RESEARCH ARTICLE

Knowledge and attitude regarding umbilical cord blood banking among antenatal mothers in OPD at Pondicherry Institute of Medical Sciences, Puducherry

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ABSTRACT

Objectives: To assess the level of knowledge and attitude regarding umbilical cord blood banking among antenatal mothers and to associate the level of knowledge and attitude regarding umbilical cord blood banking among antenatal mothers with selected demographic variables. **Methodology:** Samples of 70 were selected using convenient sampling technique and data collection was done through structured questionnaire. The data was collected and analyzed using the inferential and statistical method. **Results:** The present study showed that 24.3% of antenatal mothers had adequate and moderately adequate knowledge and majority 75.7% of them had inadequate knowledge. With regard to Attitude level 18.6% of antenatal mothers had Favorable and Neutral attitude and 81.4 % of them had Unfavorable attitude. The study results showed that there was statistically significant association between the level of knowledge with parity. **Conclusion:** The findings revealed that the knowledge and Attitude level on Umbilical cord blood banking among Antenatal mothers was very low and there is a need to improve it with the help of Health education programme and pamphlets distribution.

Keywords: Umbilical cord blood banking, parity, health education programme.

In the early 1900''s European researchers realized that the various type of blood cells e.g. white blood cells, red blood cells and platelets all came from a particular stem cell. Stem cells have an amazing ability to create different kinds of tissues when they divide and develop [1]. Cord blood is the blood from the baby that is left in the umbilical cord and placenta after birth. It contains special cells called hematopoietic stem cells. Hematopoietic stem cells can be used to treat more than 70 types of diseases [2]. In Vitro studies have shown that enough stem cells appear to be present in 60-100 ml of cord blood obtained after delivery of the infant [1]. UCB is collected from the umbilical vein into a sterile closed system collection bag containing an anticoagulant solution. Blood from placenta flows through the cord by gravity into the collection bag which is placed lower [3]. Then the bag is transported to the cord blood bank, where it is tested, processed and cryopreserved. There is a loss

of blood volume and cell count during these processes. The entire procedure must be performed by properly trained and qualified personnel in a well equipped laboratory to minimize microbial contamination of the unit and loss of viability of the stem cells [4]. Overall awareness regarding Umbilical Cord Blood banking was poor among pregnant women in India. Women were more aware of the more aggressively marketed private cord blood banking compared to public banking. Obstetricians should play a more active role in explaining the patients regarding pros and cons of stem cell banking [5]. The researcher's own experience while being posted in clinical settings showed the importance of educating pregnant mothers regarding Cord blood banking as they have lack of knowledge regarding it.

Methodology

Descriptive approach was used in this study. Non Experimental descriptive design was used to assess the knowledge and Attitude regarding Umbilical Cord blood banking among Antenatal mothers. The sample size was 70 and it was derived by assuming adequate knowledge regarding cord blood banking among antenatal mothers is at least 60%. Non-probability, convenient sampling was used for selecting the samples. Knowledge and Attitude of antenatal mothers were the dependent variables and Confounding variables were age, religion, educational qualification, occupation, parity, monthly family income, sources of information, gestational age. Antenatal mothers who are attending OPD during data collection and who can read and write Tamil were included and antenatal mothers who are not willing to participate in the study and are not present at the time of data collection were excluded. The tool consists of 3 sections:

Section 1: Demographic Variables

Section 2 : Structured Questionnaire to assess knowledge. It consists of 15 items. Each question had 4 options. One score was allotted to each correct answer and zero score for wrong answer. Maximum score was 15.

Section 3: A five point Likert scale towards the attitude regarding Umbilical cord blood banking. It consists of 10 statements. The tool was developed after extensive review of literature, internet search, and expert's advice. The reliability of the tool was established by split half method and the internal consistency of the tool was found to be reliable (r = 0.7). The study

objectives and the data collection process were approved by concerned authorities of the institution and the college. Thus ethical issues were ensured in the study. After obtaining formal permission, antenatal mothers were informed about the objectives of the study. Structured questionnaire were administered for a period of half an hour. At the end of the session, pamphlets were distributed. The collected data was tabulated and analyzed using descriptive and inferential statistics.

Results

The study was conducted in Antenatal OPD, Pondicherry Institute of Medical Sciences, Hospital at Ganapathichettikulam, Puducherry. The data was collected from 70 subjects by convenient sampling method and it was collected using Structured Questionnaire. Most of samples (52.9%) were in the age group of 21-25 years. Nearly half (50.0%) of the participants were graduate holders, nearly one third (88.6%) were not working. Majority (88.6%) of the participants were belonging to Hindu. Coming to family income majority (35.7%) were having a monthly income of > Rs.15, 000. With regard to parity majority (52.9%) were multi mothers. Approximately one third (52.9%) were in 3rd trimester. Regarding the source of information majority of the mothers (70.0%) have no idea about umbilical cord blood banking. Out of 70 samples majority of them 75.7% had inadequate knowledge and 24.3% of them had adequate/moderately adequate knowledge regarding cord blood banking. Majority of them 81.4% had unfavorable attitude and 18.6% had favorable/ moderately favorable attitude.

The Mean and standard deviation of knowledge of antenatal mothers regarding umbilical cord blood banking were 6.14 and 2.3 respectively with the minimum and maximum range of 2 and 12. The mean and standard deviation of attitude were 6.33 and 5.183 respectively with the minimum and maximum range of -8 and 19.

The table 1 shows that there was statistically significant association between knowledge on umbilical cord blood banking with socio demographic variable parity at the level of 0.05. There was no significant association between Attitude on umbilical cord blood banking with age, education, occupation, religion, income, parity and period of gestation of the antenatal mothers (Table 2). The table 3 shows that there was no

Table 1: Association between level of knowledge and demographic variables (N=70)

Demographic variables	Knowledge level Adequate /Moderately Adequate		Inadequate		χ^2	P value
	No.	%	No.	%		
Age						
<25 yrs	10	27	27	73	0.321	0.57 (NS)
>25yrs	7	21.2	26	78.8		
Education						
Primary	2	11.1	16	88.9		
Hr.sec	5	29.4	12	70.6	2.29	0.32 (NS)
Graduates	10	28.6	25	71.4		
Occupation						
Working	3	30	7	70	0.207	0.65 (NS)
Not working	14	23.3	46	76.7		
Religion						
Hindu	15	24.2	47	75.8		
Christian/ Muslim	2	25	6	75	5.634	0.29 (NS)
Monthly family income						
< Rs.10,000	4	13.3	26	86.7	3.425	0.64 (NS)
>Rs.10,000	13	32.5	27	67.7		
Parity						
Primi	12	36.4	21	63.6	4.96	0.03 *(S)
Multi	5	13.5	32	86.5		
Trimester						
I Trimester	4	44.4	5	55.6		
II Trimester	4	16.7	20	83.3	2.75	0.25 (NS)
III Trimester	9	24.3	28	75.7		

NS- Not significant   ***S-** Statistically significant (p<0.05)

Table 2: Association between Attitude and demographic variables (N=70)

Socio Demographic Variables	Attitude level Favorable/Moderately Favorable		Unfavorable		χ^2	P value
	No.	%	No.	%		
Age						
<25 years	6	16.2	31	83.8	0.288	0.592 NS
>25 years	7	21.2	26	78.8		
Education						
Primary	2	11.1	16	88.9		
Hr.sec	5	29.4	12	70.6	2.292	0.32 NS
Graduates	10	28.6	25	71.4		
Occupation						
Working	3	30	7	70	0.207	0.649 NS
Not working	14	23.3	46	76.7		
Religion						
Hindu	15	24.2	47	75.8	0.003	0.960 NS
Chiristian/Muslim	2	25	6	75		
Income						
<Rs.10,000	4	13.3	26	86.7	3.43	0.064 NS
>Rs.10,000	13	32.5	27	67.5		
Parity						
Primi	7	21.2	26	78.8	0.288	0.59 NS
Multi	6	16.2 99	31	83.8		
Trimesters						
I Trimester	4	44.4	5	55.6		
II Trimester	3	12.5	21	87.5	4.71	0.095 NS
III Trimester	6	16.2	31	83.8		

NS - Not significant

Table 3: Association between Knowledge and Attitude regarding umbilical cord blood banking among antenatal mothers (N=70).

Variables		Attitude level		Chi square value	P value
		Favourable/Moderately Favourable	Unfavourable		
Knowledge level	Adequate/ moderately adequate	4(23.5)	13(76.5)	0.365	0.546 (NS)
	Inadequate	9(17.0)	44(83.0)		

NS- Not significant

significant association between Knowledge and Attitude regarding umbilical cord blood banking among antenatal mothers at the level of 0.05.

Discussion

In our study 70 antenatal mothers who fulfilled the inclusion criteria were involved to assess the level of knowledge and attitude regarding umbilical cord blood banking. Among them 75.7% had inadequate knowledge and 81.4% had unfavorable attitude. All the mothers were distributed pamphlets at the end of the session and the importance of cord blood banking was emphasized to them. Majority of the mothers (75.7%) had inadequate knowledge regarding cord blood banking and the same has been observed in the study conducted by Suen et al[6] (78.2%). In the present study 81.4% of mothers had unfavorable attitude on contrary study conducted by Nisha P, Seeta D[7] it showed 1.7% (Pre-test) of the antenatal mothers had poor or unfavorable attitude.

Conclusion

The findings revealed that the knowledge and Attitude level on Umbilical cord blood banking among Antenatal mothers were very low and there is a need to improve it with the help of health education programme and pamphlets distribution.

Conflict of interest: None. **Disclaimer:** Nil.

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