

Effectiveness of Structured Teaching Program on Knowledge Regarding Menstrual Blood Stem Cells Banking among Nursing Students

Ajitha TP¹, Kabita Baishya², M Jayalakshmi³

¹M.Sc Nursing, Department of Obstetrics and Gynaecology, Army Institute of Nursing, Srimanta Sankaradeva University of Health Science, Guwahati, Assam, India

²Professor, Department of Obstetrics and Gynaecology, Army Institute of Nursing, Srimanta Sankaradeva University of Health Science, Guwahati, Assam, India

³Principal, Army Institute of Nursing, Srimanta Sankaradeva University of Health Science, Guwahati, Assam, India

Abstract: “A study to assess the effectiveness of structured teaching program on knowledge regarding menstrual blood stem cells banking among nursing students in selected nursing colleges of Guwahati, Assam”. **Background of the study:** Menstrual blood stem cell banking is a process of collection and storage of menstrual blood under required condition for the purpose of future therapeutic use. **Aims and Objectives:** To determine the effectiveness of structured teaching program on menstrual blood stem cells banking among nursing students in selected nursing colleges of Guwahati, Assam. **Method:** 195 B.Sc nursing students from selected nursing colleges of Guwahati, Assam; by consecutive sampling technique. A structured questionnaire was used to assess the pre test and post test knowledge score. Structured teaching program was conducted after administering the pre test and post test was administered after one week for each participant. Data was analyzed by using the software package named SPSS 20 version. **Results:** The findings of the study revealed that, Majority (75%) of students were belongs to age group of 21-23 years. 89.24% of students were female. The median of post test knowledge score (17) also higher than the median of pre test knowledge score (11) of menstrual blood stem cells banking, the post test score (SD =2.13) also seemed to be less dispersed than the pre test score (SD=2.24) of menstrual blood stem cells banking. Further paired ‘t’ test was done to determine the effectiveness of structured teaching program, where t value was -23.708 and p =.000 level is highly significant at 0.05 level of significance. The study also showed that there was significant association of pre test knowledge scores on menstrual blood stem cells banking with type of family and family income at 0.05 level of significance. **Conclusion:** This study shows that planned teaching program is very effective in improving the knowledge regarding menstrual blood stem cells banking among nursing students and there is a need for conducting such program frequently among nursing students.

Keywords: Assess, Effectiveness, Knowledge, Planned teaching program, menstrual blood stem cells banking

1. Introduction

“Yesterday is history, tomorrow is a mystery, today is a gift of God, which is why call it the present”

-Bill Keane

According to World Health Organization health is a “state of complete physical, mental and social well being and not merely the absence of disease or infirmity.” Staying Healthy is vital for proper growth and development of mind and body¹. As the world is reaching to its greater heights of urbanization and technological advancements, the emerging newer and incurable disease poses a threat as well as a challenge to the medical field². Until now, menstrual blood has typically been discarded as unsanitary waste. Existing new research shows that menstrual blood is a rich source of self – renewing stem cells that have a high potential to treat ailments in the future through stem cell therapy³. Recent advances in science have proven that stem cell could potentially generate cure and treatment for various diseases including cancers, cerebro vascular, and immune diseases. This promising evidence supports the hope of achieving stem cell therapy in the medical field.

Nursing students need to have a proper knowledge and attitude regarding stem cells therapy through appropriate education during their course of study. This medical

innovation is recent and nurses are challenged to integrate knowledge and attitude related to newly developed concept in clinical practice. Nursing curriculum needs to remain up to date to be able to meet the standards of nursing practice⁴.

1.1 General Objective

To determine the effectiveness of structured teaching program on menstrual blood stem cells banking among nursing students in selected nursing colleges of Guwahati, Assam.

1.2 Specific Objectives

- 1) To determine the knowledge scores regarding menstrual blood stem cells banking among nursing students in selected nursing colleges of Guwahati, Assam.
- 2) To evaluate the effectiveness of structured teaching program on knowledge regarding menstrual blood stem cells banking among nursing students in selected nursing colleges of Guwahati, Assam.
- 3) To determine the association of knowledge scores regarding menstrual blood stem cells banking with selected socio demographic variables among nursing students in selected nursing colleges of Guwahati, Assam.

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The study was conducted at Wake forest Baptist Medical Centre Institute for regenerative medicine in the US to identify stem cell in urine that can be directed to become multiple cell types. These stem cells virtually supplies to antilogous cells for treating not only urology related problem condition such as kidney disease, urinary incontinence, but could also be used in other field as well⁵.

The Indian Council of Medical Research has estimated that some 50 million patients with heart disease, 5 million with Parkinson’s disease and 5 million with Alzheimer’s disease in India are potential beneficiaries of stem cell therapy³. Chaitanya Stem Cell Center is a part of Chaitanya Hospital, Pune, and an ISO 9001/2008 accredited organization. They have already treated many cases with the help of Stem Cells, out of which 70% cases have shown clinical improvements. They used cells of highest purity, viability and integrity from world quality laboratory.⁶

Dr Hans N, Kaur S (2016) conducted a study to assess effectiveness of structured teaching program on knowledge regarding menstrual blood stem cells banking among graduate nursing students in selected colleges in Punjab. The study was an evaluative study carried out on 96 nursing students. Purposive sampling technique was used to select the sample. Results of the study revealed that according to pre-test knowledge, majority (92.7%) of nursing students had average knowledge regarding menstrual blood stem cells banking and according to post-test knowledge, majority (88.5%) of nursing students had good knowledge. On comparing, mean post-test knowledge score was more than pretest knowledge score which was calculated by t-test (t=19.197) at p<0.05 level of significance. The study concluded that structured teaching program was effective to enhance the knowledge of nursing students regarding menstrual blood stem cells banking⁷.

2. Materials and Methods

2.1 Research approach

Quantitative approach

2.2 Research design

Pre –experimental design (One group pre-test and post-test design) (O1...X...O2)

Key

O1 – Pre test of knowledge regarding menstrual blood stem cells banking

X – Structured teaching program on knowledge regarding menstrual blood stem cells banking.

O2 – Post test of knowledge regarding menstrual blood stem cells banking.

Setting of the study :- Arya College of Nursing Guwahati, Assam, CPMS college of nursing Guwahati, Assam and Hayat institute of nursing college Guwahati; Assam.

Population: B S c nursing students (3rd year and 4th year)

Sample Size: 195

Sampling Technique: Non probability Consecutive sampling technique

Population	Day 1 O1	Day 1 X	Day 8 O2
BSc nursing students (3 rd year and 4 th year) from Arya nursing college Guwahati, Assam, CPMS college of nursing Guwahati, Assam, and Hayat institute of nursing college, Guwahati, Assam. Sample size – 195	Administering of Tool I: Demographic proforma Tool II : Structured questionnaire on knowledge regarding menstrual blood stem cells banking.	Administration of structured teaching programme on knowledge regarding menstrual blood stem cells banking	Administration of Tool II- Structured questionnaire on knowledge regarding menstrual blood stem cells banking.

3. Data Analysis

The data was analyzed through descriptive and inferential statistics.

3.1 Descriptive Statistics:

Section I: Descriptive analysis of socio-demographic proforma

Section II: Assessment of knowledge scores regarding menstrual blood stem cells banking among nursing students is describing by mean, median, standard error and standard deviation

Section III: Effectiveness of structured teaching program on knowledge regarding menstrual blood stem cells banking is calculating by ‘t’ test.

Section IV: Association between pre test knowledge score of menstrual blood stem cells banking among nursing students and selected demographic variables is calculating by chi square/ fishers exact test.

Section I:- The findings of the study revealed that out of 195 nursing students, Majority (75%) of students were belongs to age group of 21-23years. 89.24% of students were female. 53.85% of nursing students were belongs to Hindu religion, Majority (382.56%) of students were belongs to joint family. Most (30.26%) of students mother’s had higher secondary education. 34.8% of students family monthly income was under 21, 000-40, 00053.84% students were from urban area, Majority (97.95%) of students don’t have any previous knowledge regarding menstrual blood stem cells banking where as from teacher and medical staff students got almost same percentage of knowledge.

Section -II

Criteria	Score range	Knowledge score			
		Pre test		Post test	
		Frequency	Percentage	Frequency	Percentage
Inadequate	0-8	27	13.84%	0	0
Moderate	9-13	144	73.85%	26	13.33%
Adequate	14-20	24	12.30%	169	86.67%

S No	Mean	Median	Standard error	Standard deviation
Pre test	10.91	11	0.16	2.24

Post test	16.46	17	0.15	2.13
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The data presented in table indicates that mean of post test knowledge score (16.46) was higher than the mean of pre test knowledge score (10.91) of menstrual blood stem cells banking. The median of post test knowledge score (17) also higher than the median of pre test knowledge score (11) of menstrual blood stem cells banking. The standard error of the post test (.15) showed lesser score than the pre test (.16) and the post test score (SD =2.13) also seemed to be less dispersed than the pre test score (SD=2.24) of menstrual blood stem cells banking. So it is evident that post test knowledge score were higher than the pre test knowledge score.

Section III

Knowledge score	Mean	' t ' value	P value
Pre test	10.91	-23.708	0
Post test	16.46		

Table shows that t value ($t=-23.708$ and $p =.000$) is highly significant at 0.05 level of significance,

Hence the null hypothesis was rejected and research hypothesis was accepted. which shows that the structured teaching program was effective.

Section IV

The study also found that knowledge regarding menstrual blood stem cells banking have significant association with type of family and monthly family income.

4. Result

The findings of the study revealed that out of 195 nursing students, Majority (75%) of students were belongs to age group of 21-23years. 89.24% of students were female. 53.85% of nursing students were belongs to Hindu religion, Majority (382.56%) of students were belongs to joint family. Most (30.26%) of students mother' s had higher secondary education. 34.8% of students family monthly income was under 21, 000-40, 000. 53.84% students were from urban area, Majority (97.95%) of students don't have any previous knowledge regarding menstrual blood stem cells banking where as from teacher and medical staff students got almost same percentage of knowledge. The findings also revealed that mean of post test knowledge score (16.46) was higher than the mean of pre test knowledge score (10.91) of menstrual blood stem cells banking. The median of post test knowledge score (17) also higher than the median of pre test knowledge score (11) of menstrual blood stem cells banking. The standard error of the post test (.15) showed lesser score than the pre test (.16) and the post test score (SD =2.13) also seemed to be less dispersed than the pre test score (SD=2.24) of menstrual blood stem cells banking. Further paired 't' test was done to determine the effectiveness of structured teaching programme on knowledge regarding menstrual blood stem cells banking where 't' value for knowledge on menstrual blood stem cells banking were -23.708 and $p =.000$ level is highly significant at 0.05 level of significance. The study also found that knowledge regarding menstrual blood stem

cells banking have significant association with type of family and monthly family income

5. Discussion

The title of the study was "A study to assess the effectiveness of structured teaching program on knowledge regarding menstrual blood stem cells banking among nursing students in selected nursing colleges of Guwahati, Assam"

- In order to achieve the objectives of the study, pre experimental design was used.
- Structured questionnaire and structured teaching program was used for the study
- In this present study, 195 samples were selected by consecutive sampling method

6. Objective

1) To determine knowledge scores regarding menstrual blood stem cells banking among nursing students in selected nursing colleges of Guwahati, Assam.

In the present study mean of post test knowledge score (16.46) was higher than the mean of pre test knowledge score (10.91) of menstrual blood stem cells banking. The median of post test knowledge score (17) also higher than the median of pre test knowledge score (11) of menstrual blood stem cells banking. The standard error of the post test (.15) showed lesser score than the pre test (.16) and the post test score (SD =2.13) also seemed to be less dispersed than the pre test score (SD=2.24) of menstrual blood stem cells banking. So it is evident that post test knowledge score were higher than the pre test knowledge score.

Inferential analysis revealed that calculated 't' value was -23.708 and $p =.000$ level is highly significant at 0.05 level of significance. So it is evident that structured teaching program was effective to enhance the knowledge of nursing students regarding menstrual blood stem cells banking.

The present study supports the findings of the study conducted by Indumathi, Sherlin GI, Innisaya S (2018) Effectiveness of Self Instructional Module on Knowledge Regarding Cord Blood Banking Among Staff Nurses at Selected Hospital, Villupuram District. The result of this study revealed that, in pre-test 22 (73.3%) nurses had inadequate knowledge 6 (20%) nurses had moderate knowledge and 2 (6.6%) nurses had adequate knowledge. In post test, all the staff nurses (i.e) 30 staff nurses had adequate knowledge regarding cord blood banking

The calculated "t" value 17.45 is greater than the tabulated 't' value 4.35 at 5% level of significance. So the Self-Instructional Module regarding cord blood banking was very effective. So it was concluded that it is necessary to improve their knowledge regarding cord blood banking through an educational approach.

2) To evaluate the effectiveness of structured teaching program on knowledge regarding menstrual blood stem

cells banking among nursing students in selected nursing colleges of Guwahati, Assam.

The present study supports the findings of the study conducted by Neelam H N, Kaur S (2016) Effectiveness of structured teaching programme on knowledge regarding menstrual blood stem cells banking among nursing students. Results of the study revealed that according to pre-test knowledge, majority (92.7%) of nursing students had average knowledge regarding menstrual blood stem cells banking and according to post-test knowledge, majority (88.5%) of nursing students had good knowledge. On comparing, mean post-test knowledge score was more than pretest knowledge score which was calculated by t-test ($t=19.197$) at $p<0.05$ level of significance. The study concluded that Structured teaching program was effective to enhance the knowledge of nursing students regarding menstrual blood stem cells banking.

3) To determine the association of knowledge regarding menstrual blood stem cells banking and selected demographic variable among nursing students.

The present study supports the findings of study conducted by Amin AS, Kumary V, Viji P.C (2016) Knowledge Regarding Umbilical Cord Stem Cell Therapy among Staff Nurses with the View to Develop Self-Instructional Module. Non probability convenience sampling technique was used. The knowledge level was assessed using structured knowledge questionnaire. Data analysis was done by descriptive and inferential statistics. The assessment of knowledge regarding umbilical cord stem cell therapy among staff nurses showed that majority (90%) had poor knowledge and only 10% had average knowledge. The study results also depicted the association between knowledge scores and few selected variables like previous knowledge and source of information at 0.05 level of significance.

7. Conclusion

From the findings of the present study it can be concluded that structured teaching program on menstrual blood stem cells banking was effective in increasing knowledge regarding menstrual blood stem cells banking among nursing students. So, it is the responsibility of the Nursing teachers to organize periodic in-service educational and training program for nursing staff and students to improve their knowledge and skill regarding Menstrual blood stem cells banking so that they can disseminate this information to the general public.

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