



## BUILDING A BRIGHTER FUTURE: EDUCATING AND INSPIRING ANTENATAL WOMEN ABOUT UMBILICAL CORD BLOOD STEM CELL BANKING

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### ABSTRACT

The aim of the study is to assess the Knowledge and Attitude regarding Umbilical Cord Blood Stem Cells Banking among Antenatal women attending OPD of selected Hospitals of Amritsar, Punjab. A self-structured knowledge questionnaire comprising of 30 questions was used to assess knowledge and rating scale comprising of 20 statements was used to assess attitude regarding umbilical cord blood stem cells banking among antenatal women. Data was collected from 40 antenatal women by using purposive sampling technique. The study concluded that, among 40 study subject almost half (55%) had below average knowledge, followed by 27.5% had average knowledge and only (17.5%) had good knowledge regarding umbilical cord blood stem cells banking

Regarding attitude majority (82.5%) of antenatal women had negative attitude and 17.5% had positive attitude towards umbilical cord blood stem cells banking. Knowledge and attitude regarding umbilical cord blood stem cells banking among antenatal women are positively correlated to each other i.e. ( $r=0.73$ ) at  $p<0.05$ . In order to determine the association of knowledge regarding umbilical cord blood stem cells banking among antenatal women with selected demographic variables, Education and Occupation was found to be statically significant at  $p<0.05$ . On the other hand, to assess the association of attitude regarding umbilical cord blood stem cells banking among antenatal women with selected demographic variables only parity shows significant association at  $p<0.05$ .

**Key words:** Knowledge, Attitude, Umbilical Cord Blood Stem Cells Banking, Antenatal women.

### ABOUT AUTHORS



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## INTRODUCTION

Mother and baby they share a special bond and that bond starts from the period of conception. A mother is the one who nurtures and rear up her child from the beginning and she always tries to give her best to her child. With the recent innovations in the technologies she is not just give care to her baby but also provide a gift of health with the help of stem cell and cord blood banking.<sup>1</sup>

Umbilical cord is a direct link between the mother and the unborn baby. It creates an emotional bonding between two of them as well as it is a priceless experience for a woman. Stem cells are known for the building blocks for every kind of cells in human body as they are having the capacity of maturing in to any type blood or cells in the nervous system. The umbilical cord consists of Wharton's jelly and not with the ordinary skin and connective tissue. There are no nerves inside it so cutting of this is not painful at all. It has two arteries which carry deoxygenated blood - from the foetus back to mother - and one vein that carries oxygenated blood - from mother to the foetus.<sup>2</sup>

The umbilical cord that forms the bond between the mother and the baby inside the womb is the richest source of lifesaving stem cells. There are many reasons to preserve the umbilical cord blood and the tissue at the time of birth. Stem cells in general have revolutionized and are continuing to change the practice of medicine. Luckily these stem cells found all over our body and more particularly concentrated in the bone marrow that can be called upon at any time to help in treatment. However the exciting discovery by scientists is that the umbilical cord, which connects the mother and baby for 9 months in the womb, is one of the most preferred sources of these precious stem cells. Stem cells from the umbilical cord are pristine and naïve as they are not exposed to pathogens, hence reduce the risk of infectious<sup>3</sup>

A descriptive study was conducted to assess the knowledge and attitudes of pregnant women with regard to collection, testing and banking of cord blood stem cells in Brazil. Data was collected from 650 pregnant women using questionnaire. The study results showed that more than half 70% reported poor knowledge about cord blood banking. Many of respondents 68% thought that physicians should talk to pregnant women about the collection of cord blood, and they wanted to receive information about this topic from healthcare professionals or prenatal classes. Most of women would elect to store cord blood in a public bank and a much smaller portion 14% would elect private banking. The study has concluded that most women in supported the donation of cord blood to public cord blood bank for potential transplantation and research<sup>4</sup>

### Statement of the Problem

A Descriptive Study to assess the Knowledge and Attitude regarding Umbilical Cord Blood Stem Cells Banking among Antenatal women attending OPD of selected Hospitals of Amritsar, Punjab.

### Aim of Study

The aim of the study is to enhance the knowledge and develop positive attitude regarding umbilical cord blood stem cells banking among antenatal women with the help of instructional booklet.

### Objectives

1. To assess the knowledge regarding umbilical cord blood stem cells banking among antenatal women.
2. To assess the attitude regarding umbilical cord blood stem cells banking among antenatal women.
3. To determine the relationship between knowledge and attitude regarding umbilical cord blood stem cells banking among antenatal women.
4. To determine the association of knowledge regarding umbilical cord blood stem cells banking among antenatal women with selected demographic variables.
5. To determine the association of attitude regarding umbilical cord blood stem cells banking among antenatal women with selected demographic variables.
6. To develop and distribute guidelines on umbilical cord blood stem cells banking to antenatal women.

### Assumption

- Antenatal women have inadequate knowledge regarding umbilical cord blood stem cells banking.
- Antenatal women have negative attitude regarding umbilical cord blood stem cells banking.



## Delimitations

The study is limited to:

1. Antenatal women attending OPD of selected hospitals of Amritsar, Punjab.
2. Antenatal women in the age group above 18 years.
3. Only 40 subjects

## MATERIAL AND METHODS:

The pilot study was done at selected hospitals of Amritsar Punjab. On the basis of inclusion and exclusion criteria, 40 samples were selected by using purposive sampling technique. The present study was conducted at Beri maternity hospital, Atlantis hospital and Siddhi maternity hospital of Amritsar, Punjab to ensure the reliability of the tool and feasibility of the study. These hospitals were located within 1-2 km from each other. Siddhi built in 12000 square feet of land and is 70 bedded hospital. Beri maternity and test tube baby centre is located at Putlighar Amritsar Dr. Archana Beri is the MD of hospital and it is approximately 50 bedded maternity hospital. Atlantis multispecialty hospital Putlighar road Dr Pranav Mahajan is the MD and it is also 50 bedded well equipped hospital. Total sample size was 40 antenatal mothers attending OPD of selected hospitals.

## DESCRIPTION OF TOOL:

The tool used in this study was self-structure knowledge questionnaire and rating scale and was organised in 3 parts

### PART A: Socio-demographic Variables:

This part includes six items for obtaining personal information of antenatal women such as: age, parity, education, occupation, family income and place of living.

### PART B: Structured questionnaire to knowledge regarding umbilical cord blood stem cells banking:

Questionnaire was used to assess the knowledge regarding umbilical cord blood stem cells banking among antenatal women. It consists of 30 questions. Each correct answer of a question carries one mark. Maximum score is 30 and minimum score is 0.

## SCORING AND INTERPRETATION:

### Criterion Measures

#### Part –B consisting of 30 questions to assess the knowledge regarding umbilical cord blood stem cells banking

Level of knowledge	Score	%age
Good	21-30	>69%
Average	11-20	34-69%
Below average	0-10	<34%

#### Part C: Rating Scale to assess attitude regarding umbilical cord blood stem cells banking.

It contains 20 statements related to attitude regarding umbilical cord blood stem cells banking among antenatal women. Attitude score was divided into two categories i.e. Positive ( $\geq 50\%$ ) and Negative attitude ( $< 50\%$ ). Marking of this scale was 1 = Strongly disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly agree for positive statements and vice versa. Antenatal women were awarded with different levels of attitude i.e. positive attitude (score more than & equal to 50) and negative attitude (score less than 50).

## CRITERION MEASURES

Attitude	Score
Positive	$\geq 50$
Negative	$< 50$

Positive-  $\geq 50$

Negative-  $< 50$



## ANALYSIS AND INTERPRETATION:

**Objective-1: To assess the knowledge regarding umbilical cord blood stem cells banking among antenatal women.**

**Table-1 Frequency and percentage distribution of antenatal women according to level of knowledge regarding umbilical cord blood stem cells banking. N =40**

Level of knowledge	N	%
Good (>69%)	7	17.5
Average (34-69%)	11	27.5
Below average (<34%)	22	55

**Maximum Score: 30**

**Minimum Score: 0**

Above table states that according to level of knowledge regarding umbilical cord blood stem cells banking. 55% of antenatal women had below average knowledge regarding umbilical cord blood stem cells banking, followed by 27.5% had average knowledge, and remaining 17.5% had good knowledge regarding umbilical cord blood stem cells banking.

Hence, it can be concluded that majority of the antenatal women had below average knowledge regarding umbilical cord blood stem cells banking.

**Objective 2: To assess the attitude regarding umbilical cord blood stem cells banking among antenatal women.**

**Table 2: Frequency and percentage distribution of antenatal women according to attitude regarding umbilical cord blood stem cells banking. N=40**

Attitude	N	%
Positive ( $\geq 50\%$ )	7	17.5
Negative (<50%)	33	82.5

**Maximum Score: 100**

**Minimum Score: 20**

Above table suggests the frequency and percentage distribution of antenatal women according to attitude regarding umbilical cord blood stem cells banking. It showed that majority (82.5)% of the antenatal women had negative attitude whereas remaining (17.5%) of antenatal women had a positive attitude towards umbilical cord blood stem cells banking.

Hence, it can be concluded that majority of antenatal women had negative attitude regarding umbilical cord blood stem cells banking.

## CONCLUSION:

It can be concluded that a significant number of antenatal women have below average knowledge and a negative attitude towards umbilical cord blood stem cell banking. This highlights the need for educational interventions to enhance their understanding and promote a more positive outlook. By providing antenatal women with an instructional booklet, the study aims to bridge this knowledge gap and empower them to make informed decisions about umbilical cord blood stem cell banking.

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