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Assess the effectiveness of video assisted teaching programme on umbilical cord blood stem cell collection and banking among BSc (N) III year students in SMCH

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Abstract

Umbilical cord is the essential vitalizing direct interlink between a mother and her child, which is always depicted as the relationship and an emotional bonding of motherhood, which is a beautiful experience for a woman. Stem cells are the building blocks for every type of cells in the body, capable of maturing in to any type blood or cells in the nervous system. The main aim of the study was to assess the effectiveness of Video Assisted Teaching Programme on Umbilical Cord Blood Stem Cell Collection and Banking among B.Sc. (N) III Year Student in Saveetha medical college and hospital, Thandalm, Kancheepuram district. The Pre- experimental research design was adopted for this study and Convenience sampling technique was used to 30 students was selected in SMCH hospital, at Thandalam. The data was collected organised and analyzed in term of descriptive statistics and inferential statistics. pre test: In this out of 30 samples, 17(57%) members were inadequate knowledge, 10(33%) members were moderate knowledge and 3(10%) adequate knowledge in pre test. post test: In thus out of 30 samples 5(17%) members were in inadequate knowledge, 12(40%) members were in moderate knowledge and 13(43%) members were in adequate knowledge. The paired 'T' test value for knowledge on umbilical cord blood stem collection and banking was 0.007 which is significant at $p < 2.05$. The study findings reveal that suggest, It is important to know the banking of umbilical cord blood stem collection. Education about the banking one of the important aspects in day-today life. For effective education the students should gain knowledge about banking and importance of banking thus it can help to be knowledgeable society tomorrow.

Keywords: Assess, umbilical cord blood, stem cell collection, video assisted teaching

Introduction

Cord blood banking is a once-in-a-lifetime opportunity to save your baby's cord blood stem cells for potential medical uses. Having cord blood saved can be lifesaving or life-changing for your baby or other family members and ensures that these cells are immediately available if ever needed ^[1]. 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, after the cord has been detached from the newborn. Cord blood is collected because it contains stem cells, including hematopoietic cells, which can be used to treat hematopoietic and genetic disorders ^[2].

Cord blood is a unique product, rich in haemopoietic stem cells, that is currently used in the transplantation setting to restore haemopoiesis. It restores haemopoietic stem cell function in patients suffering from malignancies, bone marrow failure disorders and inherited metabolic and immunological disorders ^[3]. In India, there are approximately 72000 births daily, which results in discarding 72000 umbilical cords a day. The storage of stem cell rich blood derived from these umbilical cords can prove to be the best possible insurance against life threatening diseases ^[13]. Lifesaving materials are literally being disposed of as medical waste in labour and delivery units across the country day and night ^[4].

Cord blood stem cells have been successfully used in transplant medicine for more than 20 years. To date, cord blood has been used to treat nearly 80 diseases, including leukemia, other cancers, and blood disorders ^[5]. According to National Marrow Donor Program, World-wide, there were 2000 cord blood transplants in the year 2006. There have been over 15,000 cord blood transplants worldwide through 2009 ^[18]. Thousands of people worldwide have been beneficiaries of these therapeutic advantages, and to date, nearly 500 umbilical cord blood hematopoietic stem cell transplants occur annually in the United States.

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About 92 such transplants have done in India so far and 5 in Chennai [6].

A study was conducted to evaluate and better understand patient’s current knowledge regarding issues of umbilical cord blood banking in Halifax in 2009; over 400 patients were surveyed on this matter. Interestingly the study reveals, although approx two-thirds of patients had heard of cord blood banking, less than 3% described themselves as “extremely knowledgeable” while 74% felt “minimally informed.” Furthermore and importantly, only 14% of these pregnant women stated that they had been educated about umbilical cord blood banking by an obstetrical care provider, but 90% did have an expectation that their obstetrician could answer their questions on this topic. When patients were asked from where they would want to receive cord blood banking education, most patients preferred to receive such information from their healthcare provider [7].

Materials and methods

A pre experimental research design was adopted by the investigator to assess the effectiveness of Video Assisted Teaching Programme on Umbilical Cord Blood Stem Cell Collection, and banking among B.Sc (N)-III Year Students in Saveetha medical college and hospital, Thandalm, Kancheepuram District. The samples were selected using a convenient sampling technique. 30 samples who met the inclusion criteria were selected for the study group. The purpose of the study was explained to the sample and their written consent was obtained. Data was collected using demographic variable and then pre-test video teaching and was measured using a model of the group and then video assisted teaching was taught. Data were collected. Descriptive and inferential statistics were used for analysis.

Results and discussion

Table 1: Frequency and percentage distribution of knowledge in pre test and post test study group

Knowledge	Pre test		Mean	SD	Post test		Mean	SD
	No	%			No	%		
Inadequate knowledge	17	57%	3	3.3	5	17%	2	3.3
Moderate knowledge	10	33%			12	40%		
Adequate knowledge	3	10%			13	43%		

Pre Test

In this out of 30 samples, 17(57%) members were inadequate knowledge, 10(33%) members were moderate knowledge and 3(10%) adequate knowledge in pre test.

Post Test

In thus out of 30 samples 5(17%) members were in inadequate knowledge, 12(40%) members were in moderate knowledge and 13(43%) members were in adequate knowledge.

Table 2: Effectiveness of VATP in the Study group.

Study group	Pre test		Post test	
	Mean	SD	Mean	SD
	3	3.3	2	3.3
	t=0.007		p= 2.05	

The paired ‘T ’test value for knowledge on umbilical cord blood stem collection and banking was 0.007 which is significant at $p < 2.05$.

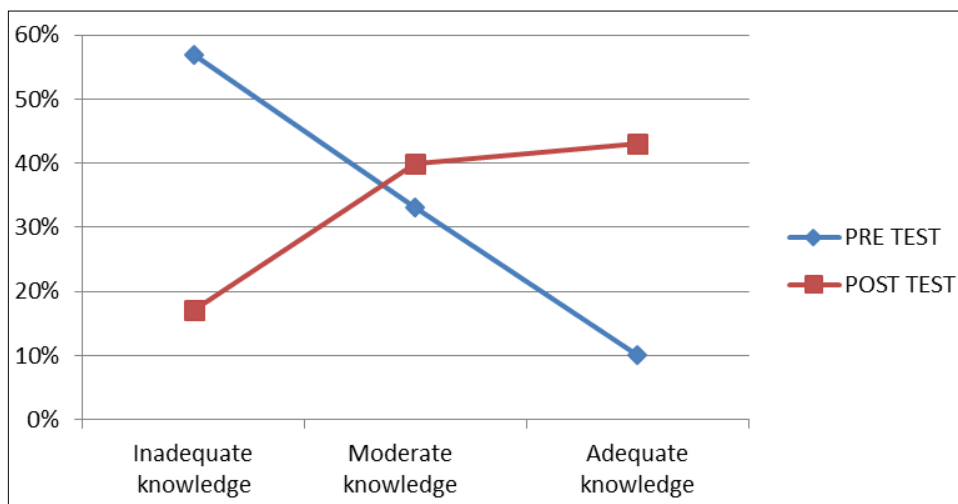


Fig 1: Frequency and percentage distribution of knowledge in pre test and post test study group

The frequency and percentage distribution of demographic data among the selected 30 samples. Out of 30 samples in study group 26 (87%) belongs to the age group of 19 years and 4(13%) belongs to the age group of 20 years. Regarding sex 15 (50%) in female, 15(50%) in male. regarding education 30 (100%) in graduated regarding religion 12(40%) in Hindu and 18 (60%) in Christian. Reveals that out of 30 samples, 17 members in pre test and 5

members in post test were inadequate knowledge; 10 members in pre test and 12 members in post test were moderate knowledge; 03 members in pre test and 13 members in post test were adequate knowledge. The paired ‘t’test value for knowledge on umbilical cord blood stem collection and banking was 0.007 which is significant at $p < 2.05$.

Discussion

Blood has a lower risk of some important viral infections and a lower incidence and severity of acute and chronic graft versus host disease than Bone Marrow. It is readily available, and causes no physical harm or inconveniences to the donor in the processing of harvesting cells. Waiting time between initiating the search and the time to transplant from an unrelated donor is much shorter with cord blood than with unrelated donor bone marrow.⁸ the present study was conducted with 30 samples to assess the effectiveness of Video Assisted Teaching Programme on Umbilical Cord Blood Stem Cell Collection, and banking among BSc (N)-III Year Students. The result of the study reveals that out of 30 samples, 17 members in pre test and 5 members in post test were inadequate knowledge; 10 members in pre test and 12 members in post test were moderate knowledge; 03 members in pre test and 13 members in post test were adequate knowledge. The paired 'T' test value for knowledge on umbilical cord blood stem collection and banking was 0.007 which is significant at $p < 2.05$. A study was conducted to evaluate and better understand patient's current knowledge regarding issues of umbilical cord blood banking in Halifax in 2009, over 400 patients were surveyed on this matter. Interestingly the study reveals, although approx two-thirds of patients had heard of cord blood banking, less than 3% described themselves as "extremely knowledgeable" while 74% felt "minimally informed." Furthermore and importantly, only 14% of these pregnant women stated that they had been educated about umbilical cord blood banking by an obstetrical care provider, but 90% did have an expectation that their obstetrician could answer their questions on this topic. When patients were asked from where they would want to receive cord blood banking education, most patients preferred to receive such information from their healthcare provider.

The Indian Council of Medical Research has estimated that some 50 million patients with heart disease, 5 million with Parkinson's disease and 5 million with Alzheimer's disease in India are 'potential beneficiaries' of stem cell therapy^[9].

Conclusion

Cord blood stem cells have been successfully used in transplant medicine for more than 20 years. To date, cord blood has been used to treat nearly 80 diseases, including leukemia, other cancers, and blood disorders. 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 diabetes⁴ it's the responsible of the health professional to motivate about the healthy life style. The nurse educator needs to assess the existing level of knowledge and impart more insights into subjects that are important to the society. The professional and student nurses can conduct further studies on knowledge, attitude and practices towards life style modification. Education about the banking one of the important aspects in day –today life. For effective education the students should gain knowledge about banking and important of banking thus it can help to be knowledgeable society tomorrow

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Conflict of interest

Authors declares no conflict of interest

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