*IOSR Journal of Nursing and Health Science (IOSR-JNHS)*
*e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 9, Issue 4 Ser. VIII (Jul. – Aug. 2020), PP 01-04*
*www.iosrjournals.org*

# Assess the knowledge regarding stem cells and cord blood banking among antenatal mothers in Prathima Hospital, at Karimnagar, Telangana.

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***Abstract***
***Background:*** *As the new born is delivered and the umbilical cord divided, blood can be collected from the segment of cord, still attached to the placenta are known as "umbilical cord blood" stem cell. The blood collected in the umbilical cord is said to be a rich origin of stem .The blood contains stem cells which are also known as hematopoietic cells and these cells can convert into any types of organs in the body .These stem cells collected from the umbilical cord can heal genetic diseases related to blood and immune system like cancer , blood disorders and several life –threatening diseases .*
***Objectives:*** *Assess the level of knowledge regarding stem cells and cord blood banking among antenatal mothers. Find out the association between the level of knowledge regarding stem cells and cord blood banking among antenatal mothers with their selected demographic variables.*
***Materials and Methods:*** *Descriptive research design was chosen to assess the knowledge . The sample size was 30 Antenatal mothers. Demographic variables and the level of knowledge among antenatal mother concerning stem cells and cord blood banking were collected by using structured questionaire.*
***Results:*** *The current knowledge level of antenatal mother on stem cells and cord blood banking portrays that 22(73.4%) had inadequate knowledge, 8(26.6%) had moderate and no antenatal mothers had adequate knowledge.*
***Conclusion:*** *The findings revealed that most of the antenatal mothers were present with inadequate knowledge regarding stem cells and cord blood banking*
***Keywords:*** *Stem cells, cord blood banking, antenatal mother,*

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Date of Submission: 18-07-2020 Date of Acceptance: 02-08-2020

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## I. Introduction

**"In beginning there is the stem cell it is the origin of an organism's life"**

**Stewart Cell.**

The umbilical cord blood contains numerous hematopoietic stem cells that have the ability to differentiate into other cells and the ability to self-degenerate. Stem cells are defined simply as cells meeting three basic criteria. First, stem cells renew themselves throughout life, i.e., the cells divide to produce identical daughter cells and thereby maintain the stem cell population. Second, stem cells have the capacity to undergo differentiation to become specialized progeny cells when stem cells differentiate, they may divide asymmetrically to yield an identical cell and a daughter cell that acquires properties of a particular cell type, for example, specific morphology, phenotype, and physiological properties that categorize it as a cell belonging to a particular tissue. Stem cells and stem cell research have opened new avenues for the treatment of disease. Stem cells are special cells because they are able to self- replicate and differentiate into other body cells

## II. Research Methodology

Research methodology is a way to systematically solve the research problem.. **Research Design:** Descriptive research design was chosen to assess the knowledge. **Settings of the Study**: The study was conducted in selected hospitals at Karimnagar.
**Population**; The study population comprises of antenatal mothers in selected hospitals at Karimnagar.

**Sample size**; The sample of 30 antenatal mothers who fulfilled the inclusion criteria is considered as sample for this study.

**Sampling Technique:** Convenient sampling technique was used for the selection of sample for the study.

**Criteria for sample selection Inclusion criteria**

- Antenatal mothers who are willing to participate in the study Antenatal mothers who are available at the time of data collection.

**Exclusion criteria**

- Antenatal mothers who have any hearing and visual problems.
- Antenatal mothers who already registered for cord blood and stem cell therapy.

**Description of the tool**

It consist of two sections

**Section A**. It deals with demographic variables such as age, type of family, Number of children, educational status, religion.

**Section B**. A structured questionnaire consisting of 30 multiple choice questions and each question has 4 choices, each correct response carries 1 mark and wrong response carries 0 marks.

## III. Procedure For Data Collection

Data was collected from antenatal mothers after obtaining a formal written permission from the hospital. Each person was assured for data collected from them was utilized only for the purpose of study and will be kept confidential. The investigator uses structured questionnaire to collect data.

**PLAN FOR DATA ANALYSIS**

Descriptive and inferential statistics will be used to analyze the collected data.

**Section -1:**

The demographic data was analyzed by using frequency and percentage.

**Section -2:**

Association of knowledge score among antenatal mothers regarding stem cells and cord blood banking with selected demographic variables will be analyzed by chi-square test

## IV. Results

**Frequency and percentage distribution of the demographic variables among antenatal mothers**

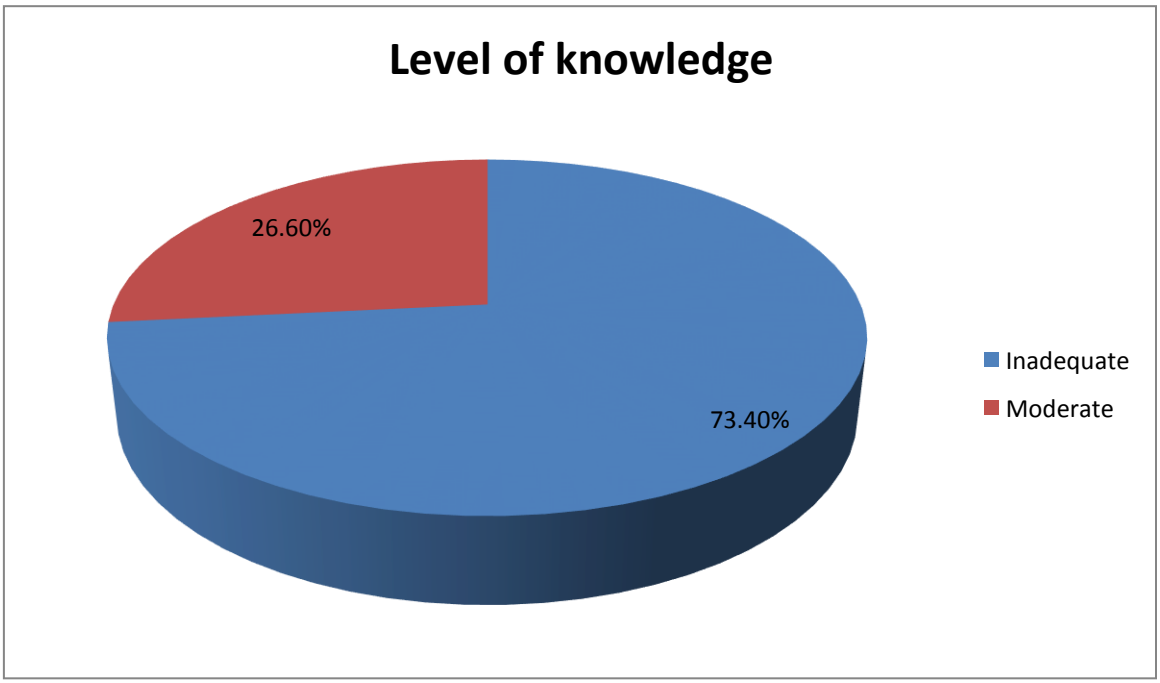
| S.NO | Demographic variables | Frequency | Percentage |
|---|---|---|---|
| 1 | AGE | | |
| | a) 20-25 Years | 7 | 23.3% |
| | b) 26-30 Years c)31-35Years | 14 | 46.6% |
| | | 9 | 30% |
| 2 | TYPE OF FAMILY | | |
| | a) Joint family | 12 | 40% |
| | b) nuclear family | 18 | 60% |
| 3 | NUMBER OF CHILDREN | | |
| | a) 1 child | 8 | 26.6% |
| | b) 2 children | 19 | 63.3% |
| | c) more than 2 children | 3 | 10% |
| 4 | EDUCATIONAL STATUS | | |
| | a)Illiterate b)Primary school | 11 | 36.66% |
| | c)High school | 14 | 46.6% |
| | | 5 | 16.6% |
| 5 | RELIGION | | |
| | a)Hindu b)Christians c)Muslim d)Others | 17 | 56.6% |
| | | 7 | 23.3% |
| | | 6 | 20% |
| | | 0 | 0% |

In this study out of 30 samples, (23.3%) were in the age group of 20-25years, (46.6%) were in the age group of 26-30years , (30%) were in the age group of 31-35 years., On the basis of type of family (40%) of samples were belongs to joint family and (60%) of samples belong to nuclear family. Based on number of children (26.6%) have 1 child and (63.3%) have 2 children and (10%) have more than 2 children. On the basis of educational qualification (36.6%) samples are illiterate and (46.6%) samples are educated till primary school (16.6%) are educated till high school. With regard to religion, (56.6%) samples are Hindu (23.3%) samples are Christian and (20%) samples are Muslim.

**Frequency and percentage distribution to assess the knowledge regarding stem cells and cord blood banking among antenatal mothers:**

| S.No | Level of knowledge score | Frequency | Percentage |
|---|---|---|---|
| 1 | Inadequate | 22 | 73.4% |
| 2 | Moderate | 8 | 26.6% |
| 3 | Adequate | 0 | 0 |

The current knowledge level of antenatal mother on stem cells and cord blood banking portrays that 22(73.4%) had inadequate knowledge, 8(26.6%) had moderate and no antenatal mothers had adequate knowledge.



**Association between the level of knowledge regarding stem cells and cord blood banking among antenatal mothers with their selected demographic variables:**

| S.NO | Demographic variables | Inadequate | Moderate | Adequate | Chi square | df | Critical value |
|---|---|---|---|---|---|---|---|
| 1 | AGE<br>a) 20-25 Years<br>b) 26-30 Years c)31-35Years | <br>8<br>15<br>0 | <br>4<br>3<br>0 | <br>0<br>0<br>0 | <br>1.21<br>Not significant | <br>4 | <br>9.49 |
| 2 | TYPE OF FAMILY<br>a) Joint family<br>b) nuclear family | <br>2<br>21 | <br>7<br>0 | <br>0<br>0 | <br>21.29<br>significant | <br>2 | <br>5.99 |
| 3 | NUMBER OF CHILDREN<br>a) 1 child<br>b) 2 children<br>c) more than 2 children | <br>17<br>0<br>6 | <br>3<br>0<br>4 | <br>0<br>0<br>0 | <br>2.26<br>Not significant | <br>4 | <br>9.49 |
| 4 | EDUCATIONAL STATUS<br>a)Illiterate b)Primary school<br>c)High school | <br>8<br>12<br>3 | <br>2<br>4<br>1 | <br>0<br>0<br>0 | <br>0.07<br>Not significant | <br>4 | <br>9.49 |
| 5 | RELIGION<br>a)Hindu b)Christian c)Muslim<br>d)Others | <br>1<br>10<br>10<br>2 | <br>4<br>1<br>1<br>1 | <br>0<br>0<br>0<br>0 | <br>11.649<br>significant | <br>3 | <br>7.82 |

In demographic variables types of family and religion had shown significant association in statistics with level of antenatal mothers knowledge in regard to stem cell and cord blood banking at 0.05 level and the other demographic variables had not shown statistically significant association with level of knowledge regarding stem cells and umbilical cord blood banking among antenatal mothers.

## V. Discussion

The greatest responsibility of a parents starts at the time when a child is born . Parents are the basic care takers who play the most important role in upbringing a child . A child life depends greatly upon the decision taken at the time of birth . In this study the current knowledge level of antenatal mother on stem cells and cord blood banking portrays that 22(73.4%) had inadequate knowledge, 8(26.6%) had moderate and no antenatal mothers had adequate knowledge. Contrary study conducted by **Seema Barnabass and Harjit** Findings revealed that majority 28% of the antenatal mothers had average knowledge, 72%antenatal mothers had below average.

## VI. Conclusion

The findings revealed that most of the antenatal mothers were present with inadequate knowledge regarding stem cells and cord blood banking therefore it is important to create more awareness among antenatal mothers about stem cells and cord blood banking. Moreover mothers need to recognize about umbilical cord blood banking so that they can provide correct information to the people and prevent the child from various diseases .

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