

EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON LEVEL OF KNOWLEDGE REGARDING STEM CELL AMONG ANTENATAL MOTHERS

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ABSTRACT:

Background: Stem cells have attained a large focus of attention in today's regenerative medicine. In 1988, first cord blood cell transplant took place to treat a child with Fanconi's Anemia.

Objectives: To assess the level of knowledge among antenatal mothers regarding stem cell before and after structured teaching programme, and to find out the relationship between level of knowledge regarding stem cell in pretest and posttest.

Methodology: Non experimental descriptive design was carried out in primary health center of Mangadu, Chennai. 30 antenatal mothers were selected by non-probability purposive sampling technique. Data was collected by using tools such as A) Demographic variables. B) Structured questionnaire related to stem cells and cord blood banking (20 questions).

Interventions: Video assisted teaching programme on stem cells was given for the duration of 30minutes in their local language. Posttest was conducted after one week of pretest. The collected data was analyzed using descriptive and inferential statistics.

Results: In pretest the none of the mothers had adequate knowledge and in posttest 50% had adequate knowledge and mean value of knowledge in pretest was 2.26 where as in posttest it was improved to 15.4.

Conclusion: Stem cells offers a bright future for various ailments, common man should be educated about the numerous possibilities that stem cells unfold. Stem cell and that can be the best gift they can offer to their children.

Keywords: Stem cells, antenatal mothers, knowledge, structured teaching programme.

INTRODUCTION:

Stem cell that has attained a large focus of attention in today's regeneration into one (or) more specialized cell types.¹

Over 1 million patients worldwide have been treated with adult stem cell and experienced improved health, based on data gathered December 2012.²In 1988, first cord blood cell transplant took place to treat a child with Fanconi's Anemia. Approximately, 6000 individuals Worldwide have received medical treatment

consisting of the infusion of human umbilical cord blood hematopoietic stem cells for the treatment of more than 70 life-threatening malignant and nonmalignant disease.³

In India, according to highly expensive and majority of population is not able to afford for such therapy. Only 40% of the population was aware of stem cells bank. In India, very few stem cells banks are present.⁴

In Tamilnadu, the peoples have lack of awareness on the benefits of stem cells leaves about 90% of cord blood ending up as a medical waste. There is a 60 to 80% of success rate in stem cell transplant treatment for hematological illnesses.⁵

Today more than 50,000 transplants are carried out annually worldwide & they are increasing each year. Stem cell transplantation also remains the last hope for patient with advised are refractive disease.⁶ More recently cord blood has also been used as a stem cell source for patients without a donor and more than 2000 cord blood hemolytic stem cell transplant are performed annually.⁷

In 2013, studies of a autologous bone marrow stem cell on ventricular function were found to contain hundreds of discrepancies.⁸

Overall there were many more people published as having receiving stem cell in trials, than the number of stem cell in trials, proceed in the hospital, laboratories during that time four university investigation closed in 2012 without reporting was reported in July 2013.⁹

In 2012, colonial stem cell were isolated from adult mouse and human ovaries and demonstrated to be capable of forming mature oocyte. These cells have potential to treat infertility.¹⁰

In September 2014, the Sanford stem cell clinical center at the University of California, San Diego (UCSD) health system announced the launch of a ground breaking clinical trial to assess the safety of neural stem cell-based therapy in patients with chronic spinal cord injury.¹¹

As of (2010 latest ear the which data are available), more than 70,000 blood cancer patients are successful stem cell transplant.¹²

In 1968, Robert A. Good, MD. PhD at the University of Minnesota performed the first successful bone marrow transplant on a child suffering from an immune deficiency.¹³

In 2013, researchers at the Spanish national cancer research Centre in Madrid successfully reprogrammed adult cells in mice, creating stem cells that can grow into any tissue in the body.¹⁴

There are near 3,500 ongoing or completed clinical trials in patients using adult stem cell, as sited in the national institutes of health/FDA approved database.¹⁵

Hence the researchers are interested to study the level of knowledge on stem cells and cord blood banking among antenatal mothers.

MATERIAL AND METHODS:

A non-experimental descriptive study was conducted among antenatal mothers at primary health center, Mangadu in Chennai, in Tamil Nadu. The 30 antenatal mothers who came for antenatal checkup on the day of data collection at primary health center Mangadu were selected as a sample by using non probability purposive sampling technique.

The inclusion criteria for sample selection which includes antenatal mothers who are attending antenatal check up on the day of data collection and who are willing to participate in this study.

The questionnaire for present research study comprises of two sections.

SECTION I;

Demographic information which includes age, religion, education, qualification, occupation, income, previous knowledge about stem cell was collected through questionnaire method.

SECTION II;

It is a short questionnaire for determining if an antenatal mother has a knowledge regarding stem cell. It consists of 20 questionnaire using three point scales with response of adequate (16-20), moderate (11-15), and inadequate (0-10).

INTERVENTION:

A Short introduction regarding was given to the study participate and its purpose and informed consent was obtained from them. Pretest was done by giving questionnaire to the participants and following that video assisted teaching on stem cell and cord blood banking was given to the participants the 30 minutes in their local language. Post test was conducted after one week following the pretest.

DATA ANALYSIS:

Data was analyses by using descriptive and inferential statistics on the basis of the objectives and hypothesis of the study.

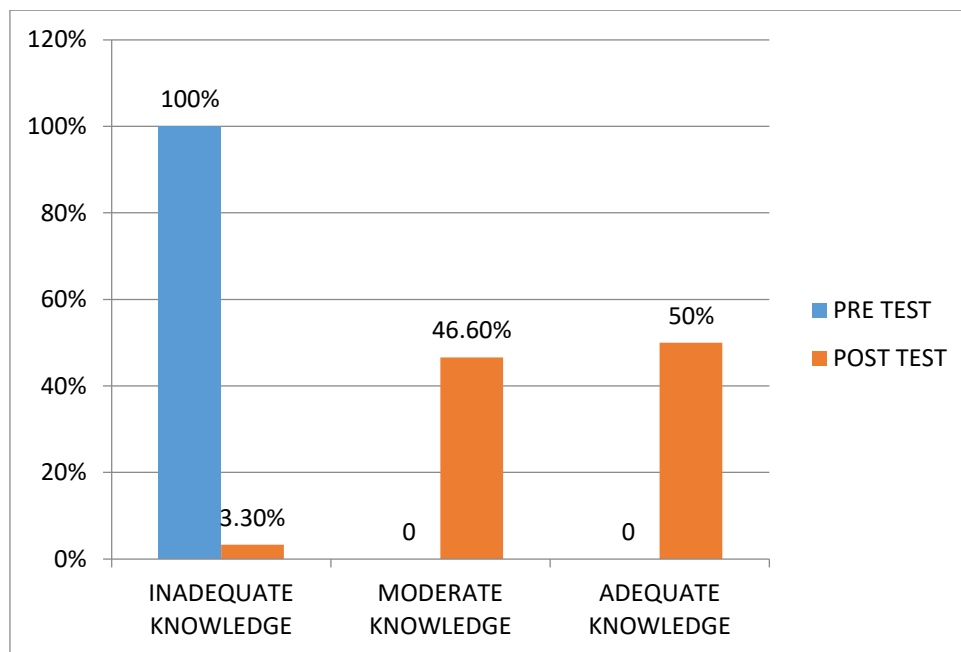
RESULTS:**TABLE-I:**

S.NO	DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE
1.	AGE a) 20-25 b) 26-30 c) 31-35	22 8 -	73.3% 26.6% -
2.	RELIGION a) Hindu b) Christian c) Muslim	18 4 8	60% 13.3% 26.6%
3.	EDUCATION QUALIFICATION a) Illiterate b) Primary education c) Graduate	3 17 10	10% 56.6% 3.3%
4.	OCCUPATION a) House wife b) Sedentary worker c) Heavy worker	26 3 1	86.6% 10% 3.3%
5.	INCOME a) Below 10,000 b) 10,000-20,000 c) Above 20,000	21 9 0	70% 30% -
6.	DO YOU KNOW ABOUT THE STEM CELL a) Yes b) No	3 27	10% 90%

TABLE-2:

Assessment of pre and post-test knowledge of stem cell.

LEVEL OF KNOWLEDGE	PRE TEST		POST TEST	
	F	%	F	%
INADEQUATE	30%	100%	1%	3.3%
MODERATE	0	0	14%	46.6%
ADEQUATE	0	0	15%	50%

**TABLE-3:**

Effectiveness of STP on knowledge regarding stem cell on antenatal mothers.

S.NO	GROUP	MEAN	STANDARD DEVIATION	“t” VALUE
1.	Pre-test	2.26	1.79	6.896
2.	Post-test	15.4	8.82	9.564

Association was found between level of knowledge on stem cells and educational qualification.

DISCUSSION

The study results revealed that after the STP, 3.3% of mothers only had inadequate knowledge and 46.6% of them are having moderate knowledge and 50% of mother gained adequate knowledge regarding stem cells.

This results was supported by the similar study was conducted by V.Fernandez,et,al in 2003 on knowledge and attitude of pregnant women with regard to collection, testing and banking of cord blood stem cells. Among 443 women 68% more than half of the women (307/438) reported poor knowledge about cord blood banking. Many of the respondents (299/441 or 68%) thought that physicians should talk to pregnant women about the collection of cord blood, and they wanted to receive information about this topic from health care professionals (290/441 or 66%) or prenatal classes would elect to store cord blood in a

public bank, many citing altruism as a reason for this choice. Most of the women in the study supported the donation of cord blood to public cord blood banks for potential transplantation and research.¹⁶

Another study Mayan Kumar saran et.al findings also which was conducted by the supported this present study findings. In similar cross section survey on knowledge and awareness of stem cells among expected mothers and parents of elementary school children in which a close ended questionnaire Performa was given to a sample of 1009 subjects who are parents of elementary school children and expected mothers from Bareilly and Delhi cities after one week, the filled questionnaire Performa was collected back from the school children and expected mothers. The results were analyzed using chi-square test. Out of a sample of 1009 subjects, 809 were from Bareilly (401 expectant mothers & 408 parents of elementary school children) & remaining 200 from Delhi (104 were expected mothers and 96 parents of elementary school children). The awareness about stem cells was 25% from Delhi and 18% from Bareilly and this difference was statistically significant.¹⁷

CONCLUSION

Stem cells offer a bright future for various ailments, common man should be educated about the numerous possibilities that stem cells unfold. They can be motivated to store their children stem cell and that can be the best gift they can offer to their children.

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REFERENCES;

1. Gronthos S, Brahim J, Li W, Fisher LW, Cherman N, Boyde A, Den Besten O, Robey PG, and Shi S, Stem cell properties of human Dental pulp stem cells, *J.Dent Res.* 2002; 81:531-535
2. Gratwohi, A et, al. one million hemopoietic stem cell transplant; a retrospective observational study, *lancet hematology* 2, e 91-e 100, march 2015, doi: 10.1016/152352.
3. Perlow JH. Patient's knowledge of umbilical cord blood banking. *J.Reprod med* 2006; 51:642-648
4. Chandy M. Stem cell transplantation in India. *Bone marrow transplant* 2008; 42 suppl 1:S81-4.
5. Walker T, Steckler D, Spellman S, Haven D, Welte K, et al. (2012) Awareness and acceptance of public cord blood banking among practicing obstetricians in the US. *Transfusion* 52:787-793. doi: 10.1111/j.1537-2995.2011.03383.X. pmid: 21981791.
6. Gupta as et al. role of dental adult stem cells in regenerative medicine, *journal of orofacial research* 2013; 3:15-20
7. G.Katz, A.Mills.J. Garda, K. Hooper, C.MCGUNDUM, A, Platz et. Al. banking cord blood stem cells, attitude and knowledge of pregnant women in five European countries
8. Francies, Darrel P (Oct 2013). Autologous bone marrow derived stem cell therapy in heart disease. Discrepancies and contraction" in *J. Cardiol.Elsevier.* 168:3381-403
9. Berndt, Christina "A minefield of contraction" *suddeutschezeitung* retrieved 6 July 2013.
10. White, YAR; Woods DC; Takai Y; Ishihara0; Seki H; Till JL (2012). "Oocyte formation by motivation action germ cells purified from ovaries of reproductive-age women" doi: 10.1038/nm.2668.
11. University of California, San Diego health science. With three first in human trials, therapeutic stem cell science takes a bold step. *Science, daily.* Oct 20, 2014.

12. Leukemia and lymphoma society, facts 2014.apr, 2014.
13. Science progress. Timeline; a brief history of stem cell research. Jan, 2009.
14. Cyrano ski D. Stem cell reprogrammed using chemicals alone, nature.2013 July-18.
15. G.Katz, A.Mills, J.Garcia et al, "Banking cord blood stem cell, attitude and knowledge of pregnant women in five European countries, "transfusion,vol 51,no.3, pp: 578-586,2011.
16. Fernandez, C.V.Gordon,K.Vanden hof,M.Taweels and baylis,f,"knowledge and attitude of pregnant women with regard to collection testing and banking of cord blood stem cell,"(MAJ 168,2003,PP:695-698.
17. Walker, T.Steckler, Spellman, S.Haven, Welte, K.et "Awareness and acceptance of public cord blood banking among practicing obstetricians in the United States", Transfusion 52, 2012, PP: 787-793.

