Original Article

Knowledge On Menstrual Stem Cell Banking Among Nursing Students :Descriptive Study- South Coastal, Karnataka India

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Abstract

Background: Given that stem cells may be extracted from it, menstrual blood is regarded as the ideal waste to use. Women have a special opportunity to gather and store stem cells that can be extracted from the body's menstrual blood thanks to menstrual stem cell banking. It might be kept for later use in addiction to this. In this study, we evaluate nursing students' understanding of menstrual stem cell banking. The purpose of the study is to assess nursing students' understanding about menstrual stem cell banking.

Material and Method: To measure knowledge regarding menstrual stem cell banking, 134 nursing students were chosen using a non-probability purposive sampling technique. A quantitative, descriptive research design was used to carry out the study. An organised knowledge questionnaire was used to obtain the information.

Result: The majority of nursing students (89.6%) had average awareness about menstrual stem cell banking, according to the study. 3.5% of nursing students had inadequate understanding, compared to 7.5% who had adequate knowledge.

Conclusion and interpretation: According to this survey, most nursing students in certain nursing institutions in Mangalore have mediocre awareness of menstrual stem cell banking.

Key words: Knowledge, stem cell banking, menstrual stem cell, menstrual blood uses

1. INTRODUCTION

Every month, a woman excretes her menstrual blood because she believes it to be useless. It has a significant amount of self-renewing stem cells, according to the researchers. Stem cells are master cells with the ability to develop into any type of body cell. They are highly proliferative and have the ability to develop into several types of healthy cells, including those found in the blood, heart, skin, muscles, and brain.[1]

Every month, all women discard their menstrual blood as an unwanted and filthy waste. For women who previously saw menstruation as nothing more than a painful and inevitable evil, the finding of stem cells in menstrual blood has given menstruation a new meaning. The special ability of stem cells to differentiate into any form of cell (1-3). These cells can successfully contribute to cell survival following degeneration because of their immunological immaturity. A significant amount of self-renewing cells that can differentiate into other body cells are present in the discarded, unclean menstrual blood that was ejected as waste, which offers a fantastic viewpoint for cell treatment.[2] The stem cells divide quickly, have the capacity to differentiate into other cell types, and can grow into neural, cardiac, cartilage, fat, and bone tissue. The success rate of stem cells extracted from menstrual blood is 100 times more than that of stem cells extracted from human bone marrow, which is (0.2-0.3%).[3] A study was done to evaluate nursing students' understanding of the banking of menstrual blood stem cells. The findings showed that the majority of students (75%) were aware of what a menstrual stem cell bank was and that just 7% of them were aware of the test that must be done prior to the collection of menstrual stem cells. About 65% of people were aware about the first menstrual stem cell bank in India. (14%) understand its significance.[4] Nevertheless, there are several benefits to using menstrual stem cells, including the ability to diagnose or treat disorders including Alzheimer's disease, heart disease, inflammatory bowel disease, rheumatoid arthritis, osteoarthritis, Parkinson's disease, and others. Menstrual blood provides a superior substitute for adult stem cells that can get beyond the myriad logistical and moral issues that embryonic stem cells must deal with.[5] According to recent studies, menstrual stem cell banking offers women a rare chance to gather and store essential stem cells that can be extracted from menstrual blood. Menstrual blood can be collected at home without any discomfort or inconvenience. Therefore,

spreading knowledge throughout the society or community has a significant impact. Therefore, nurses play a crucial role in raising society's awareness through home visits, school/college presentations, and community awareness events.

MATERIALS AND METHODS

The current study, which included 134 nursing college students from Mangaluru, was conducted using a quantitative descriptive research methodology. 134 samples were chosen using a non-probability purposive sampling technique, taking into account level of significance 5% and 7% margin error estimates, and the data was gathered using a structured knowledge questionnaire on menstrual stem cell banking. Based on initial institutional approval from the institution's scientific review board, Yenepoya (Deemed to be University YEC 2/955-dated protocol was used to acquire ethical approval from the organisation. SPSS 23 was used to gather, analyse, and present the data.

RESULTS:

The findings of the present study revealed that the majority of nursing students christians(66.4%) belong to the age 20-21 years 73(54.5%) and majority of them Third year Bsc 56 (41.8%) . Most of the nursing students 134(100%) were hostel students, majority of them 115(85.8) haven't any previous information about menstrual stem cell banking.

Table 1: Socio Demographic Characteristics of samples

n=134

Sl. No. Variables	Frequency	Percentage
1. Age (in years)		
a. 18-19	60	44.8
b. 20-21	73	54.5
c. Above 21	1	0.7
2. Religion		
a. Hindu	33	24.6
b. Christian	88	66.4
c. Muslim	12	9.0
3. Year of course		
a. First year Bsc	2	1.5
b. Second year Bsc	39	29.1
c. Third year Bsc	56	41.8
4. Place of residence		
a. Hostel	134	100
b. Home	-	-
c. Paying guest	-	-
5. Previous knowledge		
a. Yes	19	14.2
b. No	115	85.8
c.Somewhat	-	-

Assessment of knowledge regarding menstrual stem cell banking among nursing students:-

Data presented in Table 2 shows that majority of the nursing students that is 120(89.6) (of them had average knowledge whereas 10(7.5) of them had good knowledge,4 (3) of them had poor knowledge and 7 (5.8%) of them have poor knowledge regarding menstrual stem cell banking this indicates nursing students have average knowledge regarding menstrual stem cell banking.

Table 2 Distribution Of Level Of Knowledge Among Nursing Students

n=134

Level of knowledge	Score	Frequency	Percentage
Good	21-30	10	7.5
Average	11-20	120	89.6
Poor	1-10	4	3

Table 3: Level of knowledge of nursing students regarding menstrual stem cell banking.

n=134

Variable	Mean	Median	SD	Mean%
Knowledge	15.8	15.5	3.3	21.1%

Table 4: Association between level of knowledge and select demographic variables.

SL No	Demographic Variables	χ^2	P value
1	Age(years)	9.22	.01*
2	Religion	1.64	0.44
3	Year of course	31.99	0*
4	Place of residence	0	0*
5	Previous knowledge	.552	0.45

Table 4 depicts that there is a significant association between age, year of course and place of residence. No significant association between religion and previous knowledge.

DISCUSSION:

According to the study's findings, the majority of nursing students—73 (54.5%)—are between the ages of 20 and 21; 88 (64.4%) are Christian; and 56 (41.8%) are in their third year of a B.Sc. in nursing. All samples' primary abode is a hostel. 85.8% of the participants, or roughly 115, had no prior knowledge of menstrual blood stem cell banking. Mehrabani D et al. provide evidence to corroborate the findings of the present investigation (2016). According to the growth factors in the 12 and 24 were culture plates, the study showed that menstrual stem cells were plastic adherent and spindle-shaped. It was shown that the population doubling times for women between the ages of 30 and 40 were 55.5 and 62 hours, respectively. While those values in the women aged between 40-50 years were70.4 and 72.4 hours correspondingly the positive expression of CD44 and CD90 are negative and CD34 were noted.[6]

The current study reveals that the majority of nursing students—120 (89.6) of them—had average knowledge about menstrual stem cell banking, while 10 (7.5) of them had good knowledge and 4 (3) had poor knowledge. This finding suggests that nursing students have average knowledge about menstrual stem cell banking. According to the results of the current study, which are corroborated by Poddler L. (2019), only 7% of students were aware of the test that must be done prior to the collection of menstrual stem cells, while the majority of students (75%) knew what a menstrual stem cell bank was. (65%) were aware of India's menstrual stem cell bank's history. (4%) understands the meaning.[4]

Age, year of education, and place of living are significantly correlated, while religion and prior knowledge are not significantly correlated, according to the study. The current study's findings are backed by Poddler L. (2019). According to the survey, just 7% of students were aware of the test that must be done prior to the collection of menstrual stem cells, while 75% of students knew what a menstrual stem cell bank was. (65%) were aware of India's menstrual stem cell bank's history. (4%) are aware of the meaning.[4]

CONCLUSION

The results showed a strong relationship between place of residence, course year, and age. There is no discernible connection between previous knowledge and religion.

Ethical Clearance

Yenepoya Ethics Committee-2 (YEC) approved my study protocol number YEC2/955 titled **"A Descriptive study to assess knowledge regarding menstrual stem cell banking among nursing students in Mangalore."** on 16/10/2021 under the chairmanship of Dr.Vijaya Hegde.

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Conflict of Interest: Nil

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