low level for knowledge score and warrant a need to promote stem cell knowledge to create awareness and update information among those nurses. Educational modules will empower and equip them with the required knowledge about stems cell, thus, enhancing their attitude toward improving a holistic nursing care that would directly make an impact in the quality of life of many patients. Therefore, further assessment and efforts should be undertaken for improving the nursing curriculum to impart knowledge and positive attitude in these nursing students about stem cells.⁶

2. Material and method

2.1 Statement of the problem

Effectiveness of planned teaching programme on knowledge regarding umbilical cord stem cell banking among nursing students of selected college at Mangalore.

2.2 Objectives of the study

- a) To assess the level of knowledge regarding umbilical stem cell banking among nursing students.
- b) To assess the effectiveness of planned teaching programme on knowledge regarding stem cell banking among nursing students.

2.3 Research approach

An evaluative research approach was used in this study.

2.4 Research design

Pre-experimental one group pre-testpost-test design was chosen.

2.5 Variables of the study:

Independent variable: planned teaching programme.

Dependent variable: knowledge of nursing students regarding umbilical cord stem cell banking

2.6 Setting of the study:

Setting of the study was a nursing college at Mangalore

2.7 Populations:

In the present study population comprises of nursing students of selected college at Mangalore

2.8 Sample and sampling technique

In the present study , 60 students from 4th year BSc Nursing of New Mangala College of Nursing was selected using purposive sampling technique.

2.9 Instruments used for study:

Selection and development of study tools:

Based on a review of the literature and contact with experts, a structured knowledge questionnaire was developed to gather the data needed to meet the study's objectives. The researcher's development of the tools was aided by a thorough assessment of the literature found in journals, articles, published, and unpublished research projects. The instruments for the study consists of:

- Personal profile to collect the sample's demographic variables.
- Structured knowledge questionnaire to assess the knowledge of nursing students regarding umbilical cord stem cell banking.

Personal profile:

age, education of parents, religion, type of family, residence, and previous source of information.

Structured Knowledge Questionnaire:

The tool consists of 25 items regarding PCOD. There were 4 alternative responses for each items and each correct response given by the participant was awarded a score of one. The total knowledge score ranges from 0 to 25. The score is further divided arbitrarily as follows: poor knowledge (0-8), average knowledge (9-16), good knowledge (17-25).

3. Result:**SECTION A:****Table 1: frequency and Percentage (%) Distribution of samples according to their selected demographic variables.**

N= 60

Sl. No	Demographic variables	Frequency (f)	Percentage %
1.	Age a) 20-22 years b) 23-25 years c) 26-28 years d) 28 years & above	54 5 1 0	90 8.3 1.6 -
2.	Education of parents a) Uneducated b) SSLC c) PUC d) Degree & above	9 14 12 25	15 23 20 42
3.	Religion a) Hindu b) Muslim c) Christian d) Other	38 4 18 -	63 7 30 -
4.	Area of residence a) Rural b) Urban c) Semiurban	38 21 1	35 63 2
5.	Type of family a) Nuclear family b) Joint family c) Extended family d) Single parent family	33 25 2	55 42 3
6.	Previous source of information a) Family members relatives & friends b) Mass media c) No previous information	14 26 20	23 43 34

Table 2: Comparison of pre-test and post-test knowledge score of students regarding umbilical cord stem cell banking

Grading	Score	Pre test		Post test	
		FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
Poor	0-8	15	25.1%	2	3.27%
Average	9-16	41	68.3%	11	18.4%
Good	17-25	6	6.66%	47	78.33%

Maximum Score= 25

Table 2 shows that in pre test, majority (68.3%) of them have average knowledge, 25.1% have poor knowledge and 6.6% have good knowledge were as in the post test majority (78.3%) of them have good knowledge, 18.4% have average knowledge and 3.2% have poor knowledge.

Table 3: Mean, Mean Difference, Standard Deviation and 't' value of pre-test and post-test knowledge score of students

Mean knowledge score	Mean difference	Standard deviation	't' value
pre-test 10.45	7.35	3.12	8.78
post-test 17.8		3.74	

$T_{59}=1.671$ p (≤ 0.05)

Data in table 3 shows that the mean post-test knowledge score (17.8 ± 3.74) was higher than the mean pre-test knowledge score (10.45 ± 3.12). The computed 't' value ($t_{59} = 8.78$) was higher than table value ($t_{59} = 1.671$) at 0.05 level of significance. Hence the research hypothesis was accepted. This indicated that planned teaching program was effective in increasing the knowledge of students.

4. Conclusion

Based on the findings of the study following conclusion were drawn. The baseline information showed that, 71.6% of the students were between 20-24 years, 63.3% were living in urban area, 42% parents have degree as basic qualification. Majority of the data on distribution of students according to their source of information showed that 43% of the students received information from mass media, 55% of the students belonged to nuclear family.

In pre-test majority (68.3%) of students had average knowledge, 25.1% had poor knowledge and 6.66% had good knowledge. Whereas in post-test 18.4% had average knowledge and 78.33% had good knowledge which indicated that planned teaching program was effective in improving the knowledge level of the students.

The computed 't' value ($t_{59} = 8.78$) was higher than the table value ($t_{59} = 1.671$) at 0.05 level of significance. Hence the research hypothesis was accepted. The respondents were satisfied and happy with the information they received.

RECOMMENDATION

- A similar study can be conducted on a large sample to generalise the finding
- A comparative study can be conducted on knowledge regarding umbilical stem cell banking among staff nurses and other health professionals
- A similar study can be carried by using other teaching strategies like information booklet, SIM, computer assisted instruction, role play and lecture method
- An experimental study can be conducted with control group for effective comparison

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