

KNOWLEDGE ABOUT UMBILICAL CORD STEM CELL BANKING: METHODOLOGY AND FINDINGS

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ABSTRACT

The umbilical cord blood is an affluent source of stem cells that can be derived from two sources: cord blood and cord tissue. Daily births in India approximately 72000 a day that will result in dispose of 72000 umbilical cords per day. The repository of stem cell highly loaded blood collected from these umbilical cords can show to be the most available lifesaver against life hazardous illness condition.

Keywords: Knowledge, Attitude, Umbilical Cord, Stem Cell Banking, Antenatal Mothers.

Introduction

The umbilical cord blood is an affluent source of stem cells that can be derived from two sources: cord blood and cord tissue. The stem cells imitative from the cord blood are called hematopoietic stem cells- these have immense potential in curing blood-related disorders like blood cancer, thalassemia, etc. The cells collect from the cord tissue are called Mesenchymal stem cells- these can be useful in treating tissue related disorders of heart, bone, spinal cord, etc.

Methodoly

A descriptive research approach was adopted for the study. The research design used in my study was non-experimental, descriptive research design. The study was conducted in antenatal opd of selected hospital of Jaipur. Population of the study was pantenatal mothers attending antenatal OPD. The sample size was 400. Sampling technique was simple random sampling. A structured knowledge questionnaire was used for collecting data which includes socio demographic variables and knowledge & attitude assessment.

Objectives of the Study

- To assess the level of knowledge regarding umbilical cord stem cell banking among antenatal mothers.
- To assess the attitude regarding umbilical cord stem cell banking among antenatal mothers.
- To find out the association between the level of knowledge and attitude of antenatal mothers and selected demographic variables.
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- To find out the association between the level of knowledge of antenatal mothers and selected demographic variables.
- To develop an information booklet.

Results & Findings

The major findings of the study were that 80.25% of the mothers had poor knowledge, 13% had average knowledge, and 6.75% had good knowledge about umbilical cord stem cell banking. The data obtained was analyzed and presented in 4 different sections:

Section I: Description of demographic characteristics

Section II: Analysis of level of knowledge of the antenatal mothers regarding umbilical cord stem cell banking

Section III: Analysis of level of attitude of the antenatal mothers regarding umbilical cord stem cell banking

Section IV: Correlation between the level of knowledge and attitude regarding umbilical cord stem cell banking

Section V: Association between the level of knowledge regarding umbilical cord stem cell banking and selected demographic variables.

Section VI: Association between the attitude regarding umbilical cord stem cell banking and selected demographic variables.

Table 1: Distribution of Antenatal Mothers According to Their Demographic Variables

N = 400

S. N.	Variables	Categories	Frequency	Percentage %
1	Age	21 -25 years	123	30.75
		26-30 years	193	48.25
		31 - 35 years	65	16.25
		36 & above	19	4.75
2	Religion	Hindu	127	31.75
		Muslim	198	49.50
		Christian	45	11.25
		Others	30	7.50
3	Education	Graduate	213	53.25
		Post graduate	126	31.50
		Doctorate	44	11.00
		Any medical/ nursing / paramedical degree	17	4.25
4	Occupation	Housewife	219	54.75
		Private employee	77	19.25
		Govt. employee	56	14.00
		Business	48	12.00
5	Family Income in Rupees	10,000-20,000	27	6.75
		20,001-35,000	161	40.25
		35,001-50,000	166	41.50
		Above 50,001	46	11.50
6	Gravid State	Primi Gravida	145	36.25
		MultiGravida	255	63.75
7	Source of information	Family members	78	19.50
		Health personnel	191	47.75
		Mass – media	81	20.25
		Friends	50	12.50

Section II: Analysis of level of knowledge of the Primipara mothers regarding exclusive breast feeding

Part A: Level of knowledge of Primipara mothers regarding exclusive breast feeding

Table 2: Level of Knowledge of the Primipara Mothers Regarding Exclusive Breast Feeding

N = 500

S. N.	Level of knowledge	No. of Mothers	% of Mothers
1.	Poor	313	63.33
2.	Average	141	27.78
3.	Good	46	8.89

Assessment of the level of knowledge of antenatal mothers showed that 80.25% of the antenatal mothers had poor knowledge regarding umbilical cord stem cell banking, 13% had average knowledge and 6.75% of the antenatal mothers had good knowledge regarding umbilical cord stem cell banking.

Part B: Analysis of aspects of knowledge score of antenatal mothers regarding umbilical cord stem cell banking.

Table 3: Description of Aspects wise Range of Score, Mean, Median, SD, Mean Percentage of Knowledge Scores of Antenatal Mothers Regarding Umbilical Cord Stem Cell Banking

N = 400

S.N.	Aspects of Knowledge	No of Items	Max Score	Range of score	Mean	Median	S.D.	Mean %
1	Introductory knowledge about stem cell & umbilical cord	11	11	10-1	6.39	6.0	1.72	58.05
2	Cord blood stem cells, collection of cord blood stem cells & tissues, and their preservation	13	13	11-1	4.48	4.0	1.94	34.46
3	Uses, donation and benefits of umbilical cord stem cells banking	7	7	6-0	2.55	2.0	1.45	36.39

Part C: Analysis of overall knowledge score of antenatal mothers regarding umbilical cord stem cell banking.

Table 4: Description of Overall Knowledge Score, Mean, Median, SD and mean Percentage of Antenatal Mothers Regarding Umbilical Cord Stem Cell Banking

N = 400

No of Items	Maximum Score	Range of Score	Mean Score	Median Score	S.D.	Mean %
31	31	24-6	13.41	13	4.02	43.26

Section III: Section III: Analysis of attitude of the antenatal mothers regarding umbilical cord stem cell banking

In order to find out the attitude of antenatal mothers, a three-point scale was used. The percentage scores were graded arbitrarily as follows: <50% Unfavorable, 50-75% Moderately Favorable and >75% favorable attitude.

Table 5: Assessment of Attitude of Antenatal Mothers Regarding Umbilical Cord Stem Cell Banking

N = 400

S. N.	Level of knowledge	% score	No.	%
1.	Unfavorable Attitude	< 50	315	78.75
2.	Moderately Favorable Attitude	50 – 75	66	16.50
3.	Favorable Attitude	>75	19	4.75

Table 6: Description of Overall Attitude Score, Mean, Median, SD and Mean Percentage of Antenatal Mothers Regarding Umbilical Cord Stem Cell Banking

N = 400

No of Items	Maximum Score	Range of Score	Mean Score	Median Score	Mode	S.D.	Mean %
31	79	79-20	44.73	43	44	13.49	44.88

Section IV: Correlation between knowledge and attitude of antenatal mothers regarding umbilical cord stem cell banking.

Table 7: Correlation between Knowledge and Attitude of Antenatal Mothers Regarding Umbilical Cord Stem Cell Banking Issues

N=400

Variable	Attitude	
	r	p-value
Knowledge	0.648	p>0.05(df=398)

Section V: This section deals with association between level of knowledge and selected demographic variables of antenatal mothers by using inferential statistics.

**Table 8: Association between Level of Knowledge and Demographic Variables of Antenatal Mothers
N = 400**

S.N	Variables	Categories	Level of Knowledge			t ²	df	Significance
			Poor	Average	Good			
1.	Age	21 -25 years	104	12	07	9.16	6	NS
		26-30 years	152	29	12			
		31 - 35 years	54	6	5			
		36 & above	12	5	3			
2.	Religion	Hindu	101	17	9	9.25	6	NS
		Muslim	165	25	8			
		Christian	35	5	5			
		Others	20	5	5			
3.	Education	Graduate	187	20	6	48.47	6	S
		Post graduate	99	21	6			
		Doctorate	28	6	10			
		Any medical/ nursing degree	7	5	5			
4.	Occupation	Housewife	184	30	5	30.63	6	S
		Private	67	5	5			
		Govt.	34	12	10			
		Business	36	5	7			
5.	Family Income	10,000-20,000	17	5	5	11.83	6	NS
		20,001-35,000	128	25	8			
		35,001-50,000	140	17	9			
		Above 50001	36	5	5			
6.	Gravid State	Antenatal	118	20	7	1.39	2	NS
		Multigravida	203	32	20			
7.	Source of information	Family members	56	17	5	20.11	6	S
		Health personnel	165	18	8			
		Mass – media	65	11	5			
		Friends	35	6	9			

Section VI: This section deals with association between attitude and selected demographic variables of antenatal mothers by using inferential statistics.

**Table 9: Association between Attitude and Demographic Variables of Antenatal Mothers
N = 400**

S.N.	Variables	Categories	Attitude score			t ²	df	Significance
			Unfavorable	Moderately Favorable	Favorable			
1.	Age	21 -25 years	114	18	4	11.41	6	NS
		26-30 years	152	33	10			
		31 - 35 years	40	8	3			
		36 & above	9	7	2			
2.	Religion	Hindu	137	25	7	4.94	6	NS
		Muslim	136	27	7			
		Christian	24	7	3			
		Others	18	7	2			
3.	Education	Graduate	177	28	3	55.87	6	S
		Post graduate	115	24	5			
		Doctorate	19	8	7			
		Any medical/ nursing degree	4	6	4			
4.	Occupation	Housewife	159	31	3	25.06	6	S
		Private	92	12	4			
		Govt.	36	15	8			
		Business	28	8	4			
5.	Family Income	10,000-20,000	17	6	4	12.48	6	NS
		20,001-35,000	135	31	4			
		35,001-50,000	135	21	8			
		Above 50001	28	8	3			
6.	Gravid State	Antenatal	128	27	5	1.56	2	NS
		Multigravida	187	39	14			
7.	Source of information	Family members	55	19	4	22.54	6	S
		Health personnel	161	25	5			
		Mass – media	65	14	2			
		Friends	34	8	8			

Conclusion

The following conclusions were drawn based on the findings of the study:

- The level of knowledge of antenatal mothers regarding umbilical cord stem cell banking reveals that 80.25% had poor knowledge.
- Attitude of antenatal mothers regarding umbilical cord stem cell banking reveals that 78.75% mothers had unfavorable attitude.
- There was highly positive correlation between knowledge and attitude of antenatal mothers regarding umbilical cord stem cell banking.
- There was an association between knowledge of antenatal mothers and education, Occupation and source of information.
- There was an association between attitude of antenatal mothers and education, Occupation and source of information.

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