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## Is the Role of Gynecologists Crucial In Motivating Patients for Stem Cell Banking Facilities In Health Marketing With Reference to Delhi-NCR

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### ABSTRACT

**Purpose** - The purpose of this paper is to study on the crucial role of gynecologists as motivator in motivating patients for stem cell banking facilities and helps parents to make right decision for their child overall development.

**Design** - It is qualitative study on gynecologists in Delhi-NCR regions of India, involving in-depth, semi-structured interviews with gynecologists. In this study the data was collected from doctors who were involved in collection of stem cell banking through umbilical cord while delivering the baby.

**Findings** - The result demonstrated that the gynecologists play very crucial role in motivating patients for stem cell banking facilities. All the finding indicates that there is huge scope in creating awareness for stem cell banking towards patients but for this lot of effort has to be done in this regard as majority of gynecologists are reluctant in marketing stem cell banking facilities.

**Originality/ value**- This study highlights the significance of gynecologist's views about the stem cell banking, their role in motivating patients for adopt the stem cell banking facilities. Stem cell banking companies promises to preserve and store stem cells to be used for regenerative therapy. Stem cells are useful in some treating diseases (example: thalassemia, Leukaemia, tumors, etc.) and for other diseases it is only used in clinical trials.

**Key words**- Stem cell, Stem cell banking, Gynecologist, Motivation, Patients, Health marketing.

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## INTRODUCTION

Health marketing is a new concept in healthcare sector; it involves creating, communicating, and delivering messages for the public on prevention, health promotion and health protection service like bio insurance in the form of stem cell banking. Health marketing is increasingly been used by doctors to offering services like dental surgery, plastic surgery etc. while companies makes use of the health marketing by involving the doctors to give positive response for services like stem cell banking service, health insurance etc. Doctor motivates their patients to make positive changes for a better future. For the patients, change is never easy but with the right skills of doctors it can be taken care. Doctors play a role of motivator in a patient's life. Motivating patients for a new technology like stem cell banking can be challenging as being a doctor. Still, doctors will help the patient to take the right decision for their overall development. Among doctors gynecologist act as a key life changer in pregnant woman's life. During pregnancy period there is a strong need of mental, psychological and emotional health care. This period need personalized and compassionate care. Gynecologist takes time to understand the patient needs so they can provide quality care and guidance. The gynecologist is recognized as a patient's primary source to get knowledge about stem cell management. They also help expecting mothers and her family understands about stem cell banking and how is benefit to the child in the future. One of the most effective methods for safeguarding child's health is to store their stem cells. Stem cell stored in the form of umbilical cord blood of a newborn. There is no harm to the mother or newborn while collecting cord blood.

Umbilical cord blood is a rich and abundant source of hematopoietic stem cells. The remaining volume of fetal blood within the placenta and umbilical cord following the birth of a baby has become recognized as an important resource for these lifesaving cells. Umbilical cord blood hematopoietic stem cells, which have the capacity to differentiate into the various cell types of the blood and immune systems have demonstrated superiority to other stem cell sources for the treatment of serious life threatening diseases.

Parents are often misinformed and confused about the risks and benefits of umbilical cord blood banking. Parents may be motivated by the gynecologists to preserve their baby's umbilical cord blood to a stem cell bank for the potential future benefit of their child or immediate family.

Gynecologist is the one who guides pregnant women and should be well informed about the practical implications of umbilical cord blood collection, storage, benefits and limitations of stem cell banking. The gynecologist should have a primary role in efforts to increase awareness of umbilical cord blood donation and be involved in initiatives to expand current stem cell banking activities. More involvement of gynecologists would allow patients to get more information about stem cell banking hence the purpose of the paper is to understand the role of gynecologists in motivating patients for stem cell banking facilities.

## OBJECTIVE

- To find out the gynecologists knowledge about stem cell banking facilities in Delhi and NCR.
- To find out the factors that affects the motivation level of patients.

**HISTORY OF STEM CELL**

Looking at chronological history for the origin of modern stem cell transplantation, it begins around 1940s-1950s. In the 1960s the first human marrow transplant was initiated and 1970s witness the breakthrough in immunology. In 1980s the stem cell used in a clinical bone marrow transplants while in 1990s it was used for making drugs for the purpose of regenerative medicine and therapy. After 1990s there were improved outcomes of stem cell application and thus the rise of cell therapy. (MD J. B., 2009).

**Stem cell**

Stem cell is the master cells of the human body. Stem cell can rise to indefinitely different cell of similar types like blood cells, heart cell and other organ cells. Stem cell banking is the method to store and preserve stem cell that helps to cure several deadly diseases.

A study conducted in 2003 describes that less than 30 diseases were able to get cured or supported with stem cell, but today over 85 diseases can be cured and supported. There are many sources of stem cell like bone marrow, embryonic cells, cord blood etc. Umbilical cord blood is a high rich source of stem cell. (Perillo A, 2004)

Stem cell transplantation facilities are increasing in India but for optimal utilization of these facilities, it is important to create concept awareness. At present, lack of awareness about the huge potential of stem cell has to be gained from the storage of cord blood stem cells but highly technical nature of the process is the key reason for a small customer base in the country (Ujala Joshi1, August, 2007). In 2009 the study has given the current state of our knowledge about stem cells and their actions, patients should continue to be counseled against medical travel for unproven stem cell-based therapies at this time (Olle Lindvall, 2009).

**Stem cell banking**

Now people are familiar with stem cell banking. Before 20th century common man never heard about stem cell but today from last two decades, people are not just aware but also know the significance of stem cell banking.

Studies conducted in 2010 showed the stem cell banking were more beneficial for the individual but also for his entire family. According to Scaradavou, Stem cells are not only kept for the future, its useful for existing patients. If any family member already has a disease, the family takes a sensible decision and save cord blood for the patients treatment which has proven to be very effective in case of sibling (Besser, 2010). Almost non-existent a few years ago in the country, stem cell banking is now a flourishing business with more and more people wishing to store their baby's cord blood as a form of bio-insurance, even though it comes at a heavy price. Cord blood storage is fast gaining momentum as a less traumatic alternative to treat neurological illnesses, and as a guarantee for the family against a host of diseases (Amit Kumar, 2011). A study conducted in 2011 show the stem cell role in research and commercialization. During the past several years there has been a vivid research in the field of stem cell (Radhika P Ramachandran, 2011). The goal of research using stem cells is not always to produce stem cell therapy. Basic research over the last four years has shown that stem cells can be used to understand diseases, which may help scientists create new drug therapies (NHS, 2011).

In 2013, a study was undertaken to understand the role of obstetricians and gynecologists in stem cell banking. Gynecologists and obstetricians were found to be centers for emerging umbilical cord blood banking. Umbilical cord and other biological material is high source of stem cell and have various medical applications. (Mary M. Herlihy, 2013) In 2015 the researcher focused on basic sources of stem cell that helps in stem cell therapy stem cells from cord blood is much easier to get because these cells are readily obtained from the cord and the placenta at the time of delivery. The stem cells obtained from umbilical cord blood are less likely to be rejected in transplants than bone marrow stem cells (Hend S. Mohammed, 2015). Understanding of the stem cell is important for efforts that are designed to alleviate the risk it poses to both individual patients and the broader research field (Jee Leng LYE, 2015)

People should be made aware of such applications and the government should help in providing such benefits by subsidizing them (Alaie, 2015). According to the survey on Italian physicians that 87% of doctors have knowledge about the stem cell banking, and 43% mainly are gynecologists and pediatricians. (Paola Frati, 2014) Another study conducted in 2016 focus on the demand of patient towards stem cell banking services. (Brian Salter, 2016). In a recent investigation, the knowledge on stem cells and its role in treatment of different diseases developed awareness among people and moved them to adopting stem cell collection and preservation (AB, Jan 2017). Increasing use of cord blood for health problems has arise the need for the collection and storage of cord blood throughout the world, as it holds promise for the treatment of many devastating diseases of humankind. (Devi, June, 2017)

Private and public cord blood banks both give benefit to the families by offering a precious and less painful alternative for stem cell sourcing. Families should consider reputable and established private blood banks if they have a family member at a high risk of developing diseases treatable by cord blood stem cell within the future and other families should consider donating cord blood to a public bank if they would like to help save the lives of others. (Landis, 2017)

After extensive literature it is observed that stem cell banking was almost non-existent a few years ago but due to high medical and biological value of umbilical cord blood, thus banking of this biological material is supported by the families and health professional. Stem cells have a significance role in the improvement of health sector.

## **METHODS**

The semi- structured interviews are use as a data collection tool. The participant comprised 15 gynecologists out of which 3 of them could not be approached because of their hospital policies and other reasons. All of the participants were females and senior consultant aging between 40 years to 60 years. Interview was focused to understand the role of gynecologists in motivating their patients for stem cell banking facilities and discussion about the gynecologist and obstetricians view on government roles. All interviews were conducted in person and digitally recorded with the participant's agreement. Each interview lasted to 20-30 min in length conducted at the hospitals and clinics of gynecologists. Thirteen different questions were asked

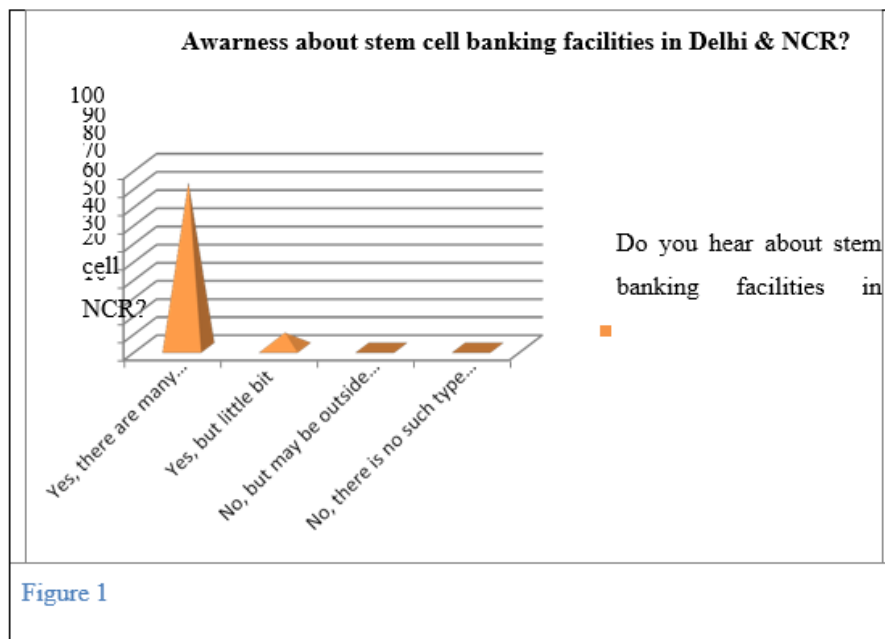
in interview in which the frequency and percentage were for each of the response calculated and qualitative data analysis and interpretation were done.

**RESULT**

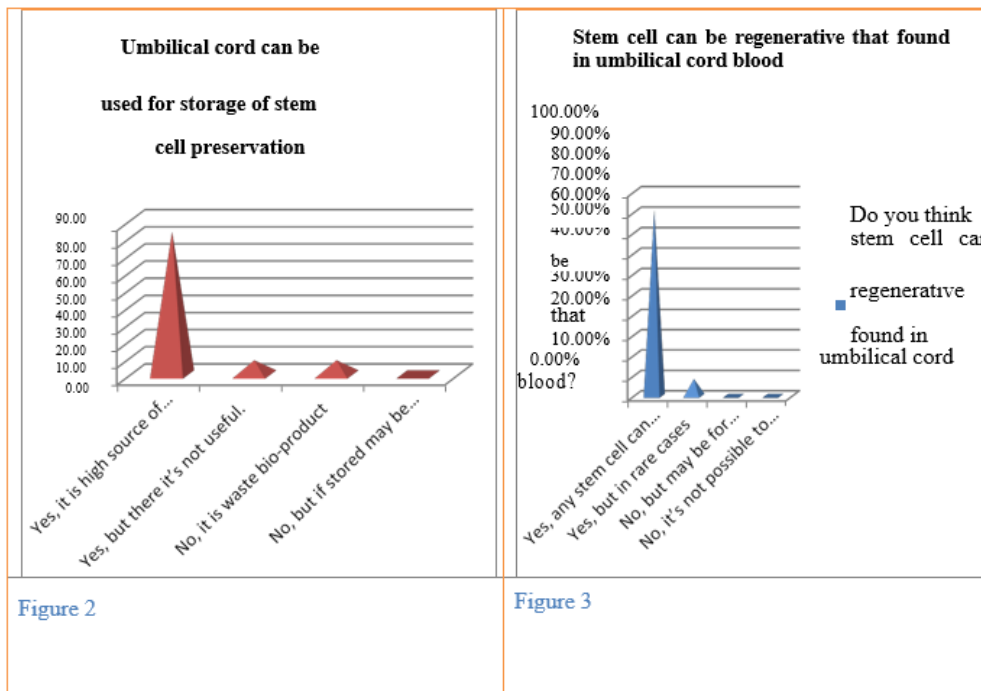
Data was received by 12 gynecologists and there were total 15 gynecologists. Response rate was 80%.

**Knowledge of stem cell banking**

According to the survey 91.11% of gynecologists and obstetricians have knowledge about stem cell banking and only 8.33% of gynecologists and obstetrician knows are aware about stem cell banking facilities available in Delhi-NCR region (Fig-1).



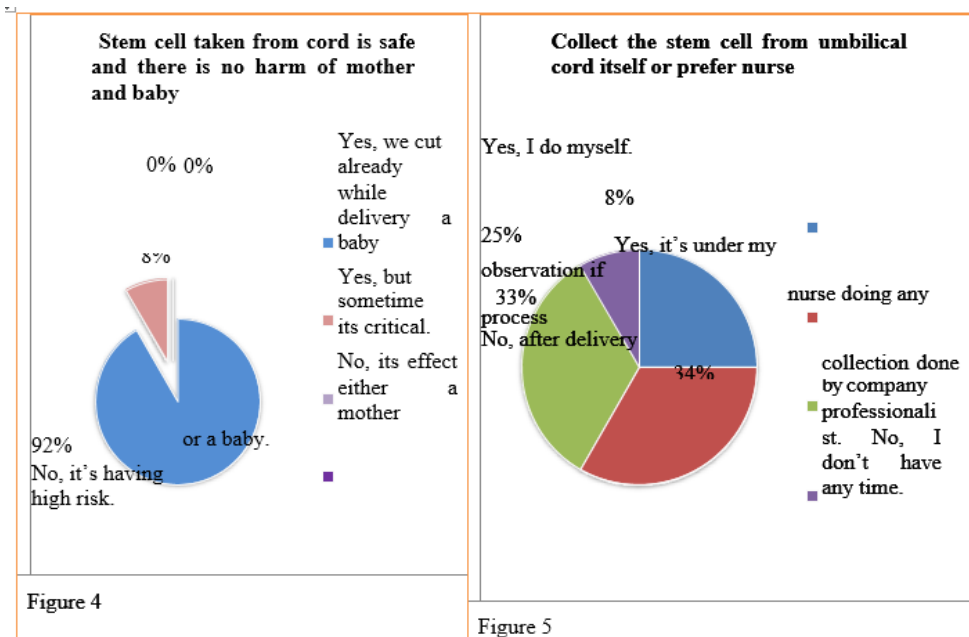
The gynecologists and obstetricians have specific knowledge about stem cell preservation. 83.33% of gynecologists and obstetrician were found to agree that umbilical cord is used for storage of stem cell preservation because the umbilical cord and umbilical cord blood is a high source of stem cell. The stem cells found in umbilical cords are used for treating various diseases like thalassemia, leukaemia, tumors, etc. 8.33% of gynecologists and obstetrician who were well aware about storage of stem cell supported of umbilical cord for preservation were the view that stem cell available in umbilical cord is very less in quantity and not enough for treatment purpose. While 8.33% of gynecologists and obstetrician were again storage of stem cell present in the umbilical cord, as they founded to be waste bio- product(Fig-2).



Among doctors who have specific knowledge about stem cells, 91.1% declared to be “aware of the stem cell from umbilical cord can be regenerative” while among those doctors who did not have specific knowledge about stem cells only 8.33% were founded to be aware of the stem cell from umbilical cord can be regenerative.(Fig-3). Thus, this analysis indicate that the majority of gynecologist and obstetricians have knowledge about stem cell banking and also are well aware specific knowledge about stem cell banking facilities which is in accordance to the study conducted in 2014 in Italy where gynecologist and obstetricians were identified to have detail knowledge about stem cell banking and research. (Paola Frati, 2014)

**Stem cell from umbilical cord blood**

The stem cell taken from cord is a safe procedure and there is no harm to mother and baby. 91.1% gynecologists said that the umbilical cord which is attached to the placenta is already cut for separated the baby from mother irrespective of its storage. 8.33% of gynecologists said it’s difficult to cut umbilical cord in a critical condition such as an umbilical cord being wrapped around a baby neck in utero is called a nuchal cord and usually is harmless. While no doctors were the view that cutting of umbilical cord threatens life of mother or baby. Umbilical cord blood is blood that remains in the placenta and in the attached umbilical cord afterchildbirth. Cord blood is collected because it contains stem cells, which can be used to treat hematopoietic and genetic disorders. Umbilical cord blood contains inexhaustible, non- controversial sources of stem cells for therapy. (Fig-4)



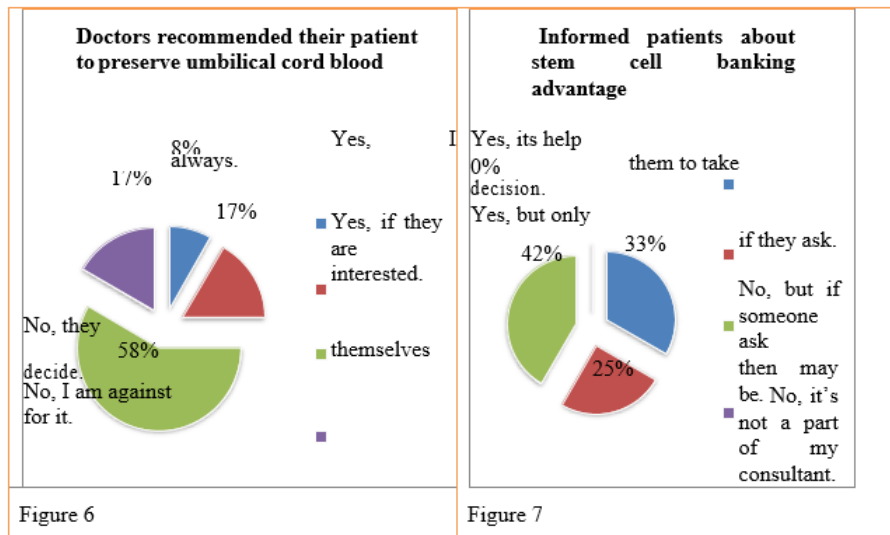
The umbilical cord is collected in a kit that is provide by the company at the time of registration for the stem cell banking services to the patients while delivering in order to collect stem cell of baby the parents can carry kit with themselves. 25% of gynecologists collect the umbilical cord itself because the patient’s does not take any risk at a time of collection of umbilical cord.

33.33% of gynecologists prefer their nurses for collected umbilical cord under their observation and remaining 33.33% prefer the collection staff provided by the company or hospital to collect umbilical cord in the presence of doctors and nurse. 8.3% does not have an enough time for doing this process. After the cord blood collected, the sample sends to the lab of the stem cell banking for preservation. (Fig-5) Thus, this analysis indicates that stem cell taken from umbilical cord is safe and there is no harm of baby and mother exception at some critical case. Similarly, Joseph Ignatius Azzopardi is concluded that stem cells from the umbilical cord have various advantages as compared to bone marrow stem cells. (Joseph Ignatius Azzopardi, 2018)

**Gynecologist role in stem cell banking**

Only 8.33% gynecologists and obstetrician recommended their patients to stored umbilical cord blood at a time of delivery of baby; however 58.33% does not give any suggestion to the patients, the patients itself decided about stem cell banking. Another 16.66% of gynecologist recommend cord blood storage if a patient and their families are interested in this service.

16.66% of gynecologists and obstetricians are against for recommended the stem cell banking facilities for their patients. (Fig-6)

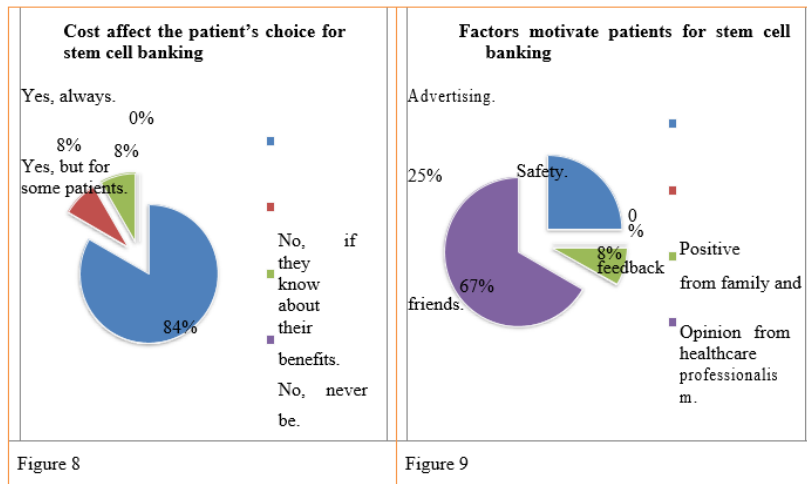


Most of the gynecologists who have specific knowledge about stem cell banking give information to their patients when the patients query about the of stem cell banking are 25% only. 3.33% of gynecologist gives details information to the patients on stem cell banking facilities because they help patients to take decision for the stem cell banking service. Some gynecologists give pamphlets and brochure of each company to the patients.41.66% of gynecologists give generic information about stem cell banking only when the patients persuade their doctors (Fig-7). Thus, this analysis indicates that gynecologists are not interested in educating their patients for stem cell banking, they only solve patients query. Similarly, the study conduct in 2015 also identified very less number of gynecologist and obstetrician are recommended their patients for cord blood storage. (Nasadyuk C. M., 2015)

**Factors motivate patients for stem cell banking**

Stem cell banking is a costly procedure ranging from Rs30, 000-Rs 50,000 depending on the company. So the cost can affect the patient’s choice for stem cell banking. According to the survey, 83.33% gynecologists agree that the cost is a major factor that effect patients choice for stem cell banking because middle family think twice to spend this much money. 8.33% ofgynecologists think its affect some patients who cannot afford while another 8.33% think if they know benefits about stem cell preservation then the cost of stem cell banking does not matter (Fig-8). Thus, this analysis indicates that according to the gynecologist and obstetrician cost is the major issue for the preservation of umbilical cord blood and choosing a stem cell bank.Similarly according to the survey in 2015 indicate that the cost of service of umbilical cord is very high and a patient does not have trust on the banks of umbilical cord blood. (Nasadyuk C. M., 2015)

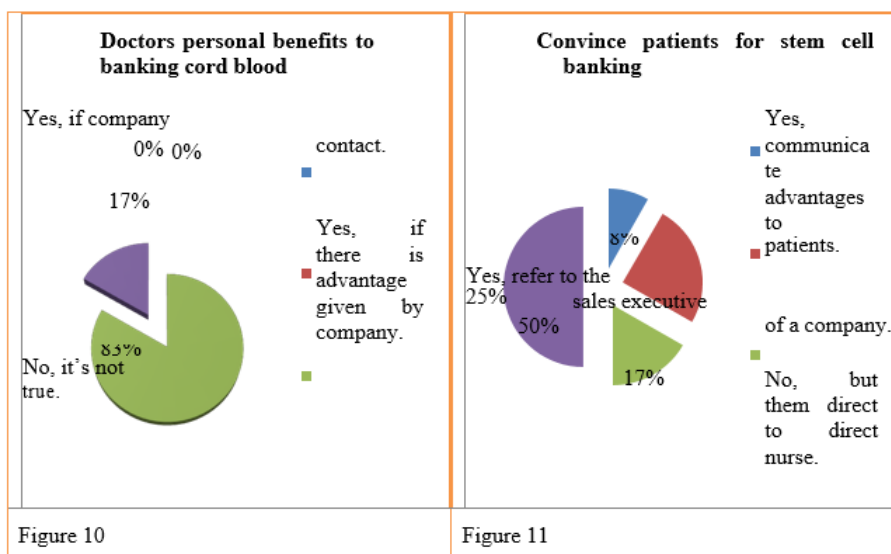




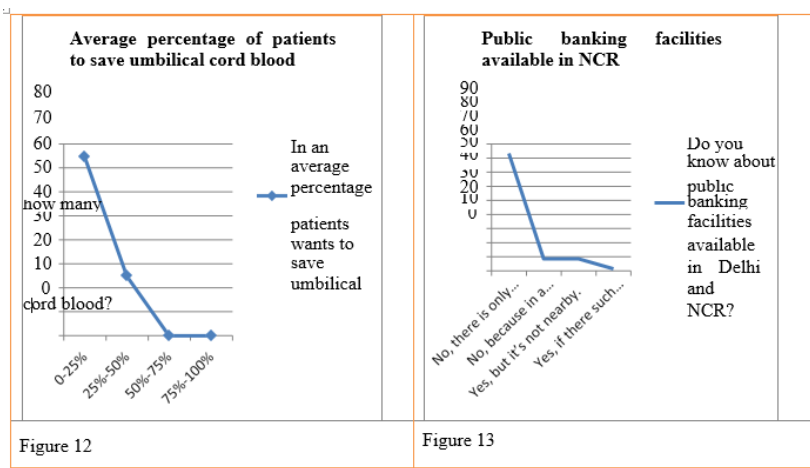
The analysis demonstrated that 66.66% of gynecologists agree that healthcare professional persons like doctors, nurse etc. opinion are more matter than opinion from relatives and closed ones to motivate patients for stem cell banking. Only 8.33% agree that family and friends positive feedbacks also help in motivating patients. 25% of gynecologists think advertising play a significance role in motivating patients for stem cell banking (Fig-9). Similarly the study conducted in 2016 interpret that health care professional persons are the main source to provide information to the public regarding stem cell banking. Television is the main source for advertising about stem cell banks. (Poomalar G. K., 2016)

**Gynecologist’s opinion about private stem cell banking companies**

This study demonstrates analysis that none of the doctors agree that the doctors get paid for banking cord blood. 83.33% of gynecologists that it’s just a myth, there is no benefits given to the doctors to recommend about stem cell banking it’s their own choice and patients requirement to give information about stem cell banking. 16.66% of gynecologists are very disappointed by this because the company makes fools to the patients. (Fig-10)



50% of gynecologists think its waste of time to convince patients for stem cell banking while 25% refers to the sales executive of the company. Only 8.33% are that talking about the advantages of stem cell banking is a best method to convince patients and 16.66% prefer nurse to convince them. (Fig-11) Thus, this interpret that there is less involvement of gynecologists to educated patients for stem cell banking. according to the gynecologists brief idea the less number of patients want to save umbilical cord blood of their child. 75% of gynecologists accepted that 0-25% in an average patients want to save umbilical cord blood. While only one third said it's more than 25% because more patients want to save umbilical cord. (Fig-12)



83.33% of gynecologists are not known about the public banking facilities they knows only about private banking facilities available in Delhi-NCR. 8.33% of gynecologists know but it's not nearby and remaining 8.33% of gynecologists suggest the public banking is only for research purpose (Fig-13). On the basis of the analysis, it conclude that there is less awareness about public banking and that's make gynecologists have a negative attitude towards stem cell banking. Similarly, in 2016 Study reveals the reason for opposition of umbilical cord stem cell that is used in future are not proven up till now but other sources of stem cell like bone marrow are available for treatment. (Chetan V Dubey, 2016)

All the finding indicates that there is huge scope in creating awareness for stem cell banking towards patients but for all lot of effort has to be done in this regard as majority of gynecologists are reluctant in this stem cell banking. Healthcare sectors want more involvement of government so that it reduces the cost of stem cell banking. Education, awareness, and knowledge will definitely change the scenario of the stem cell banking in India. Stem cell not only helps in improving health sector but it helps in other area too. Most of gynecologists and obstetricians founded that there is very poor involvement of Indian government in stem cell banking, that's the reason after so many years the stem cell research and banking still in nascent stage as compare to other developed countries like China, Japan etc.

**CONCLUSION**

It is concluded from the analysis that gynecologist are the primary source for the patients in getting information about stem cell banking. Doctors recommend stem cell banking only to parents who had a paying capacity and had a past history of diseases to the patient's family.

It is observed that mostly gynecologists communicate with patients when they asked about stem cell banking. Gynecologists and obstetricians should take it as a primary responsibility to increase awareness of umbilical cord blood banking to develop and expand the awareness of the patients about banking facilities available in NCR. The maximum number of doctors from NCR should motivate parents to opt for stem cell banking with the special note for those parents who can afford it. Though most of gynecologists and obstetrician were in favor of stem cell banking there were significant numbers of doctors also having contradictory opinion. This reluctant attitude of gynecologists and obstetrician toward stem cell banking facilities is occurring due to poor involvement by the government that results in confusing parents for taking the initiatives towards decision about stem cell banking.

### **SUGGESTION AND RECOMMENDATIONS**

Stem cell banking facilities should be available at cost which is affordable to the parents. More emphasis should be given on implementation part i.e. treatment should be made available at affordable cost. There is immense need of gynecologists and other health care professional involvement for creating awareness and knowledge about stem cell banking facility. The government involvement is necessary to developed cord blood banks. The government hospitals can have access to the cord blood banks that makes affordable to the parents irrespective of their financial background.

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