# A DESCRIPTIVE STUDY TO ASSESS THE KNOWLEDGE OF STAFF NURSES REGARDING UMBILICAL CORD STEM CELL COLLECTION AT SGRD HOSPITAL, SRI AMRITSAR

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**Abstract**

Stem cells ability to differentiate into different cell types is thought to play a major role in revolutionizing current human medicine. Stem cells unique differentiating features can help in improving current treatment of various diseases and providing functional tissues to repair or even replace diseased tissues. Umbilical cord blood can be viewed as the most promising source of stem cells for research and clinical applications. It is abundant supply, immunological, immaturity and high plasticity made it superior to other sources of stem cells. Clinical trials are still at its early stages but results obtained so far demonstrated high potential and hope toward developing effective therapies for neural disorders and injuries. The major findings of the study were based on 50 samples of staff nurses.The mean score was highest 13.10 and S D was.472 inadequate knowledge. Hence is it concluded that most of staff nurses had moderately adequate knowledge (44%), 14 had adequate knowledge and 14 had inadequate knowledge regarding stem cell collection. Association of knowledge score with qualification, income, experience and place of living is non significance at $p>0.05$. However, association was found to be statistically significant at $p<0.05$.

**Key Words**: PBSC, MCE, HSC, ICMR, STEM CELLS

**About Author**:

The Author Mrs Karuna Sharma is working as Associate professor in Guru Ramdas College of Nursing, Vallah, Amritsar. She has eleven years teaching and five years research experience. She has presented papers in various national and International conferences.

**Introduction**

Umbilical cord Stem cells are nature's master cells, capable of generating everyone of the many different cells that make up the body. They have the ability to self renew which means that they are theoretically immortal and can continue to divide forever if provided with enough nutrients. Because they are so plastic, they hold enormous promise as the basic for new treatments and even cures for disorders ranging from the Parkinson's and heart disease to diabetes and spinal cord injury.

Umbilical cord stem cells have remarkable potential to develop into many different cell type in the body during early life and growth. In addition, in many tissues they serve as a sort of internal repair system, dividing essentially without limit to replenish, such as a muscle cell, a red blood cell or a brain cell.

The first successful stem cell transplantation took place in 1988, when French researcher took umbilical cord blood from a newborn and gave it to a 5 year old sibling who had Fanconi's anaemia that causes skeletal defects. Stem cells can be collected from a peripheral blood (a PBSC collection) and research on stem cells continue to advance knowledge about how an organism develops from a single cell and how healthy cells replace damaged cells in adult organisms. Stem cell research is one of the most fascinating area of contemporary biology, but as with many expanding fields of scientific inquiry research on stem cells raises scientific questions as rapidly as it generate new discoveries.

After a baby is born and umbilical cord is cut, some blood remains in the blood vessels of the placenta and the portion of umbilical cord remains attached to it. This is refferd to as cord blood. This particular blood contains numerous hematopoietic stem cells, which differentiates and transforms into any organ.5 (Armson A)

The cord blood is collected from the umbilical cord within 10 minutes after delivery. There are several methods for collecting cord blood. The most commonly used clinical practice is the "closed technique" which are similar to standard blood collection technique. The cord blood and cord tissues are then transported to laboratory for testing, processing and harvesting. The extracted stem cells are preserved cryogenically at -196 degree centigrade and can be re-used to treat future ailments. Collected blood is also preserved in liquid Nitrogen and stored at around -180 degree centigrade in a cord blood bank for future transplantation.

Umbilical cord blood stem cells are collected at the moment the umbilical cord between the mother and child is cut. The collection is easy, over in a few minutes and completely harmless to both mother and child. It does not affect natural sequences of a birth at all and in contrast to the collection of adult stem cells, no invasive procedure is needed. The umbilical cord is covered by an amniotic epithelium which protect a gelatinous and elastic matrix made of muco-polysaccharides(mostly hyaluronic acid and chondroitin sulphate) called 'Wharton's Jelly' named after Dr. Thomas Wharton who first described it in 1656. The amnion and Wharton's Jelly protect three blood vessels that are crucial for embryonic and foetal devel

**Materials and Methods**

A structured (quantitative) research approach was used to assess the knowledge of staff nurses regarding stem cell collection, at SGRD Charitable Hospital, Vallah. The research design is the overall plan structure and strategy of investigations of answering the research questions. It is blueprint for collecting and analysis of the data including specification for enhancing the internal and external validity of the study. (Polit and Hungler,1995)

A descriptive study was used to assess the knowledge of staff nurses regarding umbilical cord stem cell collection, at SGRD Charitable Hospital, Vallah.

This study was conducted at SGRD Charitable hospital, Vallah.The study population consist of staff nurses at SGRD Hospital, Vallah. Sampling is the process of selecting a portion of the population to represent the entire population (Polit & Hungler). Purposive sampling technique was used in present study.A total of 50 staff nurses at SGRD Hospital, Vallah were selected for study.

The tool is structured to assess the knowledge of staff nurses regarding stem cell collection.Structured knowledge questionnaire was prepared on the basis of Review of literature Expert opinion

**Organization of tool**

The final tool will consist of :-Data collection was conducted during the month of May 2013 on 50 staff nurses at S.G.R.D Hospital, Vallah.

The data collection procedure was carried out in May 2013. The formal permission was taken from the medical supertendent before the data collection Data obtained had been analysed in terms of descriptive statistics ie.calculating percentage, mean, standard deviation and inferential statistics i.e chi square.

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**Results**

**Table 1** reveals that subjects studied were distributed according to various categories age, qualification, income, experience, place of living.

**Table1: Frequency distribution of sample characteristics among staff nurses.**

| **Demographis variables** | **F%** |
|---|---|
| **Age (in years)** | |
| 25-29 | 32(64%) |
| 30-34 | 13 (26%) |
| 35-40 | 04 (8%) |
| Above 40 | 1 (2%) |
| **Qualification** | |
| M.Sc Nursing | 0 (0%) |
| Post B.Sc Nursing | 23 (46%) |
| B.Sc Nursing | 0 (0%) |
| G.N.M | 27 (54%) |
| **Income** | |
| 5000 | 25 (50%) |
| 5001-10000 | 19 (38%) |
| 10001-20000 | 4 (8%) |
| Above 20000 | 2 (4%) |
| **Experience (years)** | |
| 1-3 | 33 (66%) |
| 3-6 | 9(18%) |
| 6-9 | 4 (8%) |
| Above 10 | 4 (8%) |
| **Place of living** | |
| City | 26 (52%) |
| Village | 24 (48%) |

**Fig. 1** Reveals that 44% had moderately adequate knowledge and 28% of the respondent had adequate knowledge and 28% of staff nurses had inadequate knowledge regarding collection of umbilical cord stem cells

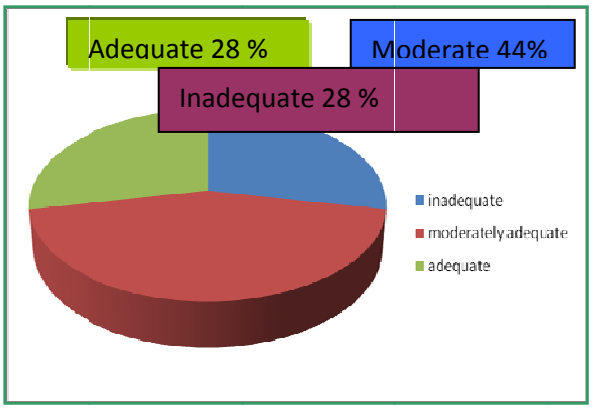


**Fig 1. Knowledge score of Staff Nurses**

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**Discussion**

The findings of the present study have been discussed in accordance with the objective of the study and previous reviewed literature. Review of literature enlighten that there are vast studies conducted on knowledge regarding stem cell collection.

The findings of the study have been discussed in accordance with objectives of the study. In the present study we have been taken 50 staff nurses. The study was taken with following objectives

1. To assess the level of knowledge of staff nurses regarding umbilical cord stem cell collection.
2. To find out the association between the level of knowledge within the selected demographic variables.

According to these objectives it was found that about 44% of staff nurses had moderate adequate knowledge, 28% of respondent had adequate knowledge and 28% had also inadequate knowledge regarding collection of stem cells. Similarly Ali. Hand Bahbahahi.(2010)-A study was conducted on knowledge regarding collection of umbilical cord stem cells in selected hospital Kasargoad, by approaching one group pre-test, post test design. The sample consists of 60 staff nurses selected by convenient sampling and data was collected by using structured knowledge questionnaire.

The present study depicts the association of knowledge score with age. It was found that the staff nurses with age group 25-29years (50%) more knowledge than other age groups. Majority of participants 33(66%) having experience 1-3 years and 9(18%) having 3-6 years while 4(8%) having 6-9 and 4(8%) having above 10 years experience.

**Conclusion**

The descriptive study was conducted to assess the knowledge of staff nurses regarding stem cell collection at SGRD Hospital, Vallah, Sri Amritsar. The study was conducted on 50 staff nurses at SGRD Hospital Sri Amritsar.

Maximum number of subject 32(64%) belonged to age group of 25-29 years. Majority of participants 33(66%) having experience 1-3 years. Maximum number of subjects 26 (52%) living in city while 24 (48%) in village.

Hence is it concluded that most of staff nurses had moderately adequate knowledge (44%), 14 had adequate knowledge and 14 had inadequate knowledge regarding stem cell collection.

In this study the knowledge score in association with qualification, chi square value has been calculated it is non-significant at $p>0.05$. It indicates that there is no association of knowledge with the education.

It reveals the association between knowledge score with income, chi square value has been calculated it is non-significant at $p>0.05$. It indicates that there is no association of knowledge with income.

This study depicts that association between knowledge score with experience, chi square value has been calculated it is non-significant at $p>0.05$.It indicates that there is no association of knowledge with the type of qualification.

Study finding reveals that association between knowledge score with place of living, chi square value has been calculated it is non-significant at $p>0.05$.

Hence it is concluded that none of these socio-demographic variable is associated with the knowledge scores of the staff nurses except the age of staff nurses.

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