Original Research Article

Effectiveness of self instructional module on knowledge of menstrual disorders among adolescent girls

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ABSTRACT

Menstruation is a normal monthly cycle in women. Women between puberty and menopause experiences menstruation. It can start between the age of 8-13 and last until between 45-55 years. Though menstruation is normal, some women experience dilemma during their monthly period like, menstrual cramps, or dysmenorrhoea or other menstrual disorders. The menstrual cramps may be severely painful and can interfere with regular activities, sometimes leading to absenteeism in school or in other functions A self instructional module will help the adolescent girls to gain knowledge about menstrual disorders and to seek medical advice promptly whenever needed. The present study was undertaken to evaluate the effectiveness of self instructional module on knowledge of menstrual disorders among adolescent girls.

Materials and Methods: This study made use of an evaluative approach with a one group pre-test post-test design. The sample for the study sample comprised of 60 adolescent girls. A disproportionate stratified random sampling technique was used to select 30 I PUC and 30 II PUC adolescent girls. Students were selected randomly by lottery method from each stratum of I PUC and II PUC. The tool and SIM were validated by 10 experts. Pre-testing and reliability of the tool was established prior to the pilot study. Pilot study was conducted among twelve adolescent girls. This gave a basis for the investigator to conduct the actual study. The actual study was conducted among 60 adolescent girls. Following the pre-test, SIM was administered and post-test conducted seven days after the administration of SIM. The obtained data was analyzed in terms of the objectives and hypotheses using descriptive and inferential statistics.

Interpretation: The findings of the study showed that SIM is an effective teaching strategy to increase the knowledge of adolescent girls on menstrual disorders.

Results: The findings of the study proved that adolescent girls lacked knowledge on menstrual disorders. The SIM given by the investigator helped the adolescent girls to improve their knowledge. The effectiveness of SIM was tested in terms of gain in knowledge and the findings showed that it was statistically significant at 0.05 level of significance. The findings of the study proved that SIM is an effective strategy in improving the knowledge of the adolescent girls. All the subjects had a gain in knowledge compared to their pre-test knowledge scores. On the whole, carrying out the present study was really an enriching experience to the investigator. It also helped a great deal to explore and improve the knowledge of the researcher and the respondents. The constant encouragement and guidance by the guide, co-operation and interest of respondents in the study contributed to the fruitful completion of the study.

1. Introduction

Nature and nurture are two important factors in the flowering of an individual's personality. Like a budding flower, the adolescent girl needs the nurture of a caring

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environment at home, supported by a friendly, empathetic and sensitive health system to help her to bloom and blossom into healthy womanhood. It is a tragedy of our times that in developing countries including India some of these blossoms are nipped in the bud. Among the various problems of adolescents, reproductive health issues stand on the threshold between childhood and womanhood.[1,2]

Adolescent girls contribute to 10% of total population and 20% of female population. They have a wide spectrum of gynecological problems; of which 75% is of menstrual disturbances, all over the world.[3] Adolescent milestones form the basis of a young immature girl transforming into a mature adult woman. Though the milestones constitute secondary sexual characteristics such as breast development, pubic hair growth, growth spurt, it is without doubt that menarche is of singular and paramount importance to the adolescent girl.[4]

With an estimated one billion adolescents alive today, the world is experiencing the largest adolescent population in history. As a result, adolescent reproductive health is an increasingly important component of global health. The adolescents form a significant proportion of the population of the country. In any country adolescents represent a major potential human resource for the overall development of a Nation. However, they need to be healthy people. The most frequent disorder in females involves menstrual disorders. Menstruation is an ongoing process, throughout half of a woman's life, it affects her self-image significantly.[5] An irregularity can exert a major negative influence on the personality and on daily activities. Therefore it is a major health concern requiring as much time and attention as that given to other concerns. In the total population, 20% of females have various gynecological problems, in that 75% is of menstrual disturbances all over the world.[6,7]

On the basis of above literature as well as from the experience of the investigator with the students and their responses it was clear that the knowledge about the menstrual problems is inadequate.[8] As the adolescent reaches puberty, they need honest, clear and thorough explanation of their bodily changes. Otherwise, they may be confused or reluctant to accept it.[9] This has motivated the investigator to conduct a study to provide an access to the adolescent girls to receive information regarding menstrual disorders.

2. Statement of the Problem

"Effectiveness of self instructional module on knowledge of menstrual disorders among adolescent girls in a selected P U colleges of Indore, MP."

3. Objectives

1. To determine the level of knowledge of adolescent girls on menstrual disorders using structured knowledge questionnaire.
2. To develop and validate self instructional module on menstrual disorders.
3. To find the effectiveness of self instructional module in terms of gain in post test knowledge score.
4. To find the association between the pre-test knowledge score and the selected demographic variables (religion, monthly income of the family, education of the father, education of the mother).

3.1. Hypothtesis

The hypotheses will be tested at 0.05 level of significance.

H_1: The mean post test knowledge score of the subjects will be significantly higher than the mean pre test knowledge score.

H_2: There will be significant association between the pre test knowledge score and selected demographic variables (religion, monthly income of the family, education of the father, education of the mother).

3.2. Assumptions

1. Menstrual disorders are common among adolescent girls.
2. Adolescent girls will have some knowledge on menstrual disorders.

4. Materials and Methods

4.1. Research approach

An evaluative approach was used for the study to test the effectiveness of Self Instructional Module prepared for adolescent girls. An evaluative research is an applied form of research that involves finding out how well a programme, practice, procedure or policy is working.

4.2. Research design

Quasi experimental one group pre-test post test design ($O_1 X O_2$) was adopted for the study.

4.3. Independent variable

In this study the independent variable is the self-instructional module on menstrual disorders.

4.4. Dependent variable

In this study dependent variable is knowledge of adolescent girls on menstrual disorders.

4.5. Extraneous variable

In this study the variables such as type of family, educational status of the parents and source of information are treated as extraneous variables.

4.6. Setting of the study

The study was conducted in the selected Pre-University College of Indore, which is 2 km away from the National Highway. It is a pre-university college consisting of I PUC and II PUC students with Science and Arts group with strength of 115 students in I PUC and 75 in II PUC. It is a co-education college. The college strength is 240 students.

Out of 190 adolescent girls, 60 adolescent girls were selected for the study.

4.7. Population

The population of the study consists of the adolescent girls who are studying in the I PUC and II PUC classes in the selected Pre-University College of Indore.

4.8. Sample and sampling technique

The sample for the study comprised of 60 adolescent girls. A disproportionate stratified random sampling technique was used to select 30 I PUC and 30 II PUC adolescent girls.

4.9. Inclusion criteria

1. Adolescent girls between the age group of 16-18 years studying in IPUC and II PUC of selected college.
2. Adolescent girls who are willing to participate in the study.

4.10. Exclusion criteria

1. Adolescent girls who are not available in the college during the period of data collection.

4.11. Data collection instruments

A structured knowledge questionnaire was used for the data collection. A structured questionnaire is a method of gathering self report information from respondents through self-administration of questionnaire in a paper and pencil format.

4.12. Development of the tool

A structured knowledge questionnaire (annexure -14) was thought to be appropriate for assessing the knowledge of adolescent girls based on the assumption that they have some knowledge on menstrual disorders. The tool was prepared based on the objectives of the study.

The tool used to collect the data consisted of;

Part I-Baseline characteristics.

Part II-Knowledge questionnaire on menstrual disorders.

The questionnaire on menstrual disorders was developed after review of literature on relevant topics and consultation with subject experts and guide.

The following steps were undertaken to prepare the final tool.

4.13. Reliability of tool

The tool was tested for the reliability among 10 adolescent girls in the selected P.U College, Indore (M.P.). The internal consistency was computed using Spearman's Brown Prophecy formula with split half technique. Reliability co-efficient was found to be 0.82. The tool was found to be reliable. No modification was made.

4.14. Pilot study

The investigator obtained permission from the principal of the college prior to the study. The data was collected from 10 adolescent girls.

Pilot study was conducted in a similar way as the final data collection. On the first day the pre-test was conducted by a structured knowledge questionnaire after which the SIM was administered. Adolescent girls were asked to go through the SIM and were informed that post test would be conducted after seven days. The post test was conducted on the seventh day, among the same adolescent girls using the same structured knowledge questionnaire. Each written test was completed within 30 minutes. Paired 't' test was used to find the significant difference between the pre test knowledge score and post test knowledge sore. Result showed the significant difference between the mean pre test (11) and post test (18.7) knowledge score which indicated SIM was effective in increasing the knowledge of adolescent girls on menstrual disorders. Data analysis was done using descriptive and inferential statistics.

The tool and the SIM were found feasible and practicable. No further changes were done after the pilot study in the tool and the SIM. The investigator then proceeded for the main study.

4.15. Procedure for data collection

The investigator obtained written permission from the Principal of selected P.U. College, Indore. The data collection period extended 1 month at 3 pm - 4 pm as per the convenience of the college authority and respondents. The purpose of the study was explained to them and confidentiality was assured to all the respondents. The adolescent girls were selected by stratified random sampling.

4.16. Data analysis and Interpretation

Table 1: Frequency and percentage distribution of adolescent girls according to the age N = 60

Variable	Frequency (f)	Percentage (%)
Age (in years)		
a. 16	30	50.0
b. 17	30	50.0
c. 18	-	-

Table 2: Frequency and percentage distribution of adolescent girls on information regarding menstruation N = 60

Variable	Frequency	Percentage
Educational status		
a. I PUC	30	50.0
b. II PUC	30	50.0

Table 3: Frequency and percentage distribution of adolescent girls on information regarding menstruation N = 60

Variable	Frequency (f)	Percentage (%)
Information regarding menstruation.		
a. Yes	54	90.0
b. No	6	10.0

Table 4: Frequency and percentage distribution of adolescent girls according to duration of menstrual flow. N = 60

Variable	Frequency (f)	Percentage (%)
Duration of menstrual flow.		
a. < 3 days	3	5.0
b. 3-5 days	25	41.7
c. 5-7 days	24	40.0
d. > 7 days	8	13.3

4.16.1. Section II: Knowledge of adolescent girls on menstrual disorders

Data reveals that more than half (55%) of the adolescent girls had average knowledge on menstrual disorders, only 15% of the subjects had good knowledge in the pre test.

Table 5 data indicates that area-wise overall knowledge of adolescent girls on menstrual disorders was average (mean percentage: 44.56). The knowledge was average in menarche (mean percentage: 48.89), menstruation (mean percentage: 56.19), dysmenorrhoea (mean percentage: 56.67), and general aspects (mean percentage: 43.33) but was poor in amenorrhoea (mean percentage: 34.17), Oligomenorrhoea (mean percentage: 24.44) menorrhagia (mean percentage: 20.56), and polymenorrhoea (mean percentage: 38.33).

4.16.2. Section III: Effectiveness of self-instructional module on menstrual disorders

The SIM on menstrual disorders was distributed to the adolescent girls and post-test was conducted after seven days to find the effectiveness of the SIM in increasing the knowledge of the adolescent girls.

Table 6 data presented that effectiveness of the SIM on menstrual disorders was evident in the post-test scores of the adolescent girls. While in the pre-test majority of the adolescent girls had average knowledge (55%), in the post-test majority of the adolescent girls had good knowledge (56.7%). In the pretest none of the adolescent girls scored very god score while in the post test 6.7% of the adolescent girls scored very good.

Data reveals that among the adolescent girls, the knowledge score of 17 (28.3%) adolescent girls ranged from 14-16 (76.7%) in the pre-test, however, in the post-test 18 (88.3%) subjects scored 20-22.

Table 7 data shows that the post-test ogive lies to the right of the pre-test Ogive over the entire range. The 50th percentile shows that the median score of post-test (19) was higher than the median score of pre-test (14). This indicates that the post-test knowledge score was consistently higher than pre-test score.

Table 8 data presented that in the post-test, range was 11-25, mean was 18.33, and SD was 3.672 and in the pre-test range was 5-19, mean was 13.37, and SD was 3.742. The mean in the pre test was 13.37 while it rose to 18.33 in the post test.

Table 9 data indicates that the mean percentage knowledge score of the pre-test was maximum in the area of 'dysmenorrhoea' (56.67%) and minimum in the area of 'menorrhagia' (20.56%), whereas in the post-test the maximum mean percentage score was seen in the area of 'menarche' (76.39%) and minimum in the area of 'menorrhagia' (34.44%).

The following null hypothesis was formulated to test the significance:

H_{01}: There will be no significant difference between the mean pre-test and post-test knowledge score of adolescent girls on menstrual disorders at 0.05 level of significance.

Table 10 data shows that the mean post-test knowledge score (18.33) was higher than the mean pre-test knowledge score (13.37). The computed 't' value (t_{59}=7.80) was higher than the table value (t_{59}=1.67) at 0.05 level of significance. Hence, the null hypothesis was rejected and research hypothesis was accepted and it was inferred that the mean difference between pre- and post-test knowledge score was statistically significant. This indicates that the SIM was effective in increasing the knowledge of adolescent girls on menstrual disorders.

4.16.3. Section IV: Association between pre-test knowledge score and selected baseline variables

This section presents the findings of the association between pre-test knowledge score and selected variables. To test the association between the two, the following null hypothesis was formulated:

H_{02}: There will be no significant association between the pre-test knowledge score and selected baseline variables.

Table 11 data shows that there was no significant association between the pre-test knowledge score and selected baseline variables at 0.05 level of significance except in 'monthly income of the family' (c^2_3=8.813) and 'education of the father' (c^2_3=11.009). Hence, the null

Table 5: Area-wise pre-test knowledge of adolescent girls on menstrual disorders N = 60

Area	Score				Level of knowledge
	Min.	Max.	Mean	Mean %	
Menarche	0	5	2.93±1.274	48.89	Average
Menstruation	0	6	3.93±1.133	56.19	Average
Dysmenorrhoea	0	5	2.83±1.564	56.67	Average
Amenorrhoea	0	2	0.68±0.701	34.17	Poor
Oligomenorrhoea	0	2	0.73±0.686	24.44	Poor
Menorrhagia	0	2	0.62±0.666	20.56	Poor
Polymenorrhoea	0	2	0.77±0.673	38.33	Poor
General aspects	0	2	0.87±0.676	43.33	Average
Overall	5	19	13.37±3.742	44.56	Average

Table 6: Distribution of adolescent girls according to the grading of pre- and post-test knowledge score (N = 60)

Grading	Pre-test		Post-test	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Very good	-	-	4	6.7
Good	9	15.0	34	56.7
Average	33	55.0	18	30.0
Poor	18	30.0	4	6.7

Maximum Score = 30

Table 7: Frequency, cumulative frequency, and cumulative percentage distribution of pre- and post-test knowledge score of adolescent girls (N = 60)

Knowledge score	Pre-test			Post-test		
	f	Cf	cf%	f	cf	cf%
5-7	5	8.3	8.3			
8-10	11	18.3	26.7			
11-13	13	21.7	48.3	7	11.7	11.7
14-16	17	28.3	76.7	11	18.3	30.0
17-19	14	23.3	100.0	17	28.3	58.3
20-22				18	30.0	88.3
23-25				7	11.7	100.0

Maximum score = 30

Table 8: Range, mean, and standard deviation of pre-test and post-test knowledge score of adolescent girls on menstrual disorders (N = 60)

Knowledge level	Range	Mean	Standard deviation
Pre-test	5-19	13.37	3.742
Post-test	11-25	18.33	3.672

Maximum score = 30

Table 9: Area-wise mean, SD, mean percentage with 't' value of pre-test and post-test knowledge score of adolescent girls on menstrual disorders (N = 60)

Area	Pre-test		Post-test		t value
	Mean±SD	Mean %	Mean±SD	Mean %	
Menarche	2.93±1.274	48.89	4.58±0.926	76.39	7.97*
Menstruation	3.93±1.133	56.19	5.15±1.549	73.57	5.33*
Dysmenorrhoea	2.83±1.564	56.67	3.18±1.097	63.67	1.52
Amenorrhoea	0.68±0.701	34.17	1.03±0.780	51.67	2.50*
Oligomenorrhoea	0.73±0.686	24.44	1.25±1.099	41.67	3.06*
Menorrhagia	0.62±0.666	20.56	1.03±0.920	34.44	3.49*
Polymenorrhoea	0.77±0.673	38.33	0.83±0.615	34.44	0.59
General aspects	0.87±0.676	43.33	1.27±0.756	41.67	3.17*
Overall	13.37±3.742	44.56	18.33±3.672	63.33	

t_{59} =1.670, $p<0.05$, significant*, Maximum score = 30

Table 10: Mean, median difference, standard deviation, and 't' value of pre- and post-test knowledge score of adolescent girls (N = 60)

Group	Mean knowledge score		Mean difference	Standard deviation		t value
	Pre-test	Post-test		Pre-test	Post-test	
Adolescent girls	13.37	18.33	4.97	3.742	3.672	7.80*

$t_{59} = 1.670$, $p<0.05$ * Significant

Table 11: Association between pre-test knowledge score of adolescent girls and selected demographic variables N = 60

Variable	Knowledge score		c^2
	≤ mean	> mean	
1. **Religion**			
a. Hindu	19	26	2.692
b. Others	10	5	
2. **Monthly income of the family (Rs.)**			
a. < 2000	7	15	
b. 2000-5000	15	5	8.813*
c. 5000-10000	3	4	
d. > 10000	4	7	
3. **Education of the mother**			
a. Primary or below	8	5	
b. Secondary	11	14	1.169
c. Higher secondary and above	10	12	
4. **Education of the father**			
a. Primary or below	7	3	
b. Secondary	6	9	11.009*
c. Higher secondary	15	9	
d. Degree or above	1	10	

$c_{(1)}{}^2 = 3.84$, $c_{(2)}{}^2 = 5.99$, $c_{(3)}{}^2 = 7.81$; $P<0.05$, *Significant

hypothesis was rejected for those two variables and accepted for the rest.

5. Conclusion

The aim of this study was to assess the knowledge of adolescent girls on menstrual disorders as well as to provide information to them about menstrual disorders. The information was given with the aid of SIM which included various aspects such as menarche and menstruation, dysmenorrhoea, amenorrhea, oligomenorrhoea, menorrhagia and polymenorrhoea which will help the adolescent girls to improve their knowledge and to adopt a healthy lifestyle.

6. Summary

The overall experience of conducting this study was satisfying one, as there was good co-operation from adolescent girls and college authorities. The respondents were satisfied and happy with the information they received. The study was a new learning experience for the investigator. The study reveals that SIM could be used as an effective teaching strategy.

7. Source of Funding

None.

8. Conflict of Interest

None.

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