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Research Article

Effectiveness of structured teaching programme on knowledge regarding menstrual blood stem cells banking among nursing students

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ABSTRACT

Background: Menstrual blood banking enables women to store their menstrual blood under required conditions and preserve it for future. Stem cells present in the menstrual blood have the remarkable potential to develop into many different cell types in the body. The objective of the study was to assess the effectiveness of structured teaching programme on knowledge regarding menstrual blood stem cells banking among nursing students studying in selected nursing college of Amritsar, Punjab.
Methods: Current study is an evaluative study carried out on 96 nursing student's data for the study was collected in the month of November 2016. Purposive sampling technique was used to select the sample. Socio-demographic profile was used to assess the personal information of the subjects and self-structured questionnaire to assess the knowledge of nursing students regarding menstrual blood stem cells banking.
Results: 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 pre-test knowledge score which was calculated by t-test ($t=19.197$) at $p<0.05$ level of significance.
Conclusions: Structured teaching programme was effective to enhance the knowledge of nursing students regarding menstrual blood stem cells banking.

Keywords: Structured teaching programme, Menstrual blood stem cells banking, Nursing students

INTRODUCTION

The menstrual cycle is a normal process that happens to nearly all women during their childbearing years, from puberty till menopause. Menstrual blood is not just blood it's also made up of tissue from the uterine lining. It also contains the remnants of the egg that travel down the fallopian tube into the uterus during ovulation. Many biochemical and histological events occur unnoticed by the fertile female; however, the monthly menstrual cycle is a repeating reminder that she is capable of conceiving and developing new life.[1]

Till date women have been discarding menstrual blood as an unwanted and unsanitary waste. However, researchers found that menstrual blood is a rich source of stem cells that have the ability to multiply and differentiate into any kind of cells. Earlier, blood from umbilical cord was regarded as the ultimate reserve for stem cells. Only those who have given birth at any time of their life were able to preserve the stem cells as they were obtained from umbilical cord. But researches have now discovered and successfully harvested stem cells from menstrual blood making it possible for all the women including those who have never given birth to preserve stem cells for themselves. Stem cells in menstrual blood have similar regenerative capabilities as the stem cells in umbilical cord blood and bone marrow. The discovery of stem cells in the menstrual blood has given a new meaning to menstruation for women who earlier considered menstruation as nothing but a painful and necessary evil.[2]

Menstrual blood banking enables women to store their menstrual blood under required conditions and preserve it for future. These banks charge minimal annual fee for storage and preservation and allow women to have lifelong benefits from them.[3] Menstrual blood stem cells banking concept was started in the year 2007 by an American company Cryo cell, and in India it was started by life cell International on March 8, 2011 by film actress Lisa Ray, who won the battle with cancer and recovered from deadly disease. The cost of private banking varies depending on the bank, but generally ranges from annual storage fees of around 1,500 per year. Nearby private menstrual blood banking centre are:-Life cell international limited, Cryo banks international India private limited.[4] The process for collection of menstrual blood is simple; like a tampon, a silicone cup is inserted in the vagina on the day of heaviest flow. The cup needs to be placed inside the vagina for at least three hours so as to collect approximately 20 millilitres of blood. This is then poured in the collection kit and is sent back to the menstrual blood bank laboratory where it is processed, frozen and stored.[3] The stem cells in menstrual blood are highly proliferative- replicating every 24-36 hours. To date, these stem cells have been sub-cultured up to 47 times; umbilical cord blood stem cells subculture generally a maximum of 12 times. It is important to note that menstrual stem cells retain embryonic stem cell markers, giving them the remarkable potential to morph into many different healthy cell types. The unique properties of these cells demonstrate the exciting possibilities they offer in future therapeutic applications. Currently, they are being studied to treat stroke, heart disease, diabetes, neurodegenerative diseases and ischemic wounds in pre-clinical and clinical models. Thus potential for stem cell for the future is immense. Hence the researcher felt the need to enhance the knowledge regarding menstrual blood stem cells banking among nursing students so that they can disseminate this information to the general public.[5]

METHODS

In order to assess the effectiveness of structured teaching programme on knowledge regarding menstrual blood stem cells banking among nursing students, evaluative research design was adopted. The study was conducted in Khalsa College of nursing, Amritsar (Punjab). The rationale for selection of the present setting for the study was researcher's familiarity with the setting, convenience, feasibility, expected cooperation from the authorities in getting permission, language and geographical proximity. The investigator selected 96 Nursing Students who fulfilled the inclusion criteria by using purposive sampling technique. Prior to the data collection procedure, researcher gave self-introduction to nursing students and explained the purpose of the study. A good rapport was established and obtained the informed written consent from the samples. Socio-demographic Profile was used to assess personal information of the subjects and structured questionnaire was used to assess knowledge regarding menstrual blood stem cell banking. (Listed below: part 1 and 2). Pre-test knowledge regarding menstrual blood stem cells banking among nursing students was assessed and then structured teaching was given, after 4 days of structured teaching, post-test was taken and the scoring was done by using same tool. The time taken by each respondent for filling the tool was 20- 25 minutes. The collected data were analyzed using descriptive and inferential statistics.

Part 1: Socio-demographic profile: This part consists of items for obtaining personal information of the subjects such as age (in years), religion, marital status, place of living, and source of information and history of hereditary disorders.

Part 2: Self-structured questionnaire on menstrual blood stem cells banking: It was prepared to assess the level of knowledge regarding menstrual blood stem cells banking among nursing students. It consists of 25 items. Each correct answer scored as 1 and wrong answer as 0. Hence, minimum score was 0 and maximum score was 25.

Table 1: Criterion measure.

Level of knowledge	%	Score
Good	>69	18-25
Average	34-69	09-17
Poor	<34	<8

RESULTS

Table 2 depicts the frequency and percentage distribution of nursing students according to pre-test knowledge regarding menstrual blood stem cells banking. It shows that majority (92.7%) of nursing students had average knowledge, followed by 4.2% had good knowledge whereas remaining (3.1%) had below average knowledge regarding menstrual blood stem cells banking. Majority of the nursing students had average knowledge regarding menstrual blood stem cells banking.

Table 3 depicts the frequency and percentage distribution of nursing students according to post-test knowledge regarding menstrual blood stem cells banking. It shows that majority (88.5%) of nursing students had good knowledge and only (11.5%) had average knowledge regarding menstrual blood stem cells banking. Majority of the nursing students had good knowledge regarding menstrual blood stem cells banking.

Table 4 depicts the comparison of pre-test and post-test knowledge of nursing students regarding menstrual blood stem cells banking. It shows that the mean (20.04) of post-test knowledge score was more than the mean (13.43) of pre-test knowledge score of nursing students regarding menstrual blood stem cells banking .The mean difference between pre-test and post-test knowledge regarding menstrual blood stem cells banking was found

statistically with 't' value (19.197*) at p<0.05. Structured teaching programme had significant effect on knowledge regarding menstrual blood stem cells banking among nursing students.

Table 2: Frequency and percentage distribution of nursing students according to pre-test knowledge regarding menstrual blood stem cells banking.

Level of knowledge	n	%	Mean	SD
Good (>69%)	4	4.2		
Average (34-69%)	89	92.7	13.43	2.422
Below average (<34%)	3	3.1		

N=96, Maximum Score=25, Minimum Score=0.

Table 3: Frequency and percentage distribution of nursing students according to post-test knowledge regarding menstrual blood stem cells banking.

Level of knowledge	n	%	Mean	SD
Good (>69%)	85	88.5		
Average (34%-69%)	11	11.5	20.04	2.298
Below Average (34%)	0	0		

N=96, Maximum score=25, Minimum score=0.

Table 4:Comparison of pre-test and post-test knowledge of nursing students regarding menstrual blood stem cells banking.

Knowledge	Mean	SD	df	't'
Pre-test	13.43	2.422	95	19.197*
Post-test	20.04	2.298		

N=96, Maximum Score=25*Significant at p<0.05, Minimum Score=0.

DISCUSSION

In the present study, analysis of data regarding menstrual blood stem cells banking among nursing students related to post-test knowledge revealed that majority (88.5%) of nursing students had good knowledge and only (11.5%) had average knowledge regarding menstrual blood stem cells banking.The findings are consistent with result of a study on effect of educational intervention on knowledge & attitude of nursing students regarding Stem Cells therapy revealed that majority (80.8%) had good knowledge and only (19.2%) had average knowledge regarding stem cells therapy.[6]

In the present study, the comparison of pre-test and post-test knowledge regarding menstrual blood stem cells banking among nursing students shows significant difference with 't' value (19.197) at p<0.05 level of significant effect. Hence, concluded that structured teaching programme had significant effect on knowledge regarding menstrual blood stem cells banking among nursing students. Similar study was conducted to assess the effectiveness of computer assisted teaching program on knowledge regarding menstrual blood stem cells banking among nursing students. An evaluative research approach (pre-test post-test design) was used by researcher. Sample of 50 nursing students were selected by purposive sampling. The comparison of pre-test and post-test knowledge regarding menstrual blood stem cells baking among nursing students showed significant difference with t value (t=22.5*) at p<0.05 level of significance. Therefore, it was concluded that structured teaching programme was very effective in improving knowledge regarding menstrual blood stem cells banking among nursing students.[7]

CONCLUSION

Results of the study shows that according to pre-test knowledge, majority (92.7%) of nursing students had average knowledge and according to post-test knowledge, majority (88.5%) of nursing students had good knowledge. On comparison, mean post-test knowledge score was more than pre-test knowledge score which was calculated by t-test (t=19.197) at p<0.05 level of significance. So, it is the responsibility of the Nursing teachers to organize periodic in-service educational and training programme 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 because potential for stem cell therapy for the future is immense.

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