



A Study To Assess The Effectiveness Of Self-instructional module On Knowledge Regarding Importance Of Cord Blood Among Staff Nurses At Selected Hospital, Agartala.

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CHAPTER- I

INTRODUCTION

Umbilical cord blood, which is also called “placental blood”, is the blood remaining in the umbilical cord and placenta following a child birth and after the cord is cut, cord blood is usually discarded with the placenta and umbilical cord.³

Cord blood has become a very common source of stem cells to be used for transplants. The umbilical cord blood is rich & abundant source of hematopoietic (related to blood) stem cells and has very naïve immune cells (lymphocytes). So it has the potential to be used for the reconstitution of the hematopoietic process in recipients. Cord blood also contains mesenchymal stem cells, which are being developed to treat bone, tendon and ligament injuries and diseases. Permanent cures are possible for some diseases using stem cell therapies.⁴ Stem cell therapy can be used for treating various diseases such as heart ailments, diabetes, skin trauma and certain cancers like leukemia and breast cancer, and blood disorders like thalassemia major.⁵

These cryo preserved cord stem cells are thawed and transplanted into the recipient’s body as like bone marrow whenever the need arises. Because umbilical cord blood contains a rich source of hematopoietic stem cells and progenitor cells, it has been effective as an alternative allogenic donor source in a variety of pediatric genetic, hematologic, immunologic, and oncologic disorders.⁹ Stem cell research in India has achieved encouraging results. Out of 6000, cord blood transplants done worldwide till 2005 only 22 such transplants have been done in India. But this has increased to more than 1,540 placental or cord blood transplantations till now.¹⁰

In India about 25,000 cord blood units had been preserved over the last three years. With more than 80,000 births per day or 26 million births a year, India is poised to be the largest source for umbilical cord blood in the world.¹¹

Need of the study

Every year 10,000 children with thalassemia major are born in India, which constitutes 10% of the total number in the world, and one out of every 8 carriers of thalassemia worldwide lives in India. Thanks to this revolutionary development in the stem cell industry, several life threatening diseases like thalassemia, leukaemia etc., can now be treated completely with no surgery involved.¹² The facilities for stem cell transplantation in India are increasing but awareness of its optimal utilization on needs to be improved. The procedure is expensive as a lot of resources are required in the form of supportive therapy.¹³

The estimated number of patients suffering from cardiovascular diseases is as high as 58 million year in India. Osteoarthritis is affecting staggering 10 million year patients with spinal cord diseases. Diabetes affects 3 millions/ year. Cancers affects 30 million people / year. These diseases are easily treatable by stem cells. The Indian Council of Medical Research has estimated that some 50 million patients with heart disease, 5million with Parkinson's disease and 5 million with Alzheimer's disease in India are 'potential beneficiaries' of stem cell therapy.¹⁴

In order to utilize our resources optimally, it is essential to create an awareness of the utility of stem cell transplant in India, and to use innovative techniques to make the procedure more affordable. Doctors and nurses are challenged to keep their knowledge current with recent advances and the integration of stem cell therapy into traditional care. As the public becomes more informed about regenerative medicine and the use of stem cells to replace diseased cells, nurses will be expected to provide information about new treatments and to be familiar with the care of patients undergoing, various types of stem cell transplants. By providing education about the medical value of cord blood stem cells and the available banking options, cord blood awareness will empower expectant parents to make informed decisions on choices regarding family's future health.¹³

Stem cell therapy proving to be the emerging treatment for the future, cord blood banking is one of the cheapest alternatives. Stem cell transplantation facilities are increasing in India but for optimal utilisation of these facilities, it is important to create concept awareness. At present, lack of awareness about the huge potential to be gained from the storage of cord blood stem cells and highly technical nature of the process is the key reason for a small customer base in the country.¹⁶

Statement of problem

A study to assess the effectiveness of self-instructional module on knowledge regarding importance of cord blood among staff nurses at selected hospital, Agartala.

Objectives:

1. To assess the pretest knowledge regarding importance of cord blood among staff nurses at selected hospital, Agartala.
2. To find the effectiveness of self-instructional module on knowledge regarding importance of cord blood among staff nurses at selected hospital, Agartala.
3. To find out the association between the pretest level of knowledge score among staff nurses with their selected demographic variables.

Assumption

- Staff nurses may not have adequate knowledge regarding importance of cord blood.
- Administration of self-instructional module may improve the knowledge regarding importance of cord blood.
- Selected demographic variables may influence the knowledge of staff nurses regarding importance of cord blood.

Hypothesis

- H1: There is significant difference between the pretest and posttest knowledge of staff nurses regarding importance of umbilical cord blood.
- H2: There is significant association between the pretest level of knowledge of staff nurses regarding importance of umbilical cord blood with their selected demographic variables.

Operational definitions

- **Assess:** It refers the amount of knowledge score among staff nurses regarding importance of cord blood by using structured questionnaire.
- **Effectiveness:** It refers to the significant change in knowledge regarding importance of cord blood as determined by significant difference between pre test and post test knowledge.
- **Knowledge:** It refers to the range of factual information the staff nurse process regarding importance of umbilical cord blood by structured questionnaire.
- **Staff Nurses:** It refers to the registered nurses and midwives who are presently working in hospital.
- **Umbilical Cord Blood:** Umbilical cord blood are those cord blood that are found only in the umbilical cord and placenta and are collected from the umbilical cord is drawn.
- **Self Instructional Module:** It refers to a self contained instructional unit of pedagogy consisting information regarding umbilical cord blood, stem cell collection, preservation, and utilization.

CHAPTER – II

REVIEW LITERATURE

Review literature for the present study has been divided into following headings-

- I. Review of literature related to umbilical cord blood stem cell collection, preservation and utilization
- II. Review of literature related to knowledge of staff nurses on umbilical cord blood stem cell collection, preservation & utilization
- II. Review of literature related to effectiveness of Self Instructional Module on knowledge of Staff nurses regarding importance of umbilical cord blood.

I. Review of literature related to umbilical cord blood stem cell collection, preservation and utilization.

Amy E. Armstrong, Rachel Fonstad, Stephen Spellman (2017) A study was conducted in USA to assess current Knowledge and Practice of Pediatric Providers in Umbilical Cord Blood Banking. Methods: there are 26-question electronic surveys to general and subspecialty pediatric providers; we assessed baseline knowledge and conversations about UCBB. A total of 473 providers completed the survey; only 22% of physicians ever discussed UCBB with expectant parents. Finding of the study revealed that, pediatric providers rarely speak to families about UCBB, and we believe that they can be better informed to its current clinical utility.¹⁷

Amandeep Kaur, Archana Garg (2017) A study was conducted in Punjab to assess Knowledge and Attitude Regarding Stem Cells and Umbilical Cord Blood Banking among health professional in selected Hospitals, Hoshiarpur, Punjab. The aim of study was to assess Knowledge and Attitude Regarding Stem Cells and Umbilical Cord Blood Banking among health professional. The study consisted of 100 health professionals selected by non-probability convenient sampling technique. The finding of the study shows There was weak positive correlation between knowledge and attitude regarding stem cells and umbilical cord blood banking.¹⁸

Jawdat D, AlTwijri S, AlSemari H, Saade M (2017) A study was conducted in Saudi Arabia to determine Public Awareness on

Cord Blood Banking in Saudi Arabia. Aim was to estimate the level of public awareness of CB banking in Saudi Arabia. Results shows that a total of 1146 participants have completed the questionnaire. The majority were young female 19-25 years old (26%), who are college graduates (57%) with middle class socioeconomic status (82%). The subjective assessment of the overall knowledge was inadequate (66%). For the objective assessment, 12 questions were asked about CB source, collection, storage, and usage. Only half of the subjects (52%) knew that CB is a source of stem cells. More than half did not know the main use of CB. About half did not know about the method of collection nor the condition of storing.¹⁹

J Basak, D Bhattacharyya, A Chakraborty, P Gupta, A Mukhopadhyay, Jaysree et.al (2012) A study was conducted in West Bengal. The study is reporting for the first time stem cell transplantation in eastern India. From August 2000 to June 2011 (with a 3-year gap for up gradation), have been performed. A total of 22 transplants. Thirteen patients (M: F: 9:4) with indications of aplastic anemia, thalassaemia, acute myeloid leukemia and chronic myeloid leukemia underwent allogenic transplant, whereas autologous transplant was performed for nine patients (M:F:2:1) of multiple myeloma, Hodgkin's and non-Hodgkin's lymphoma and neuroblastoma. Results shows a disease-free survival of 68.18% and overall survival of 86.3% were seen at the median follow-up period of 4.6 years. Common post transplant complications were mucositis, infection, venoocclusive disease, graft versus host disease, hemorrhagic cystitis, etc.²⁶

III. Review of literature related to knowledge of staff nurses on umbilical cord blood stem cell collection, preservation & utilization

Om el Hana, Abdel, Fadeel, Manal Farouk, Moustafa, Azaa Mohammed Hafez et.al (2018) a study was conducted in Egypt to assess the effect of Guideline on Maternity Nurses Attitude about Umbilical Cord Blood Banking and Its Barriers. Aim of the study is to assess maternity nurses' attitude about umbilical cord blood banking and its barrier and improve attitude about umbilical cord blood banking through health education given to nurses by providing guideline containing information about umbilical cord blood importance, advantages, disadvantages, types of banks, and diseases treated by cord blood.. The study included 78 nurses. Results shows the main finding of the study were more than third of sample 38.5% in pretest have negative attitude about umbilical cord blood while 70.5% of sample in posttest have positive attitude³⁴

Hanan Tork (2017) A study was conducted in Saudi Arabia to assess the knowledge and attitude of health care providers in Qassim region regarding stem cell. Objective of this study to assess the knowledge and attitude of health care providers in Qassim region regarding stem cells. Self-administered tools were utilized among 250 health care providers were chosen from five major hospitals in Qassim, including doctors, nurses, and other health care providers such as pharmacists, dietaries and administrative staff. Results shows participants were female About 56% of respondents had a moderate knowledge regarding stem cells, and only 31.2 % had good knowledge. About three quarters 191 (76.4%) of the participants exhibited positive attitude towards stem cells use.³⁵

Rachna Gill, Bhupinder Kaur and P Latha (2017) A study was conducted in Punjab to assess the knowledge and attitude of health care professionals regarding placental stem cell, cord blood banking and its utilization in Guru Gobind Singh medical college & hospital, Faridkot, Punjab. The present study aims to assess the knowledge and attitude of health care professionals regarding placental stem cell, cord blood banking and its utilization. Sample was 150 health care professionals working in GGSMC&H, Faridkot (Punjab). Results shows maximum no. of health care professionals (55.3%) had inadequate knowledge and most of them (98%) had positive attitude. The study concluded that, 55.33% of health care professionals had inadequate knowledge and 98% of health care professionals had positive attitude.³⁶

Ambili Venugopal, Poonam Joshi, Dipika Deka (2016) A study was conducted in New Delhi to assess the knowledge and attitude of nurses regarding stem cells and umbilical cord blood banking in a selected tertiary care facility. Aim was to assess the knowledge and attitude of nurses regarding stem cells and umbilical cord blood banking in a selected tertiary care facility. A cross sectional survey was conducted to assess the knowledge and attitude of 56 nurses enrolled from the labour room and maternity ward of the facility. Results shows most of the nurses had good knowledge (42.86%) and neutral attitude (78.6%) with a mean knowledge and attitude score of 16.84 ± 4.59 and 53.75 ± 8.26 respectively. None of the nurses received any pre-service or in-service education regarding stem cells and UCBB; however 17 nurses assisted/witnessed UCBB and all these nurses were from labour room. All of the nurses expressed that they wanted to have more information regarding stem cells and UCBB. Majority 17 (62.5%) of the nurses had

heard about UCBB and reported other health care workers (74.28%) as their knowledge source. There was a positive correlation between knowledge and attitude scores of nurses ($r=0.532$),³⁸

III. Review of literature related to effectiveness of Self Instructional Module on Knowledge of Staff Nurses regarding importance of umbilical cord blood.

Vivitha S. Pinto, Dr. Pushpaveni N. P (2018) A study was conducted in Bangalore to evaluate the effectiveness of Self instructional module regarding collection of cord blood for stem cell therapy in terms of knowledge among staff nurses in selected hospitals at Bangalore. Pre-experimental design, with convenient sampling method was used. Information was collected from 50 staff nurses regarding collection of cord blood for stem cell therapy using the structured knowledge questionnaire. SIM was implemented and post-test was conducted after 7 days to find the effectiveness. Study findings showed that pre-test knowledge scores were found to be 43.05% and after SIM the post test knowledge scores of staff nurses was found to be 77.45% which is enhanced by 34.4%. SIM was effective in improving the knowledge of staff nurses on collection of cord blood for stem cell therapy.⁴²

Aksa Peter, Angel Maria P. T, Aniet Bijo, Ani Rose Thomas (2017) A study was conducted in Kerala to assess the knowledge among student nurses regarding umbilical cord stem cell banking in selected nursing colleges of Kerala in a view to develop self instruction module. The objectives of the study was to assess the knowledge level about umbilical cord stem cell banking among student nurses to compare the knowledge level of student nurses from selected colleges and to associate the knowledge score of cord blood banking and selected demographic variables. 100 student nurses from Nursing College in Kerala were selected. The study findings showed that, 76% of student nurses having moderate knowledge, 23% of student nurses having poor knowledge about umbilical cord stem cell banking. There was no significant association were found between the knowledge score and selected demographic variables.⁴³

Nisha Philip, Seeta Devi (2017) A study was conducted in Maharashtra to improve the knowledge and attitude of staff nurses regarding umbilical cord stem cell banking. Aim: To assess the effectiveness of self instructional module on the knowledge and attitude of staff nurses regarding umbilical cord stem cell banking. 20 staff nurses, were recruited by non probability purposive sampling technique.. Post assessment was carried after two weeks. Findings revealed that, in pretest, most of the staff nurses (75%) had average knowledge and (13%) had poor knowledge respectively. Whereas, 70% had neutral attitude regarding umbilical cord stem cell banking. After the intervention, 50% of the staff nurses had average knowledge and 50% of them had good knowledge. Majority of staff nurses (65%) had good attitude and 35% had neutral attitude towards umbilical cord stem cell banking.⁴⁴

Narang Sumpi, Dutta Arunjyoti (2017) A study was conducted in Guwahati to determine the effectiveness of self-instructional module on knowledge regarding cord blood banking among staff nurse Objectives of the study was to determine the effectiveness of self-instructional module (SIM) regarding cord blood banking. A pre-experimental design (one group pretest posttest design) was undertaken in Guwahati Medical College and hospital, Guwahati Neurological research centre, Good health hospital, Central nursing home, Assam. The sample size consists of 60 staff nurses. So it indicates that the mean posttest knowledge is significantly higher than the mean pretest knowledge. Hence, SIM on cord blood banking is effective.⁴⁵

CHAPTER III

RESEARCH METHODOLOGY

Research Methodology includes Research approach, Research design, Description of setting, Population sampling, Criteria for sample selection, Research tool & technique, Content validity and Method of data collection.

Research Approach:

Quantitative descriptive approach was used in this study.

Research Design:

Pre-Experimental one group Pretest posttest design.

Description of setting:

The study was conducted in Indira Gandhi Memorial (IGM) Hospital, Agartala West Tripura.

Population:

Staff nurses who are working in IGM hospital, Agartala west Tripura

SAMPLING:**SAMPLE:**

Sample consists of staff nurses who meet the inclusion criteria.

SAMPLE SIZE:

The sample size is 40.

SAMPLING TECHNIQUE:

Purposive sampling technique was used to select the samples.

CRITERIA FOR SAMPLE COLLECTION:**Inclusion criteria**

- Staff nurses who are willing to participate the study.
- Staff nurses who are available during data collection.

Exclusion Criteria:

- Staff nurses who are absent during data collection.

RESEARCH TOOLS AND TECHNIQUES:**The data collection methods consist of Two methods**

Section A: To collect background information, demographic performance was developed. The demographic performance included 6 items. Demographic variables were: Age and gender, professional qualification, clinical experience (in year), previous working experience in, previously any educational programme attended regarding umbilical cord blood

Section B: Self-administered structured knowledge questionnaire, consist of 31 items of knowledge questionnaire.

CONTENT VALIDITY:

The contents is validity by 5 experts (3 experts from child health nursing, 1 experts from obg nursing) one experts from Medical officer.

METHODS OF DATA COLLECTION:**Ethical consideration**

Formal and administrative permission was taken from the following authorities:

- Institute Ethical committee, AHCPL, Agartala
- Principal Institute of Nursing Science
- Director of Health Services
- Written informed consent from the sample

Period of study:

The final study was conducted from 4th May to 4th June 2018.

Data collection Procedure:

- The formal administrative permission was taken from Director of Health Education, Director of Health Services, Medical Superintendent of IGM and Matron.
- The purpose of the study was explained to the matron and staff nurses on 7th May 2018.
- Matron explained there are 225 numbers of staff nurses and working hours of staff nurses.
- Self introduction and establishment of good rapport with the staff nurses to obtain free and frank response, the purpose of the study

was explained to each and assured about confidentiality of their responses.

- 40 samples were collected by using purposive sampling technique (who have fulfilled my inclusion criteria).
- The consent written was taken from all of the staff nurses.
- They were requested to answer all the questions.
- On the 14th May-19th May 2018, pretest knowledge regarding importance of cord blood by using structured knowledge questionnaire was done.
- On the same day self-instructional module was administered.
- On the 21th May-28th May 2018, posttest knowledge of each participant was measured by using same too

DATA ANALYSIS:

The descriptive statistics is used for categorical data and chi square is be used to find out the association between level of knowledge with their demographic variables.

CHAPTER 4

ANALYSIS AND INTERPERTATION OF DATA

This chapter deals with analysis and interpretation of data collected through standardized tool for the study population. The study was conducted to assess the **level of knowledge among staff nurses regarding importance of cord blood**.

Analysis and interpretation of data is the most important phase of research process. Analysis is complication, editing, coding , classification and percentage of data to answer the questions . Interpretation of data referred to critical examination of analyzed data to draw inference and conclusion. Interpretation is one of the essential task in a research process to frame the recommendations of a research problem. It is an activity of critical thinking, which is done carefully through brainstorming to infer the condensed and statistically computed data, so that research question can be answered.

The analyzed data would be presented under the following sections:

Section I: Analysis of the demographic variables of staff nurses.

Section II: Assessment of pre-test knowledge and post- test knowledge score regarding importance of cord blood among staff nurses.

Section III: Findings related to effectiveness of self-instructional module on knowledge regarding importance of cord blood among staff nurses.

Section IV: Findings related to association between pretest knowledge scores regarding importance of cord blood among staff nurses with their demographic variables.

SECTION: I

DESCRIPTION OF DEMOGRAPHIC DATA

Table I: Percentage wise distribution of staff nurses demographic variables N=40

Sl.no		Variables	Categories	Frequency	Percentage
1.		Age in Years	21-25 years	9	22.5
			26-30 years	15	37.5
			31-35years	10	25
			>35years	6	15
2		Gender	Male	0	0
			Female	40	100
3		Professional	GNM	28	70%

		qualification			
			B.sc	7	17.5%
			Post Basic B.sc	5	12.5%
			M.sc Nursing	0	0
4		Clinical Experience (in Years)	<2years	7	17.5
			3-5years	18	45%
			6-8 years	11	27.5%
			>8 Years	4	10%
5.		working experience in Years	Operation theatre	3	7.5%
			maternity ward	10	25%
			Pediatric ward	18	45%
			Labor room	9	22.5%
6		Previously any educational programme attended regarding umbilical cord blood	Yes	0	0
			No	40	100

Distribution of Age

Distribution of staff nurses to their age in years shows that 9 of them (22.5%) belongs to the age group of 21-25 years, 15 of them (37.5%) belongs to the age group of 26- 30 years, 10 of them (25%) to the age group of 31-35 years and 6 of them (15%) belongs to the age group of >35 years.

Distribution of Gender

In regards to gender, the table responses that nil of them belong to the male staff (0%) of them and 40 (100%) of them were belongs to the female staffs.

Distribution of Professional Qualification

majority of nurses 28(70%) are qualified in the GNM, 7(17.5%) of them belongs to Bsc Nursing, 5(12.5%) of them belongs to Post Basic Bsc Nursing, none of them of them belongs to Msc Nursing.

Distribution of clinical Experience

It reveals that majority,7 (17.5%) had < 2 years, 18(45%) of them had 3-5 years, 11(27.5%) of them had 6-8 years and 4(10%) of them had > 8 years.

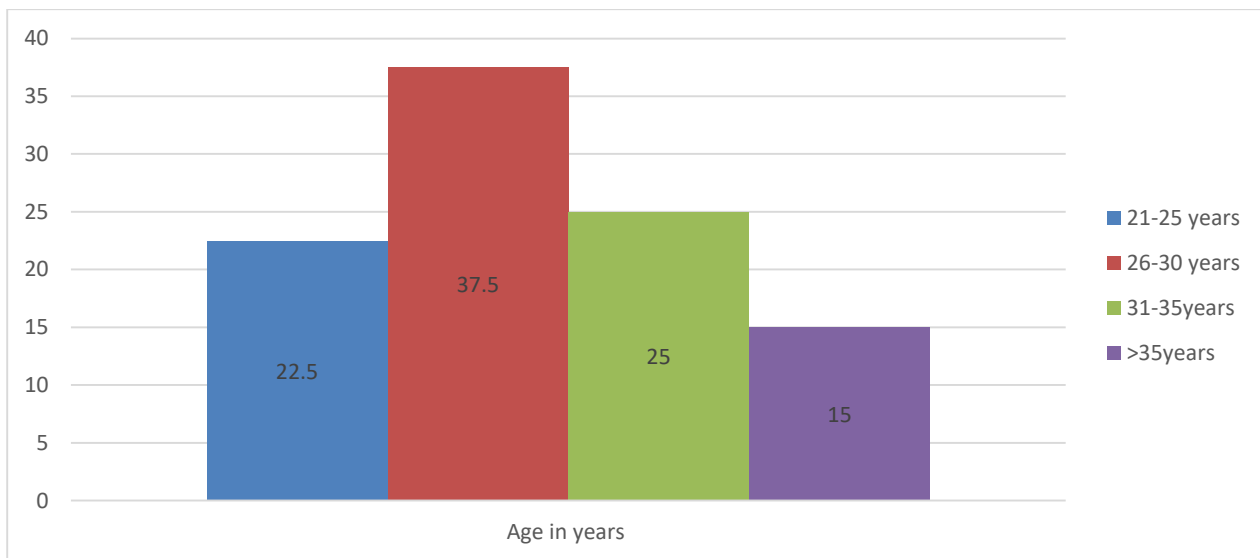
Distribution of Previous Working Experience

In regards to the previous working experience in 3(7.5%) of them were operation theatre, 10(25%) of them were maternity ward, 18(45%) of them were pediatric ward, 9(22.5%) of them were labor room.

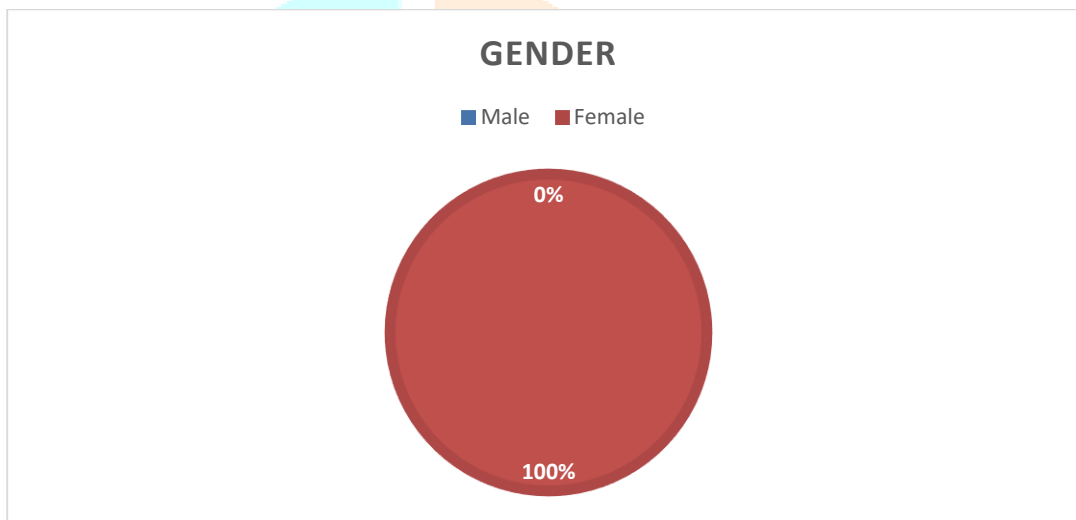
Distribution of Previously any educational programme attended regarding umbilical cord blood

Regarding 0(0%) belongs to the previously any educational programme attended regarding umbilical cord blood and 40(100%) of them had no previously any educational programme attended regarding umbilical cord blood.

GRAPH 1: Simple bar Graph showing the percentage of Staff Nurses according to their age groups.



GRAPH 2: The Pie Graph showing the percentage of Staff Nurses according to Gender.



GRAPH 3: Bar graph represents the classification of professional qualification.

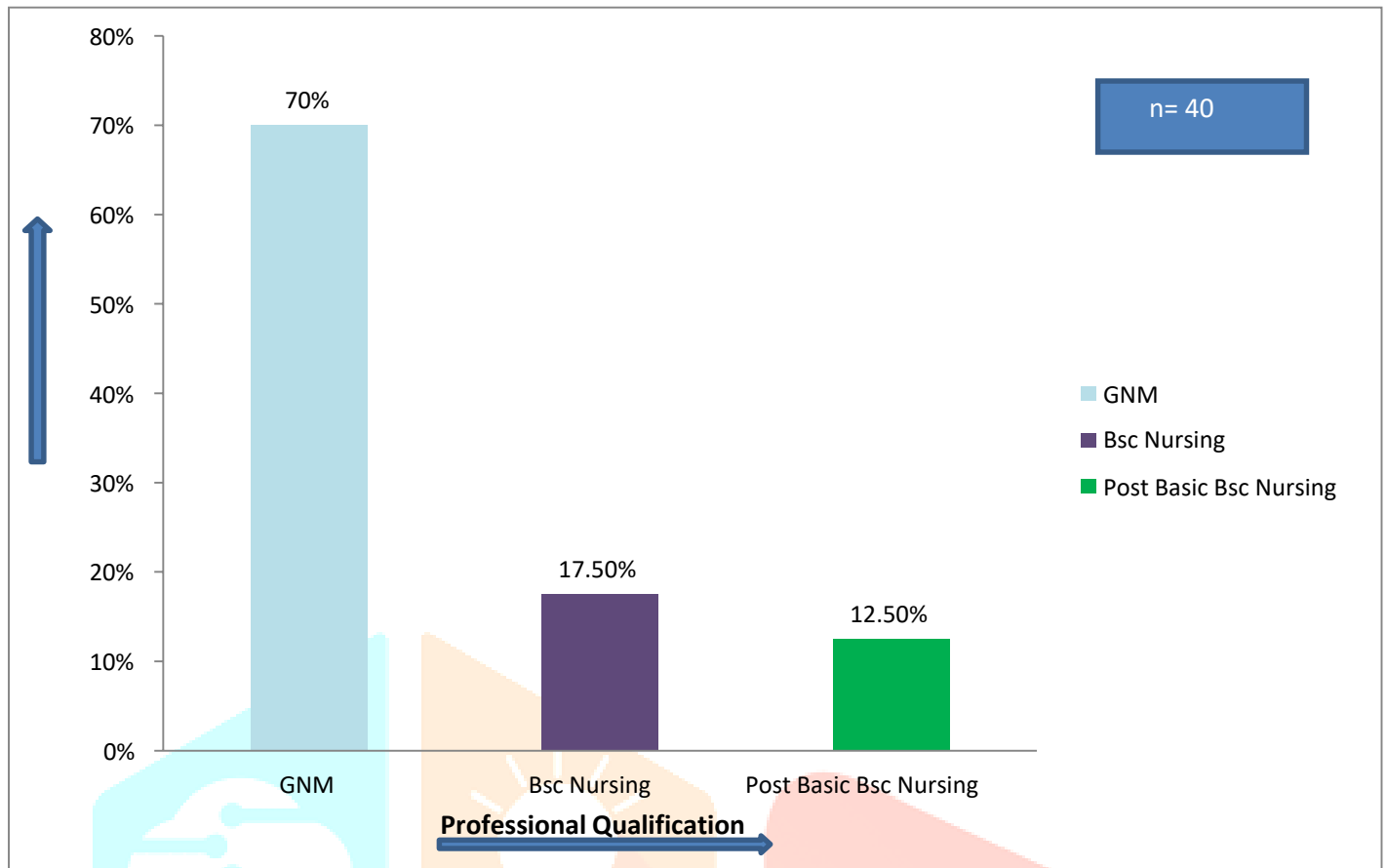


Figure 4: Column graph showing the classification of staff nurses by their clinical experience.

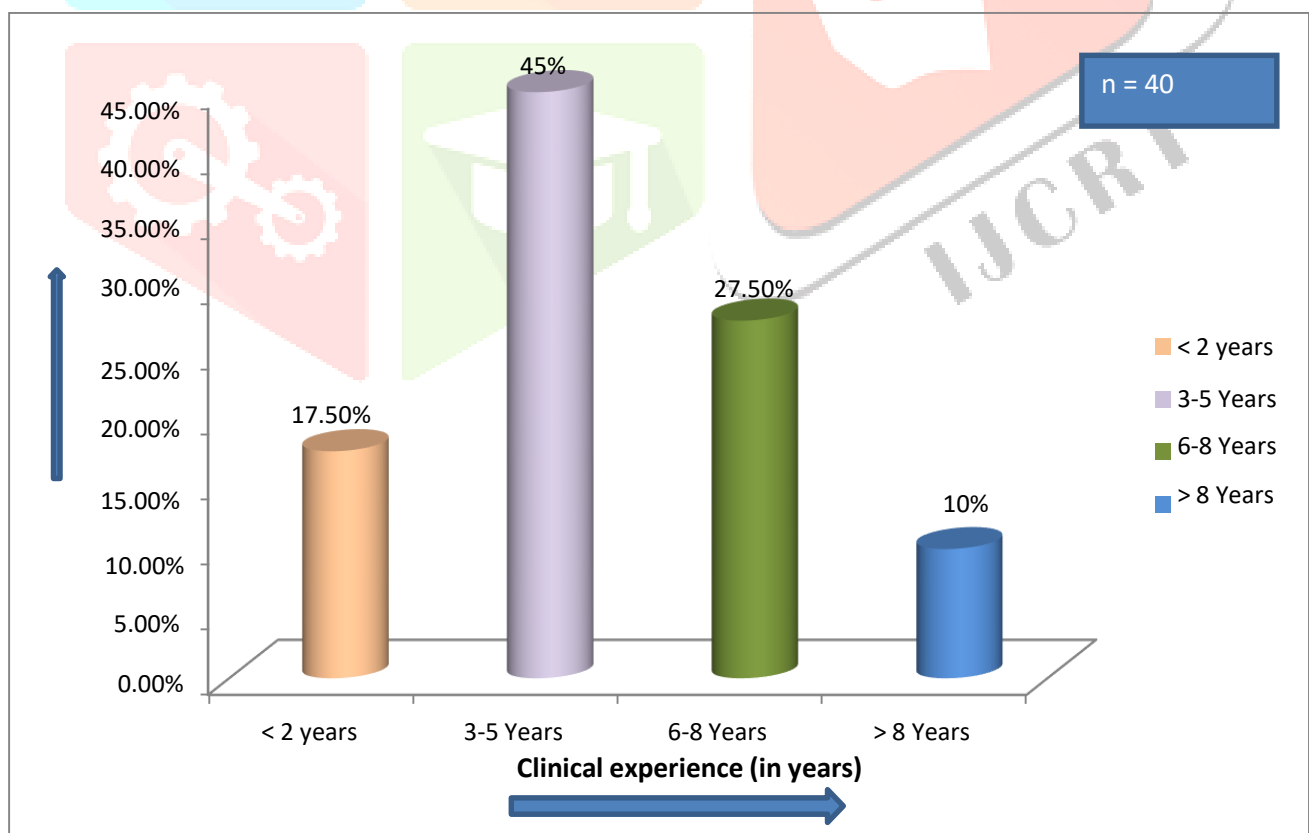


Figure 5: Column graph showing the classification of staff nurses by their Previous Working Experience

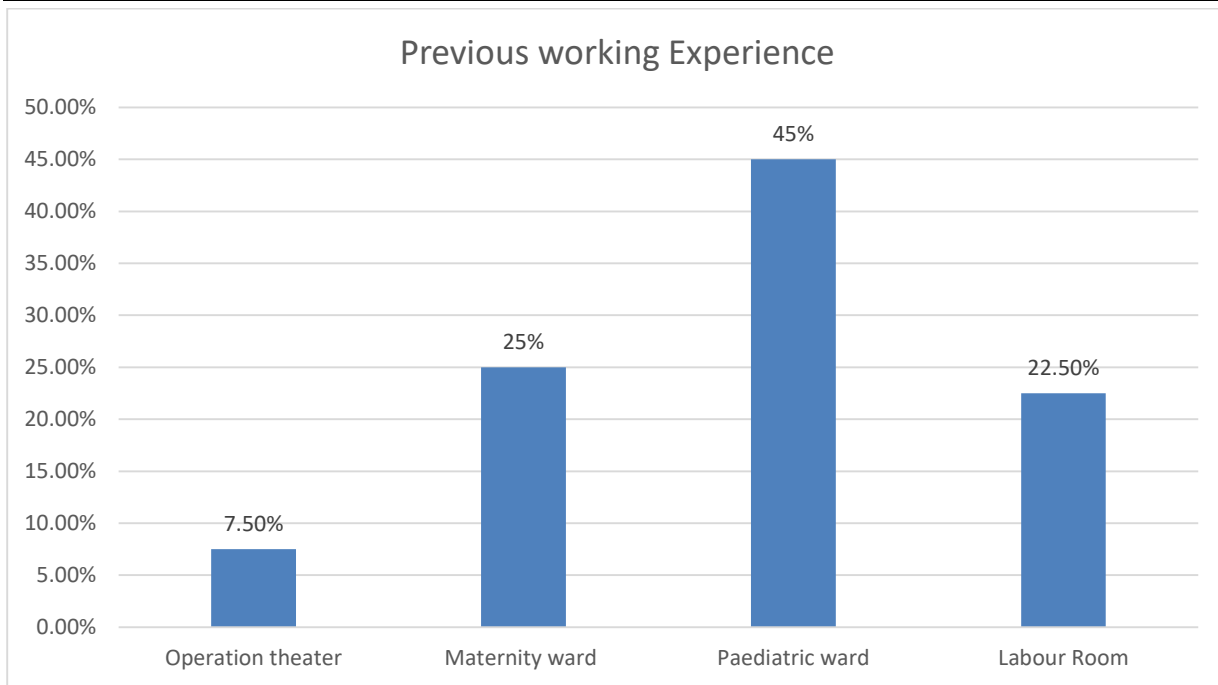
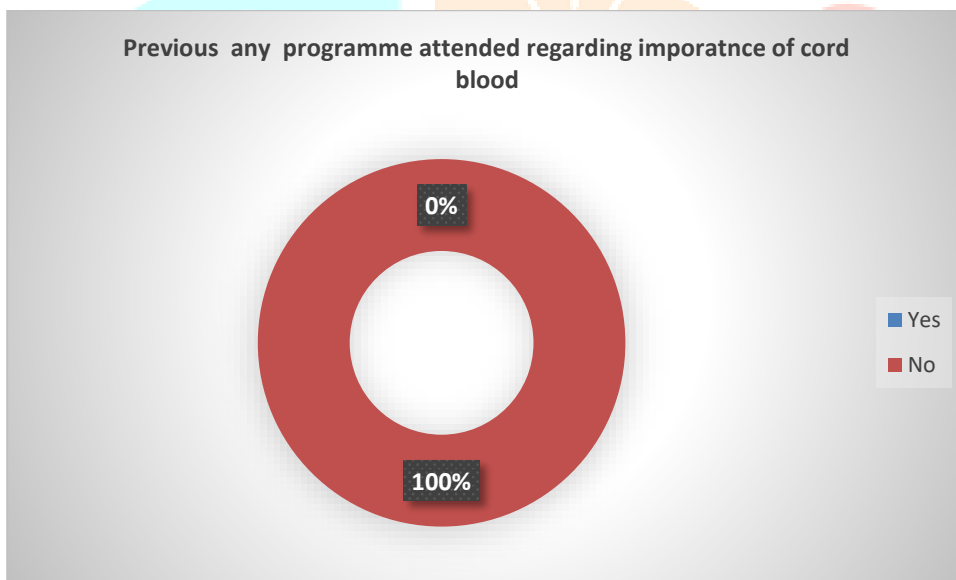


Figure 6: Pie graph showing the classification of staff nurses by their Previous any programme attending regarding importance of Cord blood



Section II

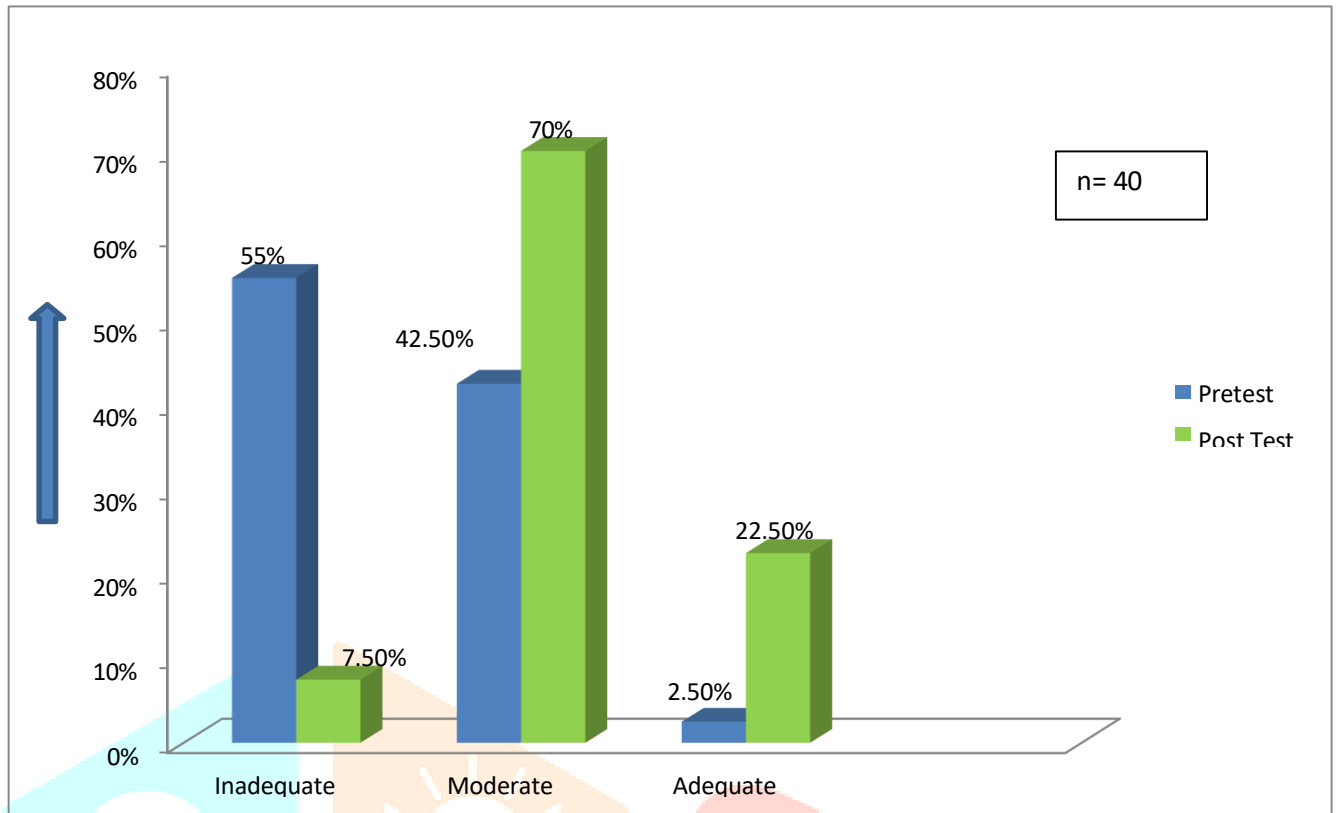
Table 2: Assessment of pre-test knowledge and post- test knowledge score regarding importance of cord blood among staff nurses.

N=40

Area	Range	Mean	Median	Standard Deviation
Pre test	6-18	11.52	12	3.04
Post test	12-20	15.92	16	2.11

The data presented in table 3 representing that in pre test the lowest range is 6 and highest range is 18 and in posttest lowest range is 12 but higher range is 20. Mean post test knowledge score is (15.92) higher than the mean pre test knowledge score (11.52). This standard deviation of pre test (3.04) is increase than post test scores (2.11). So post test scores are more homogenous than pre test scores.

Figure 7: Bar graph showing pretest and posttest knowledge of staff nurses.



The bar graph showed that pre test knowledge score of staff nurses, majority, 23 (55%) of the respondents scored in the category of inadequate, 16(42.5%) respondents' knowledge score were in the moderate category and 1(2.5%) were in the adequate category.

It also showed that in the post test 3(7.5%) of the respondents scored in the category of inadequate, 28(70%) respondents' knowledge score were in the moderate category and 9(22.5%) were in the adequate category.

Section III

Table 3: Findings related to effectiveness of self- instructional module on knowledge regarding importance of cord blood among staff nurses. N=40

Area	Mean	Standard Deviation	Mean Difference	t value
Pretest	11.52	3.04	4.4	9.35
Posttest	15.92	2.11		

“t (df 39= 2.04, p<0.05,* significant)

The data presenting in the table 4 indicates that the mean post test knowledge score (15.92) was higher than the mean pre test knowledge score (11.52) with mean difference of (4.4), which is found to be statistically significant as evident from t- value (9.35) with df (39) at 0.05 level. The obtain mean difference between pre test and post test knowledge scores of staff nurses is not by chance, it is true difference. Hence the null hypothesis (H01) is rejected and research hypothesis (H1) is accepted. So, self-instructional module regarding importance of cord blood among staff nurses is effective an increasing knowledge of staff nurses.

Section IV

Findings related to association between pre test knowledge scores regarding importance of cord blood among staff nurses with their demographic variables.

To find out the association between the pre test knowledge scores regarding importance of cord blood among staff nurses null hypothesis is stated.

H02: There is no significant association between the pre-test knowledge scores regarding importance of cord blood among staff nurses with their demographic variables in accordance to age and professional qualification.

Table 7: Chi square with Yates's continuity correction method depicts association between the pre-test knowledge scores with their demographic variables in accordance to age, professional qualification, clinical experience (in years) and previous working experience in.

Sl.no	Characteristics	Categories	Below median	Equal or above \median	calculated d value	Df	Table Value	Remarks
1	Age (in Years)	Below 30yrs	20	4	0.131	1	3.84	NS
		Above 30yrs	14	2				
2	Professional qualification	GNM	22	6	0.63	1	3.84	NS
		B.Sc	8	4				
		P.B.B.sc	-	-				
3	Clinical Experience (in Years)	Less than 5 yrs	19	6	0.66	1	3.84	NS
		6 years and more	13	2				
4	Previous working experience(in Years)	Operation theater and maternity ward	11	2	0.002	1	3.84	NS
		Labor room and paediatric ward	23	4				

NS= Not significant

The above data shows that there is no significant association between the pretest knowledge score regarding importance of cord blood among staff nurses with their demographic variables. Hence the null hypothesis (H₀₂) is accepted and research hypothesis is rejected.

CHAPTER V RESULT AND DISCUSSION

This chapter deals with the study findings and conclusion. The implications have been started followed by its limitations. This chapter ends with recommendations of the investigators for the researchers in future and some suggestions.

Major findings of the study:

Section I: Findings related to the description of demographic profile of staff nurses regarding importance of cord blood.

- In terms of age 9 of them (22.5%) belongs to the age group of 21-25 years, 15 of them (37.5%) belongs to the age group of 26-30 years, 10 of them (25%) to the age group of 31-35 years and 6 of them (15%) belongs to the age group of >35 years.
- In regards to gender, the table responses that 0 of them belong to the male (0%) of them and 40 (100%) of them were belongs to the female.
- In regards to professional qualification 28(70%) of them belongs to GNM, 7(17.5%) of them belongs to Bsc Nursing, 5(12.5%) of them belongs to Post Basic Bsc Nursing, 0(0%) of them belongs to Msc Nursing.
- Regarding clinical experience (in years) 7(17.5%) of them had < 2 years, 18(45%) of them had 3-5 years, 11(27.5%) of them had 6-8 years and 4(10%) of them had > 8 years.
- In regards to the previous working experience in 3(7.5%) of them were operation theatre, 10(25%) of them were maternity ward, 18(45%) of them were pediatric ward, 9(22.5%) of them were labour room.
- Regarding 0(0%) belongs to the previously any educational programme attended regarding umbilical cord blood and 40(100%) of them had no previously any educational programme attended regarding umbilical cord blood.

Section II: Findings related to the pre test and post test knowledge level of staff nurses regarding importance of cord blood.

- Overall pre test knowledge mean score of staff nurses is 11.52 with standard deviation 3.04.
- Overall post test knowledge mean score of staff nurses is 15.92 with standard deviation 2.11.
- There is significant difference between pre test and post test knowledge score regarding importance of cord blood among staff nurses. Hence research hypothesis is rejected and null hypothesis is accepted.

Section III: Findings related to effectiveness of self instructional module regarding importance of cord blood among staff nurses.

- There is significant increase in post test knowledge score of staff nurses after self instructional module regarding importance of cord blood than pre test knowledge score as evident from t value 9.35, significant at 0.05% level (df 39, t tabulated value 2.04).

Section IV: Findings related to significant association between pre test knowledge score level regarding importance of cord blood among staff nurses with their selected demographic variables.

There is no significant association between pre test knowledge scores regarding importance of cord blood among staff nurses with their selected demographic variables age (in years), gender, professional qualification, clinical experience (in years), previous working experience in, previously any educational programme attended regarding umbilical cord blood) at 0.05 level of significance. So null hypothesis is accepted and research hypothesis is rejected.

Discussion in relation with other studies:

Objectives 1: To assess the pre test knowledge regarding importance of cord blood among staff nurses.

It is evident from the present study that mean post test knowledge score (15.92) is greater than mean pre test knowledge score (11.52) after exposure to self instructional module on knowledge regarding importance of cord blood among staff nurses. This study result supports the following study.

Ujala Joshi, Gopal Singh Charan, Dr. Lalita Kumari (2017) A study was conducted in Punjab to assess the Knowledge on Umbilical Cord Stem Cell Collection, Preservation and Utilization among Nurses in the Selected Hospitals at Jalandhar, pre-experimental one group pre test post test only design was selected. Convenience sampling technique was used to select 60 nurses working in maternity units. Result of study showed that more than half (53.3%) of nurses were in age group of 21-25 years and all (100%) of the nurses were females. According to clinical experiences it was revealed that (31.7%) had more than 8 years experience in context of previous experiences : Nurses (47.7%) had maternity ward, (40%) had labour ward and remaining (18.3%) had operation theater experience. The mean knowledge score of posttest (23.60 ± 5.016) is higher than Pretest (13.68 ± 6.358). There is mean difference of pretest is 9.92. it means the knowledge score increased after self-instructional module.³⁷

Hend S. Mohammed, Hend A. EL Sayed (2015) A study was conducted in Egypt to evaluate the Knowledge and attitude of maternity nurses regarding cord blood collection and stem cells: An educational intervention. Quasi-experimental design was utilized. A total sample of 53 staff nurses were recruited in the study. Data were collected by a structured interviewing questionnaire, and nurses' attitude toward cord blood collection and stem cells. The results revealed that 88.7% of nurses had poor knowledge before intervention. However, 90.6% and 81.2% of them had good knowledge immediately and after three months of intervention respectively. As well as, only 1.9% of the studied nurses had positive attitude toward cord blood collection and stem cells before intervention. Meanwhile, immediately and after three months of intervention the positive attitude changed to 66.0% and 69.8% respectively.⁴⁰

Objectives 2: To find the effectiveness of self-instructional module on knowledge regarding importance of cord blood among staff nurses.

It is evident from the present study that there was significant increase in posttest knowledge score among staff nurses after self-instructional module on knowledge regarding importance of cord blood than pretest knowledge score as evident from t- value 9.35, significant at 0.05 level (df 39, "t" tabulated value 2.04) this study result supports the following study.

Vivitha S. Pinto, Dr. Pushpaveni N. (2018) A study was conducted in Bangalore to evaluate the effectiveness of Self-instructional module regarding collection of cord blood for stem cell therapy in terms of knowledge among staff nurses in selected hospitals at Bangalore. Pre-experimental design, with convenient sampling method was used. 50 staff nurses were collected by using the structured knowledge questionnaire. SIM was implemented and post-test was conducted after 7 days to find the effectiveness. Study findings showed that pre-test knowledge scores were found to be 43.05% and after SIM the post test knowledge scores of staff nurses were found to be 77.45% which is enhanced by 34.4%. With the t-test value 25.96* and chi square value 80.18* which is significant at 5% level. Hence the result has proved that SIM was effective in improving the knowledge of staff nurses on collection of cord blood for stem cell therapy.⁴²

Aksa Peter, Angel Maria P. T, Aniet Bijo, Ani Rose Thomas (2017) A study was conducted in Kerala to assess the knowledge among student nurses regarding umbilical cord stem cell banking in selected nursing colleges of Kerala in a view to develop self-instruction module. A quantitative research approach was adopted. A non-experimental descriptive research design was adopted. 100 student nurses from Nursing College in Kerala were selected. Purposive sampling technique was used. The study findings showed that, 76% of student nurses having moderate knowledge, 23% of student nurses having poor knowledge about umbilical cord stem cell banking. There was no significant association were found between the knowledge score and selected demographic variables.⁴³

Objectives:

1. To find out the association between the pretest level of knowledge score among staff nurses with their selected demographic variables.

It is evident from the present study that there is no significant association between the pre test knowledge score among the staff nurses with their demographic variables. So the present study is contradicted to the following study.

Lye Jee Leng , Soon Lean Keng (2016) A study was conducted in Malaysia to association between nurses' knowledge and attitudes toward the application of stem cells in medicine. A cross- sectional study was employed on 97 nurses trained in midwifery and neonatology by random sampling method using a self-administered questionnaire. Majority of the nurses (n=84; 86.6%) surveyed had a moderate knowledge about stem cells in medicine. More than half (n=59; 60.8%) of the nurses exhibited a positive attitude towards the therapeutic potential of stem cells in medicine. There was a statistically significant difference in total knowledge scores and nurses' clinical working experiences ($p=0.003$).The majority of nurses showed a positive attitude toward the use of stem cells in medicine.³⁹

2. To find the effectiveness of self instructional module on knowledge regarding importance of cord blood among staff nurses.

It is evident from the present study that there was significant increase in post test knowledge score among staff nurses after self-instructional module on knowledge regarding importance of cord blood than pre test knowledge score as evident from t- value 9.35, significant at 0.05 level (df 39, “t” tabulated value 2.04) this study result supports the following study.

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3. To find out the association between the pre test level of knowledge score among staff nurses with their selected demographic variables.

It is evident from the present study that there is no significant association between the pre test knowledge score among the staff nurses with their demographic variables. So the present study is contradicted to the following study.

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CHAPTER VI

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