



A Descriptive Study to Assess Knowledge and Attitude Regarding Stem Cells and Umbilical Cord Blood Banking among Antenatal Women Attending Antenatal OPD of Selected Hospitals, Hoshiarpur, Punjab

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ABSTRACT

Aim: The aim of study was to assess knowledge and attitude regarding stem cells and umbilical cord blood banking among antenatal women attending antenatal OPD. **Background:** Stem cells have the remarkable potential to develop into many different cell types in the body during early life and growth. Umbilical cord blood banking, an important novel medical innovation, refers to the collection and long-term storage of hematopoietic stem cells obtained from the umbilical cord blood helps in the treatment of several life-threatening diseases i.e., more than 80. **Design:** A non-experimental descriptive research design was used with non-probability convenient sampling technique. **Material & Methods:** The study consisted of 100 antenatal women selected by non-probability convenient sampling technique. Data was collected by using self-structured questionnaire to assess knowledge and likert rating scale to assess attitude of antenatal women. Analysis was done by both descriptive and inferential statistics. **Findings:** The study findings showed that 49% of antenatal women had average knowledge, 47% had poor knowledge and 4% had good knowledge regarding stem cells and umbilical cord blood banking. In terms of attitude 75% antenatal women had positive attitude and 25% had neutral attitude regarding stem cells and umbilical cord blood banking. There was weak positive correlation between knowledge and attitude regarding stem cells and umbilical cord blood banking. **Conclusion:** The study concluded that antenatal women had average knowledge and positive attitude regarding stem cells and umbilical cord blood banking. Hence assumption proved wrong as antenatal women had average knowledge and positive attitude regarding stem cells and umbilical cord blood banking.

KEYWORDS

Stem Cells and Umbilical Cord Blood Banking

INTRODUCTION

Need of the study

The umbilical cord also called the birth cord or funicular umbilicalis is the connecting cord from the developing embryo or fetus to the placenta. During prenatal development, the umbilical cord comes from the same zygote as the fetus and in humans cord contains two umbilical arteries and one umbilical vein, buried within Wharton's jelly. The umbilical vein supplies the fetus with oxygenated, nutrient-rich blood from the placenta.¹

The umbilical cord in a full term neonate is usually about 50 centimeters long and about 2 centimeters in diameter. Umbilical

cord blood is blood that remains in the placenta and in the attached umbilical cord after childbirth. Cord blood is obtained from the umbilical cord at the time of childbirth. Cord blood is collected because it contains stem cells, including hematopoietic cells, which can be used to treat hematopoietic and genetic disorders.² In India, according to census 2011 there are approximately 72000 births daily, which result in discarding 72000 umbilical cords a day. The storage of stem cell rich blood derived from umbilical cord can prove to be the best possible insurance against life threatening diseases. Lifesaving material is literally being disposed off as



medical waste in labor and delivery units across the country day and night. Cord blood is being researched now for regenerative medicine where stem cells may help induce healing or regenerate cells to repair tissues. This exciting new area of medicine has led to clinical trials using cord blood in experimental therapies to treat cerebral palsy, brain injury, and juvenile diabetes.³

A descriptive study was conducted to determine pregnant women's knowledge and attitude towards stem cells and cord blood banking in two antenatal outpatient clinics in Istanbul. The sample was selected randomly for study purpose. The sample consisted of 334 pregnant women during routine prenatal visits and data was collected by interviews form. The form included demographic characteristics of participants and 20 questions about stem cells, storing cord blood and banking and 10 independent attitude statements. It revealed that, majority of the participants i.e., 86.6% had lack of knowledge about stem cells and cord blood banking. The majority i.e., 78.2% had positive attitude towards stem cells and cord blood banking⁵.

OBJECTIVES

The objectives of the study are:-

1. To assess knowledge regarding stem cells and umbilical cord blood banking among antenatal women.
2. To assess attitude regarding stem cells and umbilical cord blood banking among antenatal women.
3. To correlate knowledge and attitude regarding stem cells and umbilical cord blood banking among antenatal women.
4. To establish relationship of knowledge and attitude regarding stem cells and umbilical cord blood banking among antenatal women with selected demographic variables.
5. To develop and distribute information booklets regarding stem cells and umbilical cord blood banking among antenatal women.

Independent variables-Independent variables in the study were demographic variables of antenatal women such as age (in years), education, occupation, type of family, family income (₹/month), religion, gravida, parity, area of residence, type of hospitals, family history of genetic disorders and source of information.

Dependent variables-Dependent variables in the study were knowledge and attitude of antenatal women regarding stem cells and umbilical cord blood banking.

MATERIAL AND METHODS



A descriptive study was being conducted on all antenatal women attending antenatal OPD of Civil hospital and Gurcharan Kanwal hospital, Hoshiarpur, Punjab, in the month of February 2015. Civil hospital is one of the government hospital in Hoshiarpur which is 200 bedded hospital. Gurcharan Kanwal is 100 bedded hospital in Hoshiarpur for better maternity services. Both the hospitals are having all the facilities for maternal and child health care. The study was conducted on 100 antenatal women. Prior to the data collection the questionnaire and rating scale was prepared and permission was taken from the authorities of the hospitals.

The questionnaire consisted of two sections. The first part included socio-demographic questions as age (in years), education, occupation, type of family, family income (₹/month), religion, gravida, parity, area of residence, type of hospitals, family history of genetic disorders and source of information. The second part included 28 multiple choice questions to assess the knowledge and rating scale included 14 items to assess the attitude of antenatal women. Questionnaire was filled by women and data collected.

Statistical Program for Social Sciences (SPSS) version 11 software was used to analyze the collected data. T-tests and

ANOVAs were used to test significant differences in knowledge and attitude based age, education etc.. The results were considered significant at $p < 0.05$ and non-significant at $p > 0.05$.

RESULTS

In present study 100 women were studied. The results of observation were calculated by finding out the frequency and percentage. The observation were put under different tables. The Table 1 depicts that more than half of the antenatal women i.e., 60% were 25-31 years and least i.e., 4% were above 38 years. 41% of the antenatal women were educated upto secondary and least i.e., 5% were graduate and above. Maximum of antenatal women i.e., 90% were non-working and minimum i.e., 10% were working. Majority of the antenatal women i.e., 71% belonged to joint family and minority i.e., 7% belonged to extended family. Almost half of the antenatal women i.e., 52% had family income 10001-20,000 and least i.e., 7% had family income >30000. Almost half of the antenatal women i.e., 52% were Sikh and least i.e., 8 were from other category of religion. Almost half of antenatal women i.e., 52% were 2nd gravida and least i.e., 19% were 1st gravida. Almost half of antenatal women i.e., 52% were primipara and least i.e., 19% were



nuliipara. Almost half of antenatal women i.e., 52% were residing in urban area and almost half i.e., 48% were residing in rural area. More than half of the antenatal women i.e., 60% were from private hospital and least i.e., 40% were from government hospital. Majority of the antenatal women i.e., 98% had no family history of genetic disorders and minority i.e., 2% antenatal women had family history of genetic disorders. More than half of the antenatal women i.e., 56% obtained information from electronic media and least i.e., 2% obtained information from newspaper & magazine.

Demographic variables	n (%)
1. Age (in years)	
18-24	14
25-31	60
32-38	22
Above 38	4
2. Education	
Upto primary	
Secondary	30
Senior secondary	41
Graduate and above	24
3. Occupation	5
a. Working	
b. Non –working	10
4. Type of family	90
a. Nuclear	
b. Joint	
c. Extended	22
	71
	7
5. Family income (/month)	14
a. ≤ 10,000	52
b. 10,001-20,000	27
c. 20,001-30,000	7
d. > 30,000	
6. Religion	
a. Hindu	40
b. Sikh	52
c. Others	8
7. Gravida	

a.	1	
b.	2	19
c.	≥ 3	52
		29
8. Parity		
a.	Nullipara	
b.	Primipara	19
c.	Multipara	52
		29
Area of residence		
a.	Rural	
b.	Urban	48
		52
Type of hospital		
a.	Government	
	Privat	40
		60
Family history of genetic disorders		
a.	Yes	2
b.	No	98
Source of information		
a.	Electronic media	
b.	Peer group	56
c.	Health personnel	14
	Newspaper & magazine	28
		2

Table-2 Frequency and percentage distribution of antenatal women according to level of knowledge
N=100

Level of knowledge	n (%)
Poor	47
Average	49
Good	4
Very Good	-

Table 2 depicts that approximately half of the antenatal women i.e., 49% had average knowledge, followed by 47% had poor knowledge and least i.e., 4% had good knowledge regarding stem cells and umbilical cord blood banking.

Table 3 Frequency and percentage distribution of the antenatal women according level of attitude N=100

Level of attitude	n (%)
Negative attitude	-
Neutral attitude	25
Positive attitude	75

Table 3 depicts that majority of antenatal women i.e., 75% had positive attitude and rest of antenatal women i.e., 25% had



neutral attitude regarding stem cells and umbilical cord blood banking.

Table 4 Correlation between knowledge and attitude regarding stem cells and umbilical cord blood banking

Score	n	Mean	SD	r
Knowledge	100	7.99	2.949	0.252
Attitude	100	44.44	3.418	

Table -4 depicts that mean knowledge score was 7.99 and mean attitude score was 44.44 and correlation between knowledge and attitude was found 0.252. Which means weak positive correlation.

DISCUSSION

Findings of the present study revealed that approximately half of the antenatal women i.e., 49 % had average knowledge, 47% had poor knowledge and 4% had good knowledge regarding stem cells and umbilical cord blood banking. The result of this study was supported by the same study conducted by Karagiorgou L Z, Pantazopoulou P N. on knowledge about umbilical cord blood banking among Greek Citizens. The results showed that 48% of respondents knew about umbilical cord blood banking. 84% of the women would like to store or donate umbilical cord blood.⁶

The result of present study showed that majority of antenatal women i.e., 75% had positive attitude and least i.e., 25% had neutral attitude regarding stem cells and

umbilical cord blood banking. The result of present study was consistent with a study conducted by Dinc. H, Sahin NH. On pregnant women's knowledge and attitude regarding stem cells and cord blood banking. The results of the study revealed that majority i.e., 78.2% had positive attitude towards stem cells and cord blood banking.⁷

The result of present study was also consistent with a study conducted by Fernandez CV, Gordon K. on knowledge and attitude with regard to collection, testing and banking of cord blood stem cells among pregnant women. The study revealed that many of the respondents i.e., 68% had positive attitude regarding banking of cord blood stem cells.⁸

The result of present study showed that both knowledge and attitude of antenatal women regarding stem cells and umbilical cord blood banking had weak positive correlation. The results of present study was consistent with a study conducted by Katz G, Mills A, Garcia J. On knowledge and attitude of pregnant women regarding banking of cord blood stem cells in five European countries. In this study women with poor knowledge had positive attitude towards cord blood banking and the knowledge and attitude weakly correlated with each other.⁹



The results of present study revealed that occupation had a significant impact on knowledge and other variables like age, education, type of family, monthly family income, religion, gravida, parity, area of residence, type of hospital, family history of genetic disorders and source of information had no impact on knowledge regarding stem cells and umbilical cord blood banking. These findings were inconsistent with other study conducted by Perlow JH .He conducted a study on patients' knowledge of umbilical cord blood banking. 425 patients completed the survey; 37% had no knowledge of cord blood banking. Older patients and those with higher degrees of education were more aware of cord blood banking, and the greatest disparity of knowledge was noted among Native American patients. So there is significant relationship between knowledge and age and education of the patients.¹⁰

The findings of present study also inconsistent with another study conducted by Vijayalakshmi .S.Knowledge on collection and storage of cord blood banking among antenatal mothers. *Sinhgade Journal of Nursing*, Vol. III, Issue I, June 2013. The study shows that there is no significant association between knowledge and occupation of antenatal mothers¹¹.

CONCLUSION

The study revealed that almost half antenatal women had average knowledge regarding stem cells and umbilical cord blood banking. In terms of attitude antenatal women had positive attitude regarding stem cells and umbilical cord blood banking and correlation between knowledge and attitude was found weakly positive. Hence assumption proved wrong as antenatal women had average knowledge and positive attitude regarding stem cells and umbilical cord blood banking.

Limitations

The study was limited to small sample due to time constraints so findings cannot be generalized.

Recommendations

Recommendations are made on the basis of the study-

1. The study can be replicated on large sample to validate and for better generalization.
2. Nurses should encourage antenatal women for cord blood banking.
3. To assess the knowledge and attitude of nurse midwives regarding stem cells and umbilical cord blood banking.





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