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## Descriptive study to assess the knowledge on menstrual stem cell among staff nurses

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### Abstract

**Background:** Stem cells are special human cells that are able to renew and regenerate into many different cell types in the body. In many circumstances, stem cells can be used to treat degenerated tissues to renew. The newly defined adult stem cells are menstrual blood-derived stem cells (MenSCs), giving rise to hopes in clinical application of these cells. They are mesenchymal-like stem cells that can be harvested from human menstrual blood shedding of endometrium monthly.

**Objectives:** To assess the level of knowledge on menstrual stem cell among staff nurses.

**Methodology:** 30 Staff nurses were selected by non-probability convenient sampling technique. Structured self-administered questionnaires used to collect data.

**Results:** Study finding revealed that among 30 staff nurses, only 9 (30%) had moderately adequate knowledge 21 (70%) had inadequate knowledge & none of them had adequate level of knowledge and the mean value was 8.5 and standard deviation 2.6.

**Discussion:** Majority of staff nurses had inadequate knowledge on menstrual stem cell and there was statistically significant association was found with selected demographical variables like gender, marital status, work experience and education of staff nurses.

**Conclusions:** The study concludes that ignorance about menstrual stem cell is prevails highly among staff nurses, igniting them with adequate knowledge is high responsibility because nurses are the key agents in promoting new life saving modalities and treatment in the community.

**Keywords:** knowledge, menstrual stem cell, staff nurses

### Introduction

Stem cells are special human cells that are able to renew and regenerate into many different cell types in the body. In many circumstances, stem cells can be used to treat degenerated tissues to renew. Many researchers recognize that stem cell-based therapies may one day be used to treat serious diseases. Accumulating evidence has demonstrated that menstrual blood stands as a viable source of stem cells [1]. Stem cells have the potential for self-renewal, playing a critical role in replenishment and regeneration of damaged tissues, thereby contributing to the structural and functional maintenance of the organs and tissues. Similar events occur in the endometrium. During each menstrual cycle there is a vast growth of tissue and blood vessels [2]. The discovery of stem cell in the menstrual blood has given a new meaning to menstruation for women who earlier considered menstruation as nothing but a pain feel as necessary evil.

Friedensten *et al.* (1968) were the ones who primarily isolated mesenchymal stem cells (MSCs) from bone marrow (BM) [3]. They were also isolated from other tissues such as adipose tissue [4], umbilical cord blood [5], endometrial tissue [6]. Further innovation in this sector have identified stem cells from menstrual blood. Hossein Faramazi *et al.* (2016) used 5-10 ml of menstrual blood from volunteered healthy fertile women aged between 22-30 years and the study analysis revealed the presence of mesenchymal markers of CD10, CD29, CD73, and CD105. And they conclude that the MenSCs are a real source to design differentiation to epidermal cells that can be used non-invasively in various dermatological lesions and diseases [7]. Thus the mesenchymal-like stem cells that can be separated from menstrual blood which is shedding monthly.

All these study results revolves the regenerative medicines into a new universe, disseminating these information and updating the knowledge on menstrual stem cell among community especially health care worker, who are the main key change agents are essential.

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Jomon CU *et al.* (2016), done a descriptive study among 220 health professionals regarding knowledge and attitude on menstrual stem cell study, majority of them 116 (52.7%) had average and 75 (34.1%) had poor, and only 29 (13.2%) had good knowledge regarding menstrual blood banking and the attitude of female health care professionals shows that 76 (34.5%) has favorable, and 144 (65.5%) has unfavorable attitude towards menstrual blood banking [8]. Hence researcher felt the importance of furthermore studies to get the prevailing knowledge in other regions of India.

### Objective of the study

- To assess the level of knowledge on menstrual stem cell among staff nurses.
- To associate the level of knowledge on menstrual stem cell with their selected demographic variables.

### Material and Method

The study was conducted at selected hospital in Chennai. In this study, quantitative research approach and descriptive research design were adopted. Staff Nurses who were available at the time of data collection were included.

### Data collection procedure

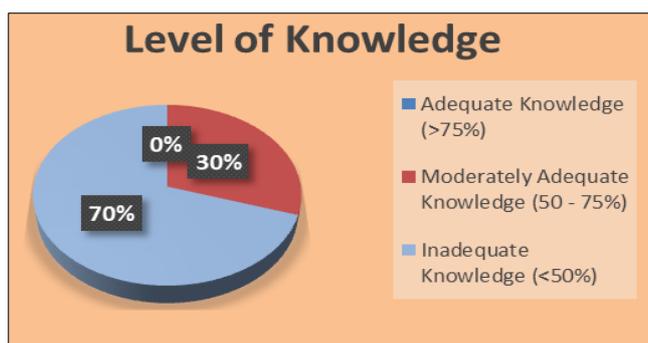
The study was conducted after obtaining Institutional Ethical Clearance from MMM College of Nursing. 30 samples who fulfilled the inclusion criteria was selected, using non-probability purposive sampling technique. A self-introduction was given to the samples and oral consent obtained. Confidentiality assured and administered questionnaire which includes basic knowledge about menstrual stem cell, collection, storage and it usages. Data were collected and analyzed and interpreted by using descriptive and inferential statistics.

### Result and Discussion

The study shows the frequency percentage distribution of demographic variables of staff nurses, regarding age, most of the staff nurses 22 (73.3%) were between 18 and 25 years, and 29 (96.6%) were females, 25 (83.3%) were married, 29 (96.7%) of them got 6 year of work experience and 24 (80%) were qualified with BSc and PBBS (N).

**Table 1:** Frequency and percentage distribution of knowledge on menstrual stem cell among staff nurses

| Level of knowledge                       | Frequency | Percentage |
|--|-----------|------------|
| Adequate Knowledge (>75%)                | 0         | 0          |
| Moderately Adequate Knowledge (51 – 75%) | 9         | 30%        |
| Inadequate Knowledge (≤50%)              | 21        | 70%        |



**Fig 1:** Percentage distribution of level of knowledge on menstrual stem cell

Study finding revealed that among 30 staff nurses, only 9 (30%) staff nurses had moderately adequate knowledge 21 (70%) staff nurses inadequate knowledge & none of them had adequate level of knowledge. The knowledge mean score was 8.5 with standard deviation of 2.6. The analysis revealed that there was statistically significant association was found between level of knowledge with selected demographic variables like, gender ( $\chi^2 = 17.756, P < 0.01$ ), education ( $\chi^2 = 16.361, P < 0.01$ ), work experience ( $\chi^2 = 20.3, P < 0.01$ ) and marital status ( $\chi^2 = 16.22, P < 0.01$ ).

In this study, majority of staff nurses had inadequate knowledge on menstrual stem cell and there was statistically significant association was found with gender, marital status, work experience and education of staff nurses. Hence inculcating information on menstrual stem cell is quiet challenging but necessary in the aspect of life saving regenerative medicine. As menstrual blood contains unique stem cells that express multipotent markers of both adult and embryonic stem cell, encouraging community to identify the importance of menstruation instead of considering menstruation as a waste product.

### Conclusion

The study concludes that ignorance about menstrual stem cell is prevails highly among staff nurses, igniting them with adequate knowledge is the prime responsibility because nurses are the key agents in promoting new life saving modalities and treatment in the community. Menstrual stem cell is obvious regenerative measures which is still in growing stage for multiple pathological condition. Hence nurses must possess the knowledge to create positive attitude toward menstruation among themselves as well as with other women and let them come forward to approach menstrual stem cell banking which will be the next level of initiating to create healthy society.

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