International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Index Copernicus Value (2016): 79.57 | Impact Factor (2017): 7.296

A Descriptive Study to Assess the Knowledge and Attitude Regarding Umbilical Blood Banking among the Antenatal Mothers Attending the Antenatal out Patient Department of St. Ann's Hospital, Vijayawada

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Abstract: ***Introduction: Cord blood also known as placental and umbilical cord blood, is the left over blood present in the placenta and a section of umbilical cord after the birth of the baby and is rich in life saving stem cells. Compared to stem cells from the bone marrow and circulating blood, cord blood stem cells can be harvested easily without posing any risks to both mother and child. Materials and methods: A descriptive study was conducted to assess the knowledge and attitude regarding umbilical cord blood banking among the antenatal mothers attending the antenatal outpatient department of St. Ann's Hospital, Vijayawada, Krishna district, A.P. A total of 100 antenatal mothers attending the antenatal outpatient department were selected using simple random sampling technique. Structured Knowledge questionnaire and Likert 5 point attitude scale was used to collect the data. The responses are tabulated, organized, analyzed and interpreted by using descriptive and inferential statistics based on objectives of the study. Results: Findings revealed that majority i.e., 93% of the sample had inadequate knowledge, 7% had satisfactory knowledge and none of the antenatal mothers had adequate knowledge regarding umbilical cord blood banking .Majority i.e., 81% had favorable attitude, 14% of them very favorable attitude; and only 5% of the antenatal mothers had unfavorable attitude towards umbilical cord blood banking. Conclusion: The data collected and the statistical analysis of it and the interpretations has clearly shown a knowledge deficit among the antenatal mothers regarding umbilical cord blood banking and the attitude towards it requires modification or change. There is a need to educate the antenatal mothers regarding the benefits of umbilical cord blood banking.***

Keywords: Descriptive, Assess, Knowledge, Attitude, Umbilical blood banking, antenatal mothers

1. Introduction

"Tears of Mother Cannot Save Her Child
But Your Blood Can"

One of the great contributions offered by the medical science to the humanity is human body banking. Bank is a place where something is stored or preserved and is available for use. Researchers in the field of medical science are inventing new methods to improve the life span and quality of life for human beings by the transplantation of various components of body [1].The various body tissues and organs being transplanted are; umbilical cord stem cells, bone marrow stem cells, bone tissues, skin, blood etc. are the tissues being transplanted and the organs such as eye, heart, kidney, liver etc. can be transplanted. These tissues and organs can be collected, stored in an appropriate manner and transplanted to the person who is in need of it [2].

The umbilical cord blood contains a rich source of hematopoietic stem cells that can be used to reconstitute the blood system and can easily be extracted and Cryo preserved, thus allowing for the establishment of HLA – typed stem cell banks. Umbilical cord blood has also the potential to give rise to non-hematopoietic cells, such as bone, neural and endothelial cells [3].

Stem cells are unspecialized cells having a property of self-renewal and further differentiate in to various types of specialized cells. The highly specialized cells that make up more than 200 types of human tissues originally came from an initial pool of stem cells is formed shortly after fertilization [3].

Umbilical cord blood banking consists of the collection, processing and cryopreservation of the remaining blood within the umbilical cord and placental circulation following birth of the child typically prior to the placental delivery. Within this left over blood which is traditionally discarded with the placenta as medical waste, lies a rich source of hematopoietic stem cells useful in diverse clinical conditions [4].

2. Need for the study

Umbilical cord blood has been approved for use by the food and drug administration (FDA) and other authorities since the late 1980's in USA. The first umbilical cord transfusion took place in 1988. French researchers transplanted it to the 5 year old sibling who had Fanconi's anemia, a severe type of anemia that causes skeletal defects. The child engrafted without incidence, fully reconstituting his blood, bone marrow and immune system with donor cells [5].

Broxmeyer HE, conducted a study on uses of cord blood among pregnant mothers. Result showed that 67% of women would agree to store cord blood for research

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purposes, 39% for gene therapy and 33% for drug manufacturing investigations[6].

Physicians and researchers are making significant progress in evaluating the safety and efficacy of umbilical cord blood stem cells for therapeutic uses beyond their uses for cancers and blood disorders. Recent researchers have shown that umbilical cord blood stem cells have similar powers and health promoting benefits as do embryonic stem cells. Advances are being made each day in providing greater safety to the patient [7].

In India, the leading cord blood banks are Life cell International private limited, stem cyte India, cryo save India, stem made Bio tech Private Limited, Asia cryocell private limited, cryo banks International India, Life cell International[8].

The cord blood banks in Andhra Pradesh are Life cell International Private limited, Hyderabad, Vijayawada, Warangal; Stem cyteIndia, Hyderabad; cryo save, Hyderabad; cryobank International, Somajiguda, Hyderabad; cord life, Surayaraopet, Vijayawada[9].

Because of the many issues involved and the widespread public discussion on the issue, that nurses and midwives who provide care in the ante- and perinatal period should be able to provide counseling services to pregnant women on the new concept of umbilical cord blood banking[10].

This study was planned for the purpose of assessing the knowledge and attitude regarding umbilical cord blood banking among antenatal mothers attending the antenatal outpatient department of St. Ann's hospital, Vijayawada.

Objectives

1) To assess the knowledge of antenatal mothers regarding umbilical cord blood banking.
2) To determine the attitude of antenatal mothers regarding umbilical cord blood banking.
3) To establish the relationship between the knowledge and attitude of the antenatal mothers with regard to umbilical cord blood banking.
4) To determine the relationship between the selected demographic variables and the knowledge and attitude of the antenatal mothers regarding umbilical cord blood banking.

Hypothesis

H1: There will be significant relationship between the knowledge and attitude of the antenatal mothers regarding umbilical cord blood banking.

H2: There will be significant relationship between knowledge and attitude of the antenatal mothers regarding umbilical cord blood banking with the selected demographic variables.

3. Review of Literature

The Review of Literature for the present study is gathered and organized under the following headings:

1) Literature related to the meaning and terms related to umbilical cord blood banking.
2) Literature related to the emergence of cord blood banking as an important source of stem cells for treating various conditions.
3) Literature related to the benefits and limitations of cord blood transfusion.
4) Literature related to the knowledge and attitude of antenatal mothers regarding umbilical cord blood banking.

4. Materials and Methods

Research approach and Research design: A quantitative approach with a non-experimental descriptive research design was used to conduct the study.

Independent Variables: Age, education, occupation, family type, religion and source of information.

Dependent Variables: Knowledge and attitude of the antenatal mothers regarding umbilical cord blood banking.

Research Setting: Antenatal outpatient department of St. Ann's Hospital, Vijayawada.

Population: The population of the study comprised of antenatal mothers attending the antenatal outpatient department of St. Ann's Hospital, Vijayawada.

Sample and Sampling Technique: Total sample size was 100 antenatal mothers attending the antenatal outpatient department. Simple random sampling technique was used.

Development of tool: The tool for the present study was Knowledge questionnaire and attitude scale developed based on review of literature and objectives of the study.

Description of the Tool: The tool consists of three sections:

Section I: Sample characteristics: It contains 8 demographic items such as age, religion, education, occupation, type of family and source of information of the subjects.

Section II: Knowledge Questionnaire: It consists of 20 multiple choice questions related to umbilical cord blood banking.

Section III: Attitude Scale: A five point Likert scale with 15 items of attitudes of antenatal mothers regarding umbilical cord blood banking.

Data Collection: The data collection was done by the investigator by personally administering the questionnaire to the study subjects during the month of July 2016. The responses of the antenatal mothers were tabulated, organized, analyzed and interpreted by using descriptive and inferential statistics based on the objectives of the study.

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5. Results

Section – I: Description of demographic characteristics of sample

Section I revealed that out of 100 antenatal mothers 62% of the sample belonged to the age group of below 25 yrs.; 32% belonged to the age group of 26-30 yrs; 6% belonged to the age group of 31-35 yrs. Sixty percentage of the samples were Hindus; 10% were Muslims; 27% were Christians; and 3% belonged to other religions. Seven percentage of sample were illiterates; 7% had primary education; 32% had secondary education; 13% studied up to intermediate and 41% had graduation and above.63% of the sample had nuclear family; 36% had joint family; and 1% belonged to extended family.72% of the samples were house wives; 14% were daily wage earners; and 14% were employees. And 46% of the sample did not have any previous knowledge regarding umbilical cord blood banking; 37% had received information from the health care professionals; 12% got it from mass media; and 5% of sample got it from other sources.

Section – II: Frequency and percentage distribution of the sample according to the knowledge and attitude scores

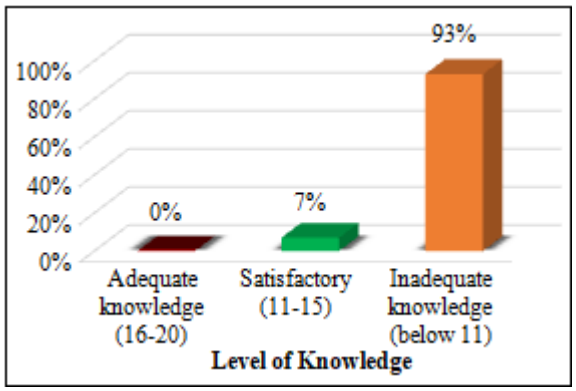


Figure 1: Bar diagram showing the percentage distribution of the sample based on the knowledge scores

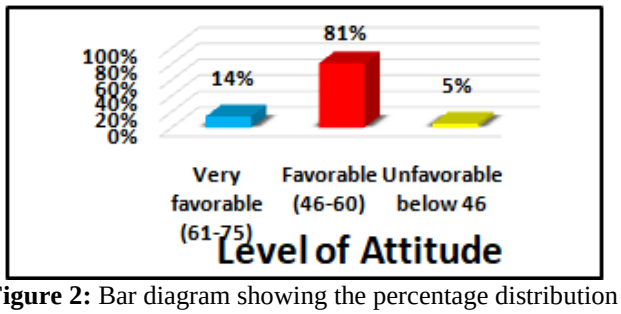


Figure 2: Bar diagram showing the percentage distribution of the sample based on the knowledge scores

Section – III

Findings related to the mean and standard deviation of the knowledge and attitude scores of the antenatal mothers regarding umbilical cord blood banking.

Table 1: Mean and standard deviation of knowledge and attitude scores of the sample regarding umbilical cord blood banking, **N=100**

Knowledge Scores		Attitude Scores	
Mean	Standard Deviation	Mean	Standard Deviation
7.05	2.14	54.21	6.01

Section – IV

Computing co-efficient co-relation 'r' to find out the significant relationship between knowledge and attitude scores of the antenatal mothers

Table 2: Co-efficient of correlation between knowledge and attitude scores of antenatal mothers regarding umbilical cord blood banking, N=100

	Area	'r' Value
Antenatal mothers	Knowledge and attitude scores	0.225

The figures presented in the table shows that the correlation between knowledge and attitude score is +0.23; this indicates that there is a positive co-relation between the knowledge and attitude scores of the sample regarding umbilical cord blood banking.

Hence H1 which states that there will be significant relationship between the knowledge and attitude of antenatal mothers regarding umbilical cord blood banking is accepted.

Section – V

Table 3: Chi square values showing the association between the knowledge and Attitude scores of antenatal mothers with their selected demographic variable , N=100

S. No	Demographic Variable	Knowledge Score			Attitude Score		
		Chi Square (χ^2)	df	Inference	Chi Square (χ^2)	df	Inference
1.	Age	1.02	6	NS	7.10	6	NS
2.	Religion	0.019	6	NS	2.25	6	NS
3.	Educational status	25.77	8	S	6.04	8	NS
4.	Family type	15.21	4	S	1.83	4	NS
5.	Occupation	9.50	6	NS	4.36	6	NS
6.	Source of information	2.85	6	NS	13.31	6	S

NS- Not Significant; S- Significant
df-Degree of freedom

There is a significant association between knowledge scores and the educational status (χ^2=25.77) and family type (χ^2=15.21).There is no significant association between the knowledge scores and the age, religion, occupation and source of information.

There is a significant association between the attitude scores and source of information (χ^2=13.31) regarding umbilical cord blood banking. There is no significant association between the attitude scores and the age, religion, educational status, family type, occupation.

Hence H2 which states that there will be significant relationship between knowledge and attitude of antenatal mothers regarding umbilical cord blood banking with their selected demographic variables is partially accepted.

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6. Discussion

The discussion of the study is based on the findings obtained from statistical analysis and according to the objectives.

To assess the knowledge of the antenatal mothers regarding umbilical cord blood banking. From the analysis of the scores obtained, it is found that 93% of the sample had inadequate knowledge, 7% of them had satisfactory knowledge and no one had adequate knowledge regarding umbilical cord blood banking.

To determine the attitude of antenatal mothers regarding umbilical cord blood banking. From the analysis of the attitude scores it is found that 5% of the sample had unfavorable attitude, 81% of them had favorable attitude and 14% of them were of very favorable attitude towards umbilical cord blood banking.

To establish the relationship between the knowledge and attitude of antenatal mothers with regard to umbilical cord blood banking. The analysis revealed that the coefficient correlation between the knowledge scores and attitude scores is 0.2251, indicating a positive correlation between the knowledge and attitude.

To determine the relationship between the selected demographic variables and the knowledge and attitude of the antenatal mothers regarding umbilical cord blood banking. The analysis revealed that there is a significant association between the knowledge level with educational status and family type. There is a no significant association between the attitudes with demographic variables.

7. Conclusion

The data collected and the statistical analysis of it and the interpretations has clearly shown a knowledge deficit among the antenatal mothers regarding umbilical cord blood banking and the attitude towards it requires modification or change. The statistical analysis indicated a positive correlation between the two. By influencing or enhancing the knowledge we may be able to cultivate a more positive attitude regarding umbilical cord blood banking among the antenatal mothers.

Ethical Clearance: Ethical clearance was obtained from the Ethical Committee.

Source of Funding: Self

Conflict of interest: None

8. Recommendations

The following studies can be made based on the present study.

1) The study can be replicated for a larger sample of antenatal mothers from different settings.
2) A pre experimental study could be conducted to evaluate the effectiveness of structured teaching program regarding umbilical cord blood banking.
3) An experimental study can be undertaken to validate and standardize the information regarding umbilical cord blood banking among the antenatal mothers.

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