



“KNOWLEDGE REGARDING STEM CELL BANKING AMONG POSTNATAL MOTHERS”

Nursing

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ABSTRACT

Stem cells are the body's “master” cells that regenerate. These cells are responsible for the repair of our body. They have the potential for providing cells and tissues and can save the child's life from as many as 75 serious ailments, like hemophilia, thalassemia, blood cancer and immunity related genetic disorders. Medical research shows that the stored stem cell of a child may treat many diseases of the parent also and hence become a 'lifeline' for the entire immediate family.²

Objectives:

- 1) To assess the knowledge regarding stem cell banking among post natal mothers admitted at PNC wards of selected hospitals at Kolhapur.
- 2) To determine the association between knowledge scores with the selected socio-demographic variables of postnatal mothers.

Methods: A descriptive research design was used, consisted of 100 samples, which were selected by using non-probability purposive sampling technique. Knowledge was assessed by using structured knowledge questionnaire on stem cell banking & samples were provided with informational booklet on stem cell banking. **Results:** The study resulted that, out of 100 samples, majority 66 (66%) had average knowledge scores & 32 (32 %) had poor knowledge scores regarding stem cell banking which indicates need of informational booklet on stem cell banking. There is an association between knowledge scores of post natal mother with their habitat. That indicates H_0 is accepted at the 0.05 level of significance. But there is no association between age, gravida, parity and education with knowledge scores. **Conclusion:** Study concluded that there is an emerging need to provide information booklet on stem cell banking. It is high time we should understand that all mothers should have the knowledge about stem cell banking.

KEYWORDS

stem cell banking, postnatal mothers

INTRODUCTION

The human body is the entire structure of a human being. It is composed of much different type of cells that together create tissue and subsequently organ system. They ensure homeostasis and viability of human body. The human body consists of more than 200 mature cell types: each has a distinct and specialized function. Stem cells are different to our mature working cells, they have an amazing ability to not make more of themselves, but also to create new tissues when they divide and develop. The discovery of stem cell was one of the greatest achievements of modern medicine. The stem cells found in cord blood have the ability to divide for indefinite periods in culture and to give rise to specialized cells are the building blocks of our blood of our blood and immune system and most readily reproduce into red blood cells, white blood cells and platelets.¹

Medical research shows that the stored stem cell of a child may treat many diseases of the parent also and hence become a 'lifeline' for the entire immediate family. The heart, liver, kidney, brain, can actually be cultivated in the environment outside of our body. There are various sources of stem cells, such as umbilical cord blood, bone marrow, peripheral blood, menstrual blood, skin, teeth, placental tissue, human embryos, and milk teeth of children and healthy wisdom teeth of adults.²

The first UCB bank (Umbilical Cord Blood Banks) was started at the New York blood center in 1992. There are now nearly 142 public banks and at least an additional 25 private banks actively involved around the world in collecting, processing, testing and cryopreserving UCB (Umbilical Cord Blood) for potential future use as therapeutics. There are currently approximately 44 banks over the world and they are connected to the world marrow donor association. There have been over 15,000 cord blood transplants worldwide through 2009.³

In India, there are approximately 72000 births daily, which results in discarding 72000 umbilical cords a day. The storage of stem cell rich blood derived from this umbilical cord can prove to be the best possible insurance against life threatening diseases.⁴

Banks in India:

With India's booming birth of 26 million births per year and diversity, the country would be the largest collector of UCB in the world. There public banks are established in India-Relicord (Mumbai), Jeevan Cord (Chennai) and Stemcyte (Gujrat), collectively having 5,000 units. Similarly, seven private have been established to date. These are Cryoviva (Gurgaon), Life cell (Chennai, Gurgaon) with maximum inventory of 19,000 followed by cryo banks having 17,000 plus

samples and about 4,500 between Cryo save (Banglore), Cord life (Bangal), Baby cell(Mumbai), stem one and ISSL [international stem cell service] four of these are certified by ISO where as Lifecell and Relicord are accredited by AABB. Most of these are affiliated with or are subsidiaries of international companies.⁵

NEED OF THE STUDY

A number of studies have been conducted in several countries to learn about peoples' knowledge, understanding, preferences, and attitude toward CB banking. Unfortunately, most results have shown inadequate knowledge in the public, expecting mothers and even medical staff or health care providers to know about it.

A descriptive study was conducted on public awareness on cord blood banking in Saudi Arabia by Dunia Jawdat et al. A self-administered questionnaire of 22 multiple choices was conveniently distributed, consisting of demographics, awareness measure, attitude toward banking preference, and donation for research data. Results showed, out of 1146 participants the majority were young female 19–25 years old (26%), who are college graduates (57%) with middle class socioeconomic status (82%). The subjective assessment of the overall knowledge was inadequate (66%).

Only half of the subjects (52%) knew that CB is a source of stem cells. More than half did not know the main use of CB. About half did not know about the method of collection nor the condition of storing. Study concluded that, there was a high lack of knowledge about CB banking. More than half of the subjects were unaware of CB banking and its uses.⁶ Postnatal mothers need to understand stem cell sources so that they will be having information of stem cell banking, its benefits and importance and help them in their own ethical decision making processes.

Statement Of The Problem:

“A Descriptive Study To Assess The Knowledge Regarding Stem Cell Banking Among Post Natal Mothers Admitted At PNC Wards Of Selected Hospitals At Kolhapur With The View To Develop An Informational Booklet”

OBJECTIVES OF THE STUDY:

- 1) To assess the knowledge regarding stem cell banking among post natal mothers admitted at PNC wards of selected hospitals at Kolhapur.
- 2) To determine the association between knowledge scores with the selected socio-demographic variables of postnatal mothers.

Hypothesis:

H₁- There is an association between the knowledge scores on stem cell banking among postnatal mothers with their selected socio-demographic variables tested at 0.05 level of significance.

MATERIALS & METHODS:

A descriptive research design was used for the present study, which consisted of 100 samples that were selected by using non-probability purposive sampling technique. Data was collected using structured knowledge questionnaire on stem cell banking from post natal mothers admitted in PNC ward at selected hospitals in Kolhapur. In order to fulfill the objectives, the data was tabulated and analyzed by using descriptive and inferential statistics.

RESULTS & DISCUSSION:

The data obtained were entered into a master data sheet for tabulation and statistical analysis of data was organized and presented under the following headings,

Table 1: Frequency & percentage distribution of sample according to their socio demographic variables. n=100

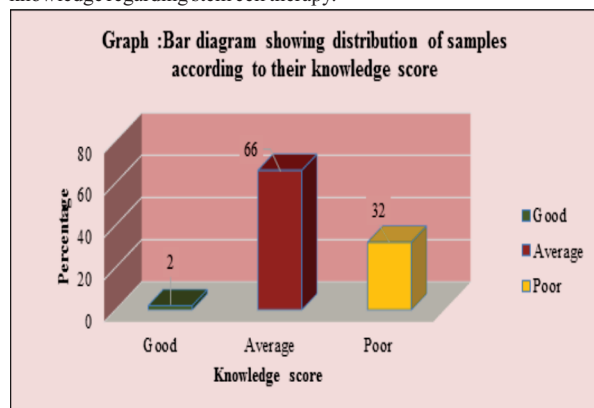
Sr. No.	Variables	Frequency (f)	Percentage (%)
1	Age in years	18-25	76
		26-32	22
		>32	02
2	Habitat	Urban	42
		Rural	58
3	Gravida	1st	62
		2nd	32
		3rd	06
4	Parity	1st	62
		2nd	32
		3rd	06
5	Education	10th	22
		12th	36
		Graduation	42
		Illiterate	00

Table 2: Frequency & percentage distribution of samples according to their knowledge score. n= 100

Knowledge score.	Frequency (f)	Percentage (%)
Good	02	02
Average	66	66
Poor	32	32

Table 2 indicates that, out of 100 samples majority 66 (66%) had average knowledge scores & 32 (32 %) had poor knowledge scores regarding stem cell banking which indicates there is an emerging need to provide information booklet on stem cell banking.

Findings of this study are supported with the study done by Mr. Amos Talsandekar to identify the knowledge regarding stem cell therapy among staff nurses. The result indicated that among 100 staff nurses 64% were having average knowledge and 32% were having poor knowledge regarding stem cell therapy.⁷

**Testing of hypothesis**

H₁- There is association between the knowledge scores among post natal mothers with their selected socio-demographic variables tested at 0.05 level of significance.

Table 3: Association between the knowledge scores among post natal mothers with their selected socio-demographic variables n=100

Sr. No.	Variables		Knowledge score			df	χ^2 test	
			Good	Average	Poor		't' value	'c' value
1	Age in years	18-25	02	50	24	04	9.48	1.74
		26-32	00	14	08			
		>32	00	02	00			
2	Habitat	Rural	02	40	16	02	5.99	12.96*
		Urban	00	26	16			
3	Gravida	1 st	02	40	20	04	9.48	4.95
		2 nd	00	24	08			
		3 rd	00	02	04			
4	Parity	1 st	02	40	20	04	9.48	4.95
		2 nd	00	24	08			
		3 rd	00	02	04			
5	Education	10 th	00	20	04	04	9.48	4.93
		12 th	00	22	12			
		Graduate	02	24	16			

Note- * indicates association.

Table 3 indicates that there is no association between age, gravida, parity and education with knowledge score but there is an association between knowledge score of post natal mother with their habitat.

That indicates H₁ accepted at the 0.05 level of significance.

These findings were contrary to the study done by Mridula Goswami et al on dental stem cells: awareness, knowledge, and attitude of dental professionals. Result stated a significant association of age and type of practice with awareness of dental stem cells and knowledge.⁸

Nursing Implication

The findings of the present study have served implications in different areas, as per result stress should be on inclusion of practical use of stem cell therapy in curriculum. The informational booklet can also be utilized by the students during educational session, which may help to improve knowledge regarding stem cell therapy. It can incorporate this in practice. The tool could also be used to identify the knowledge among general public. There was wide gap between existing and expected levels of knowledge of post natal mothers which indicates an immediate need for education regarding stem cell therapy. The present study can be a source of review of literature for others who are intending to conduct similar studies on stem cell therapy among other samples.

CONCLUSION

The study concluded there is an emerging need to provide information booklet on stem cell banking. It is high time we should understand that all mothers should have the knowledge about stem cell banking.

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