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Original Article

A QUASI EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON KNOWLEDGE AND ATTITUDE REGARDING UMBILICAL CORD BLOOD BANKING AMONG STAFF NURSES AT SELECTED HOSPITALS IN HISAR, HARYANA

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ABSTRACT :

Introduction: Umbilical cord blood is a rich source of hematopoietic stem cells, and worldwide it is represented as precious alternative for stem cell transplantation, compared with bone marrow and peripheral blood progenitor cell, because of the decreased graft versus host disease.

Material & Methods : To achieve the objective of the study an evaluative approach was adopted. The research design adopted for the study is quasi-experimental (pre-test – post-test control group design). The study sample consisted of 30 (Experimental group) and 30 (Control group) staff nurses working in Bock A & Block B of Maharaja Agrasen Medical College, Agroha, District Hisar. In this study, non-probability convenient sampling technique was adopted to select the sample.

Results : The findings of the present study revealed that majority of the subjects in experimental group (50%) and control group (50%) had poor knowledge of umbilical cord blood banking and experimental (63.3%) and control group (66.7%) had favourable attitude towards umbilical cord blood banking. There was a significant difference in the mean difference of pretest and posttest scores of knowledge among experimental and control group ($t98 = 30.15$, $P < 0.001$) and also there was a significant difference in the mean difference of pretest and posttest scores of attitude among experimental and control group ($t98 = 16.17$, $P < 0.001$).

Conclusion : The nurses should be aware on the cord blood banking, so that they will be able to provide accurate and relevant information's for the antenatal mothers and family members who will be coming for regular antenatal check-up.

Keywords : Effectiveness, Video assisted teaching programme, Umbilical cord blood banking, Knowledge, Attitude and Staff nurses.

INTRODUCTION

In the 1980's research study was done to identify the alternative sources of stem cells from foetal and neonatal cells that can be established for the treatment of the irradiation accidents. Umbilical cord blood was considered as a waste product. But they found that Umbilical cord blood which is collected during child birth is one of the rich sources of progenitor stem cell. The main advantage of cord blood in comparison to bone marrow and peripheral blood is decreased Graft versus Host Disease because of the presence of increased number of T-cells.

The global challenge which is faced all over the world is the non-availability of the hematopoietic stem cells or progenitor cell donors. Among the 9 million donors in the western countries 50% of the patients are unable to get a Human Leukocyte Antigen matching donors.[1]

Umbilical cord blood can be used for certain transplants like Allogeneic, autologous transplant and the tissue repair by differentiating into other tissue types and also the advantage of the umbilical cord blood is that it can be preserved for years. The absence of risk for mother's and donor's, ease of procurement, the reduced rate of transmitting the infections like cytomegalovirus, storing of the fully tested Human Leukocyte Antigen (HLA) in a frozen state which can be made available for the immediate use are the properties why cord blood is being used as a source of stem cell.[2]

The Indian Council of Medical Research (ICMR) estimated that about 50 million patients with heart

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disease, 5 million patients with Alzheimer's disease are the potential beneficiaries of the stem cell therapy. [3]

The first cord blood bank was started in New York in 1990, World-wide 20,000 cord blood transplants bus already been done. The process which is involved In the cord blood banking are recruitment, consent, testing or maternal donors, collection, processing cryoprese rvation, testing and finally releasing the cord blood units to transplant centres.[4]

World-wide by using the public cord blood banks, about 10,000 cord blood transplants can be done. So, it is very important to build up a proper awareness on the importance of public cord blood banking. [5]

American College of Obstetricians and Gynaecologists are recommending that Cord blood preservation and collection can be suggested for all the families but it has to be stored in the public cord blood bank for accessibility of the general population when they are needed. [6]

Approximately 10,000 patients worldwide with diseases like malignant disorders, failure of bone marrow, hemoglobinopathies, error of metabolism, genetic and immune disorders were the recipients of stem cell transplant by the umbilical and blood. [6]

OBJECTIVES

The objectives of the study are:

I. to assess the knowledge and attitude regarding cord blood banking among staff nurses.

II. to find the effectiveness of video assisted teaching programme on knowledge and attitude regarding cord blood banking among staff nurses.

III. to find out the association of knowledge and attitude of cord blood banking with selected socio-demographic variables.

MATERIAL & METHODS

The research design adopted for the study is quasi-experimental (pre-test – post-test control group design). The study sample consisted of 30 (Experimental group) and 30 (Control group) staff nurses. In this study, non-probability convenient sampling technique was adopted to select the sample.

Data was collected by structured questionnaire developed by the researcher.

Demographic profile consisting of 8 items seeking information on gender, age, qualification, current nursing role, total experience, previous areas of experience heard about umbilical cord blood stem cell banking (if yes, source of knowledge) and patient getting benefited from umbilical cord blood stem cells.

Knowledge MCQ scale consists of 25 items under the areas of cord blood banking including collection/ procedure, physiology, counselling, benefits, precautions and preservation. According to the score, the knowledge scores were categorized as very good (21-25), good (16-20), average (11-15), poor (06-10) and very poor (00-05).

Attitude was assessed by a Likert scale which was developed by the researcher. The scale consists of 25 items under the dimensions of collection/ procedure, physiology, counselling, benefits, myths and preservation. The scores were arbitrarily classified as highly favourable (101-125), favourable (76-100), unfavourable (51-75) and highly unfavourable (25-50).

RESULTThe data collected were categorized and analysed based on the study objectives and hypotheses using descriptive and inferential statistics. Statistical package for social sciences (SPSS) version 20.0 was used to analyse the data.

Frequency and Percentage of demographic variables among staff nurses in experimental and control group are tabulated in table [1].

n= (30+30) =60

Sl. No.	Variable	Experimental		Control	
		f	%	f	%
1	**Gender**				
	Male	0	0.00 %	0	0.00 %
	Female	30	100.0 %	30	100.0 %
2	**Age in years**				
	21-35 years	27	90.00 %	24	80.00 %
	36 to 50 years	3	10.00 %	6	20.00 %
	> 51 years	0	0.00 %	0	0.00 %
3	**Qualification**				
	M.Sc. Nursing	0	0.00 %	1	3.33 %
	B.Sc. Nursing/ Post Basic B.Sc. Nursing	18	60.00 %	11	36.67 %
	GNM	12	40.00 %	18	60.00 %
4	**Current Nursing Role**				
	Supervisory Nurse	1	3.33 %	1	3.33 %
	Senior Nursing Officer/ Ward in charge	1	3.33 %	5	16.67 %
	Nursing officer	28	93.33 %	24	80.00 %
5	**Total years of experience**				
	< 5 years	19	63.33 %	12	40.00 %
	6-10 years	7	23.33 %	8	26.67 %
	> 10 years	4	13.33 %	10	33.33 %
6	**Previous areas of experience**				
	Labour Theatre	11	36.67 %	6	20.00 %
	Maternity ward	12	40.00 %	16	53.33 %
	Operation theatre	4	13.33 %	0	0.00 %
	Other	3	10.00 %	8	26.67 %
7	**Have you heard about UCBSC**				
	Yes	22	73.33 %	21	70.00 %
	No	8	26.67 %	9	30.00 %
	If Yes, sources of Knowledge				
	Books/ Journals	11	50.00 %	13	61.90 %
	Newspaper/ Magazines/ Internet	7	31.82 %	6	28.57 %
	Television/ Radio	4	18.18 %	1	4.76 %
	Other	8	36.36 %	1	4.76 %
8	**Patient getting Benefited from UCBSC**				
	Yes	2	6.67 %	0	0.00 %
	No	28	93.33 %	30	100.0 %

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The data presented in Table 2 show that majority of the subjects in experimental (50%) and control group (50%) had poor knowledge of umbilical cord blood banking

n= (30+30) =60

Group	Category	Knowledge	
		Frequency (F)	Percentage (P)
Experimental group	Very Good	00	0.00 %
	Good	00	0.00 %
	Average	14	46.67 %
	Poor	15	50.00 %
	Very Poor	01	03.33 %
Control group	Very Good	00	0.00 %
	Good	00	0.00 %
	Average	10	33.33 %
	Poor	15	50.00 %
	Very Poor	05	16.67 %

Maximum Score: 25

The data presented in Table 3 show that majority of the subjects in experimental (63.3%) and control group (66.7%) had favourable attitude towards umbilical cord blood banking.

n= (30+30) =60

Group	Category	Attitude	
		Frequency (F)	Percentage (P)
Experimental group	Highly favorable	02	06.7 %
	Favorable	19	63.3 %
	Unfavorable	09	30.0 %
	Highly unfavorable	00	0.00 %
Control group	Highly favorable	02	06.7 %
	Favorable	20	66.7 %
	Unfavorable	08	26.7 %
	Highly unfavorable	00	0.00 %

Maximum Score: 125

In order to find the effectiveness of video assisted teaching program on cord blood banking knowledge the following null hypothesis was stated.

H01: There will be no significant difference between the mean pretest and post test scores of knowledge among staff nurses in experimental and control group.

To find significant difference in the mean pre-test and post-test measurement values of knowledge in experimental and control group, independent t test value was computed as the data was normally distributed. The findings are presented in table [5].

n= (30+30) =60

Stress	Experimental			Control			t	df	p value
	Mean	Mean difference	SD	Mean	Mean difference	SD			
Pre test	9.97		2.43	09.07		3.29			
		11.13			0.09		30.15	58	< 0.001*
Post test	21.10		1.93	09.16		3.31			

*significant

The findings of the present study revealed that there is a significant difference in the mean difference of pretest and posttest among experimental and control group (t98 = 30.15, P < 0.001). It may be interpreted that video assisted teaching programme on umbilical cord blood banking is effective in increasing knowledge among staff nurses.

To find the effectiveness of video assisted teaching program on cord blood banking attitude the following null hypothesis was stated.

H02: There will be no significant difference between the mean pretest and post test scores of attitude among staff nurses in experimental and control group.

To find significant difference in the mean pre-test and post-test measurement values of attitude in experimental and control group, independent t test value was computed as the data was normally distributed. The findings are presented in table [5].

n= (30+30) =60

Stress	Experimental			Control			t	df	p value
	Mean	Mean difference	SD	Mean	Mean difference	SD			
Pre test	84.07		13.63	83.17		14.13			
		19.87			0.76		16.17	58	< 0.001*
Post test	103.93		08.05	83.93		13.60			

*significant

The findings of the present study revealed that there is a significant difference in the mean difference of pretest and posttest among experimental and control group (t98 = 16.17, P < 0.001). This shows that video assisted teaching programme on cord blood banking is effective in increasing attitude among staff nurses.

To determine the association between knowledge score and selected demographic variables, Chi square test was computed.

The data represented in the study shows that there was significant association between the knowledge of staff nurses regarding umbilical cord blood banking and demographic variables such as qualification (x2- 15.42;

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p-0.043) and previously heard about umbilical cord blood stem cell banking (x2- 7.31; p-0.026).

To determine the association between knowledge score and selected demographic variables, Chi square test was computed.

The data represented in the study shows that there was significant association between the attitude of staff nurses regarding umbilical cord blood banking and demographic variables such as qualification (x2- 15.03; p-0.05), previously heard about umbilical cord blood stem cell banking (x2- 7.163; p-0.028) and patient getting benefited from umbilical cord blood stem cells (x2- 7.515; p-0.023).

CONCLUSION

Staff nurses had poor knowledge regarding umbilical cord blood banking before introducing video assisted teaching programme, and there was a significant increase in knowledge among staff nurses after introduction of video assisted teaching programme.

Staff nurses had favourable attitude regarding umbilical cord blood banking before introducing video assisted teaching programme, and there was a significant increase in attitude among staff nurses after introduction of video assisted teaching programme.

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