

A Study to Assess the Effectiveness of Nurse Led Education Programme on Menstrual Hygiene among Nursing Students Studying in Selected Nursing College

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Abstract: *Background:* Menstruation and menstrual practice still face many social cultural and religious restrictions, which is a big barrier in the management of menstrual hygiene. In many parts of the country especially in rural part are as girls are not prepared and aware of menstruation so they face many difficulties and challenges at home, school, and workplaces. While reviewing the literature, we found that little, inaccurate, or incomplete knowledge about menstruation greatly hinders personal and menstrual hygiene management. Girls and women have very less or no knowledge about reproductive tract infections caused use to ignorance of personal hygiene during menstruation time. *Method:* The study was conducted to assess the effectiveness of nurse-led education program on menstrual hygiene among nursing students studying in selected nursing college. The aim of the study was to assess the level of knowledge regarding menstrual hygiene among nursing students. The study was conducted by adopting a pre-experimental one-group pre –post-test design 80 students who fulfilled the criteria were selected by convenience sampling. A structured questionnaire was used to assess the level of knowledge of students. The tool was explained in detail and the pre- test was conducted followed by a nurse-led education program for the students and the post-test was conducted on the eighth day with the help of the same structured questionnaire. *Results:* The analysis of the study reveals that the overall mean, improvement showed a paired ‘t’ value of 24.294, which was statistically significant at $p < 0.001$ level, and hence the study concluded that the nurse-led education program on menstrual hygiene was effective.

Keywords: Menstrual Hygiene, Nursing students, menstrual practice, Nurse –led program

1. Introduction

According to the WHO/UNICEF Joint Monitoring Programme 2012, menstrual hygiene management is defined as: “Women and Adolescent girls are using a clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary, using soap and water for washing the body as required and having access to safe and convenient facilities to dispose of used menstrual management materials. They understand the basic facts linked to the menstrual cycle and how to manage it with dignity and without discomfort or fear.”¹

Menstruation is a normal and healthy part of life for most women. Roughly half of the female population -- around 26 percent of the global population are of reproductive age². Menstruation is a natural part of the reproductive cycle, in which blood is lost through the vagina. However, in most parts of the world, it remains taboo and is rarely talked about. As a result, the practical challenges of menstrual hygiene are made even more difficult by various socio-cultural factors. Most women menstruate each month for about two to seven days. Yet, as normal as it is, menstruation is stigmatized around the world. A lack of information about menstruation leads to damaging misconceptions and discrimination and can cause girls to

miss out on normal childhood experiences and activities. Stigma, taboos, and myths prevent nursing students -- and boys -- from the opportunity to learn about menstruation and develop healthy habits³.

Many girls do not have a complete and accurate understanding of menstruation as a normal biological process. Educating girls before their first period -- and, importantly, boys -- on menstruation, builds their confidence, contributes to social solidarity, and encourages healthy habits. Such information should be provided at home and at school. Poor menstrual hygiene can pose physical health risks and has been linked to reproductive and urinary tract infections^{4,5}. Many girls and women have limited options for affordable menstrual materials. Providing access to private facilities with water and safer low-cost menstrual materials could reduce urogenital diseases⁶.

Young girls often grow up with limited knowledge of menstruation because their mothers and other women shy away from discussing the issues with them. Adult women may themselves not be aware of the biological facts or good hygienic practices, instead passing on cultural taboos and restrictions to be observed⁷.

Menstruation is a natural process; however, if not properly managed it can result in health problems. Reports have

suggested links between poor menstrual hygiene and urinary or reproductive tract infections and other illnesses. Further research and robust scientific evidence are needed in this area. The impact of poor menstrual hygiene on the psychosocial well-being of women and girls (eg stress levels, fear and embarrassment, and social exclusion during menstruation) should also be considered⁸.

Results of previous studies done on Knowledge of menstrual hygiene among adolescent girls showed that adolescent girls lacked adequate knowledge about menstrual hygiene^{9, 10, 11, 12, 13}.

Adolescent Girls from rural backgrounds had low levels of knowledge when compared to those living in urban background¹⁴.

Anbesu, E.W, et al, in 2022 conducted a systematic review and meta-analysis on Menstrual hygiene practice and associated factors among nursing students in sub-Saharan Africa and found out that the pooled prevalence of menstrual hygiene practice was low compared to the SDG 6.2 target by 2030¹⁵.

Rachael Adebisi, et al, conducted an intervention study on the practice of menstrual hygiene among adolescents in two selected secondary schools, in Lagos State in 2022. At the end of the study, they concluded that health education is an effective tool in improving the practice of menstrual hygiene among adolescents. The study recommended that health education clubs should be established within schools and managed by public health/school nurses¹⁶.

Our present study aims to study the effectiveness of nurse-led education program on menstrual hygiene among nursing students studying in selected nursing colleges.

2. Materials and Methods

Research Approach

The research approach used for the study was an experimental approach.

Research Design

The design selected for the study is pre-experimental (one group pre-test and post-test design)

Schematic representation:

Group I	Pre-test	Intervention	Post-test
I	O ₁	χ	O ₂

The symbols used

Group I – B.Sc. nursing 2nd and 3rd year students

O1 - Collection of demographic data to assess pre-test level of knowledge regarding menstrual hygiene.

χ – Implementing a nurse-led education program regarding menstrual hygiene.

O2 – Assess post-test level of knowledge regarding menstrual hygiene.

Variables

Independent Variables

The independent variable of this study was a nurse-led education program regarding menstrual hygiene.

Dependent Variables

The dependent variable of this study was knowledge of menstrual hygiene among college students.

Setting of the study

The study was conducted at Indira College of Nursing, Tamilnadu, India.

Population

The population of the study was B.sc nursing II & III year students

Sample

In this study, the sample was comprised of 80 students

Sample Selection Criteria

Inclusion Criteria

- 1) The students who are present during the period of data collection.
- 2) B.Sc. (N) II & III Year students from Indira College of Nursing, Tamilnadu, India

Exclusion Criteria

- 1) Those who are not present at the time of study.

Sampling Technique

A convenience sampling technique was adopted to select the study.

Data Collection Tool

The tool consists of the following sections.

Section-A: Socio-Demographic Data

Section-B: Structured knowledge questionnaire.

Scoring Procedure

Section – A: Socio-Demographic Data

It consists of details regarding age, residential area, religion, family income monthly, socioeconomic status, source of information, age at menarche, duration of menstruation(in days), what do you use during periods and how is your menstrual cycle.

Section – B:

A structured knowledge questionnaire is used to assess knowledge regarding menstrual hygiene. A scoring key was prepared for each correct answer the score 'one' was given and for wrong answer, the score 'Zero' was given. The total score was 30. The questionnaire was given to the sample.

The level of knowledge is interpreted as follows

Level of knowledge	Score	Percentage
Inadequate	≤15	50%
Moderate	16 – 23	51-75%
Adequate	24 – 30	>76

Content Validity

The content validity of the tool was obtained from obstetricians, statisticians, and suggestions; guidance and modification were incorporated into the tool.

Reliability of the Tool

The reliability of the tool was established through the test-retest method.

Ethical Consideration

Permission from the institutional Ethical Review Board of Indira College of Nursing was obtained before conducting the study informed consent was taken from the participants prior to the data collection. Every participant was respected at most. An adequate explanation was provided regarding the potential risks and benefits of the study.

Data Collection Procedure

Permission was taken from the Principal of Indira College of Nursing. The purpose of the study was explained to the nursing students and consent was obtained from them. On the first day, a pretest (30mts) was conducted by using a structured knowledge questionnaire. Following the pre-test, a Nurse-led education program on menstrual hygiene was conducted on the same day. The posttest (30 minutes) was conducted by using the same structured knowledge questionnaire on the eighth day for the same students following the same procedure.

Plan for Data Analysis

Descriptive Statistics

A computation of frequencies and percentages was used to analyze socio-demographic data. A computation of the mean will be used to assess the level of knowledge regarding menstrual hygiene.

Inferential Statistics

Paired t-test was used to evaluate the effectiveness of a nurse-led education program on menstrual hygiene. Chi-square test was used to find out the association between socio-demographic variables and pre and post-test knowledge scores.

3. Discussion

Section A: Description of Demographic variables.

Table 1: Frequency and percentage distribution of demographic variables among nursing students, n=80

S.No.	Demographic data	Frequency	Percentage
1	Age in years		
	a) 17years	56	70%
	b) 18years	22	27.50%
	c) 19years	2	2.50%
2	Residential area		
	a) Urban	20	25%
	b) Rural	54	67.50%
	c) Suburban	6	7.50%
3	Religion		
	a) Hindu	67	83.75%
	b) Christian	12	15%
	c) Muslim	1	1.25%
	d) Others	0	0%
4	Family income monthly		
	a) Less than Rs.20,000	41	51.25%
	b) Rs.20,000-40,000	18	22.50%

	c) Rs.40,000-60,000	12	15%
	d) More than Rs.60,000	9	11.25%
5	Socioeconomic status		
	a) Lower	20	25%
	b) Medium	58	72.50%
	c) Higher	2	2.50%
6	Source of information		
	a) Mother	69	86.25%
	b) Media	2	2.50%
	c) peer Group	7	8.75%
	d) Relatives	2	2.50%
7	Ageatmenarche		
	a) Below12	6	7.50%
	b) 12-13years	27	33.75%
	c) 13-14years	29	36.25%
	d) 14-15years	15	18.75%
	e) Above15years	3	3.75%
8	Duration of menstruation (in days)		
	a) 3-5days	68	85%
	b) 6-8days	10	12.50%
	c) 8-10days	2	2.50%
9	What do you use during periods?		
	a) Cloth pads	2	2.50%
	b) Sanitary pads	78	97.50%
10	How is your menstrual cycle?		
	a) Regular	67	83.75%
	b) Irregular	13	16.25%

Table 1 shows that about 56(70%) of the participants belong to the age group of 17 years, 22(27.5%) belong to the age group of 18 years, and 2(2.5%) belong to the age group of 19 years. Regarding residential area majority of them 54(67.50%) live in rural area, 6(7.5%). In the total study population about 67(83.75%) are Hindu, 12(15%) are Christian and 1(1.25%) Muslim. Regarding socio-economic status about 20(25%) belong to lower socio-economic status, 58(72.50%) to medium socio-economic status, and 2(2.50%) to higher socioeconomic status. For the majority of the participants source of information was from their mother 69(86.25%). 36.25% of the participants attended menarche at the age of 13-14 years, whereas 33.75% attended at 12-13 years 85% of the students had 3-5 days duration of mensus and 83.75% had a menstrual cycle.

Section B: Pre-test and post-test knowledge regarding menstrual hygiene among nursing students.

Table 2: Frequency and percentage distribution of pre-test knowledge regarding menstrual hygiene among nursing students, n=80

Category	Knowledge	
	Frequency	Percentage
Inadequate	32	40%
Moderate	48	60%
Adequate	0	0%
Total	80	100%

Table 2 shows that the majority of nursing students (60%) had moderate knowledge regarding menstrual hygiene and 40% of nursing students had inadequate knowledge.

Table 3: Frequency and percentage distribution of posttest knowledge regarding menstrual hygiene among nursing students, n=80

Category	Knowledge	
	Frequency	Percentage
Inadequate	0	0%
Moderate	2	2.5%
Adequate	78	97.5%
Total	80	100%

Table 3: shows that the majority of 97.5% of nursing students had adequate knowledge regarding menstrual hygiene and only 2.5% of nursing students had moderately adequate knowledge.

Section C: Comparison between pre-test and post-test knowledge scores regarding menstrual hygiene among nursing students

Table 4: Comparison of Mean, SD, and Paired ‘t’ value of pre-test and post-test knowledge scores regarding menstrual hygiene among nursing students, N=80

Knowledge	Mean	Mean Improvement	Standard Deviation	‘t’ Value
Pretest	10.96	10.96	3.51	t=24.294
Post Test	27.01		1.61	P = 0.001, S

***p < 0.001, S- Significant

Table 4. When comparing the pre-test and post-test knowledge, the pre-test mean was 16.05 with a standard deviation of 3.51 and the post-test mean was 27.01 with a standard deviation of 1.61. The calculated ‘t’ value was 24.294 which was highly significant at p<0.001 level. The overall mean improvement value was 10.96 which shows a significant rise in the knowledge level of study participants from 16.05 to 27.01 in the pre and post-test respectively which is suggestive of the effect of nurse-led education programs on menstrual hygiene.

Section D: Association of post-test level of knowledge on menstrual hygiene with their socio-demographic variables among nursing students.

S NO	Demographic Variable	Adequate	Moderate	Chi-square value
		n (%)	n(%)	
1	Age in years			$\chi^2=8.515$ d.f=2 P=0.500, N.S
	a) 17 years	55 (68.75)	1(1.25)	
	b) 18 years	21(26.25)	1(1.25)	
	c) 19 years	2(2.5)	0(0)	
2	Residential area			$\chi^2=9.891$ d.f=2 P = 0.500 N.S
	a) Urban	19 (23.75)	1(1.25)	
	b) Rural	53(66.25)	1(1.25)	
	c) Suburban	6(7.5)	0(0)	
3	Religion			$\chi^2=6.677$ d.f=2 P=0.900 N.S
	a) Hindu	63(78.75)	2(2.5)	
	b) Christian	14(17.5)	0(0)	
	c) Muslim	1(1.25)	0(0)	
	d) Others	-	-	
4	Family income monthly			$\chi^2=6.677$ d.f=2 P=0.900 N.S
	a) Less than Rs.20,000	40(50)	2(2.5)	
	b) Rs.20,000- 40,000	19(23.75)	0(0)	
	c) Rs.40,000-60,000	12(15)	0(0)	
	d) More than Rs.60,000	9(11.25)	0(0)	
5	Socio economic status			$\chi^2=9.957$ d.f=2 P = 0.500 N.S
	a) Lower	19(23.75)	1(1.25)	
	b) Medium	57(71.25)	1(1.25)	
	c) Higher	2(2.5)	0(0)	
6	Source of information			$\chi^2=13.892$ d.f=3 P = 0.500 N.S
	a) Mother	66(82.5)	2(2.5)	
	b) Media	3(3.75)	0(0)	
	c) Peer Group	7(8.75)	0(0)	
	d) Relatives	2(2.5)	0(0)	
7	Age at menarche			$\chi^2=44.162$ d.f=4 P = 0.025 N.S
	a) Below 12	6(7.5)	0(0)	
	b) 12 -13 years	27(33.75)	0(0)	
	c) 13 -14 years	28(35)	1(1.25)	
	d) 14 -15 years	15(18.75)	0(0)	
	e) Above 15 years	2(2.5)	1(1.25)	
8	Duration of menstruation (in days)			$\chi^2=11.600$, d.f=2 P = 0.900 N.S
	a) 3-5 days	66(82.5)	1(1.25)	
	b) 6-8 days	10(12.5)	1(1.25)	
	c) 8-10 days	2(2.5)	0(0)	
9	What do you use during Periods?			$\chi^2=20.039$, d.f=1

	a) Cloth pads	1(1.25)	1(1.25)	P = 0.001
	b) Sanitary pads	77(96.25)	1(1.25)	N.S
10	How is your menstrual cycle?			$\chi^2 = 6.936$, d.f=1 P = 0.500, N.S
	a) Regular	65(81.25)	1(1.25)	
	b) Irregular	13(16.25)	1(1.25)	

*p<0.05, **p<0.01, ***p<0.001, S – Significant, N.S – Not Significant

Table – 5 shows the association of mean improvement knowledge scores of nursing students with selected demographic variables using chi-square value. With regard to the association of mean improvement knowledge score among the nursing students with selected demographic variables showed no statistically significant association with, age, residential area, religion, family income monthly, socio-economic status, sources of information, age at menarche, duration of menstruation, during the period used material and type of menstrual cycle.

4. Results

The first objective was to assess the pre-test knowledge score and post-test knowledge score on menstrual hygiene among nursing students. Pre-test data analysis shows that the majority of nursing students (60%) had moderate knowledge regarding menstrual hygiene and 40% of nursing students had inadequate knowledge. Whereas the post-test scores showed that 97.25% of the students had adequate knowledge.

The second objective was to assess the effect of nurse-led education program on menstrual hygiene among nursing students. Data analysis showed that the mean scores of the Pretest and Post-test of nursing students regarding menstrual hygiene were 16.05 (SD=3.51) and 27.02 (SD=1.61) respectively. The post-test mean scores were higher than the pre-test mean scores. The Paired 't' value is 24.294. The calculated value is higher than the tabulated value. So nurse-led education program was effective in improving the knowledge of nursing students regarding menstrual hygiene. This finding of the study is supported by various studies conducted on similar topics which concluded that education programs on menstrual hygiene were effective in improving knowledge levels among adolescent girls^{17, 18, 19, 20}.

The third objective was to find out the association between the post-test knowledge scores with selected demographic variables of the study participants: Chi-square values were calculated to find out the association between the knowledge regarding menstrual hygiene among nursing students with age, residential area, religion, family income, socio-economic status, sources of information, and age at menarche. Therefore there was no significant association between the demographic variables and their knowledge regarding menstrual hygiene among nursing students.

5. Conclusion

Current study was conducted to study the effectiveness of nurse-led education program on menstrual hygiene among nursing students. This study concluded that education programs on menstrual hygiene can create a great impact on improving knowledge levels on menstrual hygiene and practices needed to maintain proper menstrual health and

hygiene. Menstrual health and hygiene interventions can help Adolescents overcome many obstacles. Not only do they fulfill the unmet demand for menstrual hygiene products; but they also protect dignity, build confidence, and strengthen sexual and reproductive health, particularly among adolescents²¹.

Conflict of Interest:

The authors have no conflicts of interest regarding this investigation.

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