



RESEARCH ARTICLE

TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON KNOWLEDGE REGARDING IMPORTANCE OF UMBILICAL CORD BLOOD PRESERVATION FOR FUTURE TREATMENT MODALITIES AMONG EXPECTANT COUPLES AT SELECTED HOSPITALS

Mr. Manikanadan P.N¹, Mr. Arun Unnikrishnan² and Mrs. Kavita Malik³

1. Asst. Professor, Swami Vivekanand Subharti University, Meerut.
2. Associate, Professor, Swami Vivekanand Subharti University, Meerut.
3. Asst. Lecturer, Swami Vivekanand Subharti University, Meerut.

Manuscript Info

Manuscript History

Received: 18 July 2024

Final Accepted: 20 August 2024

Published: September 2024

Key words:-

Umbilical Cord Blood Preservation,
Knowledge, Treatment Modalities,
Expectant Couples

Abstract

Health is the general condition of a person in all aspects; it is also a level of functional and metabolic efficiency of an organism. Nothing is more important than protecting the health of your family. A healthy future starts with saving - or "banking" - your newborn's cord blood stem cells. It's a one-time opportunity that can change or even save a life. After a baby is delivered, the mother's body releases the placenta, the temporary organ that transferred oxygen and nutrients to the baby while in the mother's uterus. Stem cell research holds enormous promise for easing human suffering. We have a lot to gain through furthering stem cell research, but medical breakthroughs should be fundamentally about saving, not destroying, human life. Therefore, support stem cell research that does not destroy the embryo. The aim of this study is to assess the effectiveness of video assisted teaching programme on knowledge regarding importance of umbilical cord blood preservation for future treatment modalities among expectant couples. The main objective of the study was to assess the knowledge regarding importance of umbilical cord blood preservation for future treatment modalities among expectant couples.

Methodology: The sample size was 60 expectant couples and the setting of the study was selected hospitals where the couples come for antenatal checkup. Sampling technique was convenient sampling technique. One group pretest posttest design was used.

Result: The study shows that in pre-test 81.67% of couples were having inadequate knowledge and 18.33% of them having moderately adequate knowledge and none of them having adequate knowledge. While in post test 55% of expectant couples were having Moderately Adequate knowledge and 45% of them having adequate knowledge and none of them having inadequate knowledge. The result shows that the video assisted teaching was effective in improving the knowledge. There was significant association between selected demographic variables and post test score.

Conclusion: The teaching was effective in increasing the knowledge of expectant couples and similar awareness programmes should be given

to the public so that they can understand regarding the newer treatment modalities.

Copyright, IJAR, 2024,. All rights reserved.

..... **Introduction:-**

Stem cell research is the key to developing cures for degenerative conditions like Parkinson's and motor neuron disease from which many patients suffer. The fact that the cells may come from embryos is not an objection, because the embryos are going to die anyway (Stephen Hawking). In coming decades, stem cells will be reversing diseases ranging from Alzheimer's to autism, re-growing organs and tissues, and potentially allowing the first humans to reach the age of 200. Stem cell research will prolong life, improve life and give hope for life to millions of people. Health is considered as a basic human right. As basic human needs are essential for survival, people strive to meet them. Person whose needs are met may be considered to be healthy, and a person with one or more unmet needs is at increased risk of illness or health alteration in one or more of the human dimensions.

The major clinical use of cord blood has been for hematological malignancy in children. A survey from the International Bone Marrow Transplantation Registry (IBMTR) estimated that since 1998, one-fifth of stem cell transplants performed for young patients (less than 20 years old) are cord blood transplants, mostly for acute lymphoblastic leukemia or acute myeloblastic leukemia. The availability of cord blood as an alternative to bone marrow as a source of HSC for allogeneic transplantation has a number of potential advantages for both adults and children in clinical practice in comparison with other sources of allogeneic hematological stem cells.

Nothing is more important than protecting the health of your family. A healthy future starts with saving your newborns cord blood stem cells. A one-time opportunity that can change or even save a life. After a baby is delivered, the mother's body releases the placenta, umbilical cord blood could supply the same kinds of blood-forming stem cells as a bone marrow donor.

Need for the study:-

Baby's umbilical cord blood is a rich source of special blood cells called stem cells. Stem cells are the body's building blocks for blood, organs, tissue, and the immune system and are genetically unique to each baby. Cord blood contains hematopoietic stem cells. Cord blood stem cells are blood cell progenitors which can form red blood cells, white blood cells, and platelets. This is why cord blood cells are currently used to treat blood and immune system related genetic diseases, cancers, and blood disorders. Baby's cord blood is a unique biological resource that is like a 'self-repair kit' for child and other possible family members.

The major clinical use of cord blood has been for hematological malignancy in children. The availability of cord blood as an alternative to bone marrow as a source of HSC for allogeneic transplantation has a number of potential advantages for both adults and children in clinical practice in comparison with other sources of allogeneic hematological stem cells. The Hematopoietic stem cells found in cord blood can rebuild and replenish the body's blood and immune systems. Other forms of cells that Hematopoietic stem cells can differentiate into include: - Blood vessels, Bone cartilage, Blood cells, Immune-system cells, Muscle cells, and Nerve cells

A growing number of families everyday are choosing to bank their babies' umbilical cord blood as a potential cure for dozens of cancers, blood disorders, immune and genetic diseases. This is especially true for families that have a history of disease. Stem Cyte offers many options to help families just like yours afford to save this precious resource.

Review of Literature:-

A Descriptive study was done to investigate the knowledge of cord blood and attitudes toward Cord Blood banking among high-potential donors in Canada. Questionnaires examining perspectives on Cord Blood were distributed to and completed by 1001 women attending a maternity education programme. The study reveals that minimal information was obtained from obstetricians including the nurses. More than 90% of women who planned to donate cited "altruism," and 75.0% of the "private preservation" group indicated that a desire to "safeguard for the future" was the reason for their decision.

A Quasi experimental study was done on knowledge about cord blood banking, decision-making authority, attitudes about cord blood banking procedures and attitudes to public versus private cord blood banking. A total of 263 pregnant women at the IWK^{Health} Centre, Halifax. The following factors were determined by χ^2 analysis to be predictive of support for alternative uses: older age ($p = 0.002$), higher education ($p = 0.018$), white ethnicity ($p = 0.001$), previous blood donation ($p = 0.001$) and willingness to allow follow-up testing of a donor child ($p = 0.02$).

A Descriptive study to assess the knowledge and attitude regarding cord blood banking among staff nurses were conducted in selected hospitals in USA. 200 staff nurses participated in the study. The study reveals that staff nurses were unaware and misunderstood so they disagreed with the recommendations of cord blood banking although knowledge of ethical concepts and collection and storage of cord blood were there.

Objectives of the study:-

1. To assess the existing knowledge regarding importance of umbilical cord blood preservation for future treatment modalities among expectant couples.
2. To assess the effectiveness of Video Assisted Teaching programme on knowledge regarding importance of umbilical cord blood preservation for future treatment modalities among expectant couples.
3. To find out the association between post-test levels of knowledge on Video Assisted Teaching programme regarding importance of umbilical cord blood preservation for future treatment modalities among expectant couples with their selected demographic variables.

Hypothesis

H 1: There will be significant difference between post test level of knowledge score with the pre-test knowledge score regarding importance of umbilical cord blood preservation for future treatment modalities among expectant couples.

H 2: There will be an increase in the mean post-test knowledge scores among the expectant couples compared to pre-test knowledge scores after the video assisted teaching programme.

H 3: There may be significant association between post test levels of knowledge score regarding importance of umbilical cord blood preservation for future treatment modalities among expectant couples with their selected demographic variables.

Setting of the study:-

The study was conducted at selected hospitals.

Sample and sample size:-

The sample of this study consists of 60 expectant couples.

Sampling technique:-

The sampling technique is Non probability convenient sampling technique

Criteria For Selection Of Sample

Inclusion Criteria

1. Age group 18-30 years.
2. Couples expecting a baby
3. Who are willing to participate in the study
4. Who can follow to read or write English or Hindi

Exclusion Criteria

1. Couples with anxiety disorder and other psychiatric illness.
2. Couples who are not willing to participate in the study.
3. Who are not available during period of data Collection

Methods of data collection:-

After obtaining official permission from the concerned authority and informed consent from the sample the investigator will conduct the interview personally by using structured questionnaire to assess the level of knowledge.

Results:-

The socio-demographic variable related to age indicates that majority of 46.66% (28) of expectant couples were in age group of 23-25 years, Religion indicates that majority of 53.33%(32) belongs to Hindu religion, Educational status indicates that majority 45%(27) had secondary level education, 26.67%(16) were degree education, 15%(9) were primary education remaining 13.33%(8) were Post graduates, Occupation indicates that 58.33%(35) of couples were doing private jobs, 25%(15) were government employees, remaining 16.67%(10) were doing Business, Type of family indicates that Majority of 63.33%(38) of couples were living in nuclear family, 21.67%(13) were living with extended family remaining 15%(9) were with Joint family, Family income indicates that majority of 46.67% (28) of expectant couples income was Rs.10001-20000, 36.67%(22) income certificates Rs.5001-10000, Remaining 8.33%(5) income was Below Rs.5000, Above Rs.20000, Exposure to source of health Information indicates that majority of 40%(24) of mothers source of information from Media, 31.67%(19) sources from Friends/Relatives/Public, 21.66%(13) from Health personnel remaining 6.67%(4) were, Maternal services available from indicates that majority of 43.34%(26) of couples get maternal services from Hospital, 30%(18) from Nursing home, 23.33%(14) get services from P.H.C remaining 3.33%(2) get service from Sub Centre.

In pre-test 81.67% of couples were having inadequate knowledge and 18.33% of them having moderately adequate knowledge and none of them having adequate knowledge.

In post test 55% of expectant couples were having Moderately Adequate knowledge and 45% of them having adequate knowledge and none of them having inadequate knowledge.

In Knowledge on Umbilical Cord blood preservation, mean score was 20.77, mean% (79.88) and SD (1.73), an expectant couples have overall 77.6% of knowledge. They were having an increase in knowledge after administering video assisted teaching.

Comparison of knowledge on importance of umbilical cord blood preservation for future treatment modalities before & after video assisted teaching shows that in all the aspects, expectant couples improved their knowledge after the administration of video assisted teaching. The difference between pre and post- test knowledge score is large and it is significant. Statistical significance was calculated by using student's paired 't' test.

Overall knowledge of expectant couples before & after video assisted teaching shows that on an average couples improved their knowledge from 12.68 to 23.28 after video assisted teaching. The difference between pre and post-test knowledge score is $t = 28.08$ $P = 0.000$ significant and it was significant. Statistical significance was calculated by using student's paired 't' test.

There for research hypothesis H_2 was accepted.

Association of post test level of knowledge regarding importance of umbilical cord blood preservation for future treatment modalities after administering the Video assisted teaching, Chi-Square of age is ($X^2 = 12.803$, $df=3$), Religion ($X^2 = 21.44$, $df=3$), Educational status of couples ($X^2 = 14.58$, $df=3$), Occupation ($X^2 = 7.57$ $df=2$), Family income ($X^2 = 31.21$, $df=3$), Exposure to source of health Information ($X^2 = 15.627$, $df=3$), Maternal services available from ($X^2 = 19.83$, $df=3$), are significant at 0.05 level. Remaining Type of family ($X^2 = 3.42$, $df=2$), are not significant.

It indicates that there is a significant association between socio-demographic variables and the post test level of knowledge. Socio demographic variables like Age, Religion, Educational status of couples, Occupation, Family income, Exposure to source of health Information, Maternal services available from calculated value are higher than the table value at 0.05 level. Hence there is a significant association between the mean post test knowledge of expectant couples and the selected socio demographic variables. There for research hypothesis H_3 was accepted.

Limitations:

1. The study was conducted for the representative group of the whole population in selected hospital only, hence generalization is limited to the expectant couples came for antenatal checkup in Hospital.
2. The limitations of the study were extraneous variables like age, sex, education, religion occupation, income, type of family, previous history and source of knowledge beyond the investigators control.
3. The study did not have a control group hence the result of the study must be generalized with caution.

Summary:

This study was intended to assess the knowledge of expected couples regarding Umbilical cord preservation, but the knowledge level was poor in pretest and improved after intervention in post test. A large sample survey is required as it is one among the future technology which can have impact in the management of diseases of genetic concern. More awareness campaigns can be organized to have a general awareness among the public regarding Umbilical cord blood preservation.

References:-

1. The free dictionary. Umbilical Cord Blood Banking. [Online]. 2006 December [cited 2011 Nov 5]; Available from: <http://medical-dictionary.thefreedictionary.com/Umbilical+Cord+Blood+Banking>
2. Brijitha Chandran. Umbilical Cord Blood Banking: What, Why, How?[online].Cited on January 29, 2010, available from: <http://www.chillibreeze.com/articles/UmbilicalCordBloodBanking.asp>
3. Umbilical Cord Blood Stem Cells. [Online] Available from: <http://news.cancerconnect.com/umbilical-cord-blood-stem-cells/>
4. Wikipedia the free encyclopedia. Cord Blood banking. [Online] Available from: http://en.wikipedia.org/wiki/Cord_blood_bank
5. Fernandez CV, Gordon K, Van Den Hof M, Taweel S, Baylis F. CMAJ. 2003. March 18; 168(6): 695–698. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC154914/>.
6. Bhattacharya N, Mukherjee K, Chettri MK, Banerjee T, Mani U, Battacharya S.. Clin Exp Obstet Gynecol. 2001;28(1):47-52. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/11332589>.
7. Suen SS, Lao TT, Chan OK, Kou TK, Chan SC, Kim JH et al. Maternal understanding of commercial cord blood storage for their offspring. The Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, Hong Kong: Acta Obstet Gynecol Scand. 2011. Sep;90(9):1005-9. Available from: <http://www.ncbi.nlm.nih.gov/pubmed21623741>.
8. Fraser D.M, Cooper M.A. Myles Text Book For Midwives.15th Ed. London: Churchill Livingstone Elsevier Publishers; 2009. Pp. 151.
9. Walker F, Roethke SK, Martin G. An overview of the rationale, process, and nursing implications of peripheral blood stem cell transplantation. 1994. Apr;17(2):141-8. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/8019998>.
10. Katz G, Mills A, Garcia J, Hooper K, McGuckin C, Platz A et al. Banking cord blood stem cells: attitude and knowledge of pregnant women in five European countries. Transfusion 2011. Mar;51(3):578-86. Available from; <http://www.ncbi.nlm.nih.gov/pubmed/21126259/>.
11. Shin S, Yoon JH, Lee HR, Kim BJ, Roh EY. Perspectives of potential donors on cord blood and cord blood cryopreservation: a survey of highly educated, pregnant Korean women receiving active prenatal care. Seoul National University Boramae Hospital. Transfusion. 2011. Feb;51(2):277-83.. Available at; <http://www.ncbi.nlm.nih.gov/pubmed/20735763>.