International Journal of Midwifery and Nursing Practice

E-ISSN: 2663-0435
P-ISSN: 2663-0427
www.nursingpractice.net
IJMNP 2023; 6(1): 28-34
Received: 09-11-2022
Accepted: 19-12-2022

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Impact of comprehensive interventional package on behavioural outcomes regarding management of menstrual problems among adolescents: A pilot study

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DOI: https://doi.org/10.33545/26630427.2023.v6.i1a.132

Abstract
Introduction: Dysmenorrhea is the most common gynecologic disorder among female adolescents, with a prevalence of 60% to 93%. Primary dysmenorrhea, painful menstruation without pelvic abnormalities, may be associated with vomiting, fatigue, back pain, headaches, dizziness, and diarrhea.
Objective: The aim of the present study is to determine the Impact of comprehensive interventional package on behavioural outcomes regarding management of menstrual problems among adolescents from selected educational institutions.
Methodology: The quantitative research approach and true experimental Pre-test Post-test control group design was used in the study. Sample size consisted of 60 (30 in each group) and recruited in the study by using Simple random sampling technique.
Results: There is no significant changes were observed in any of the subscales between both groups, were found equal in physiological, psychological and behavioural symptoms at pre-intervention level but instantaneously following the comprehensive interventional package, the adolescent girls in the experimental group had significantly increased self-esteem and improvement in management of Premenstrual problems and even class abseeentism and academic performance has improved so that Behavioural outcome variables of adolescents were upgraded after implementation of comprehensive interventional package from baseline to 3 months follow-up.
Conclusion: The comprehensive intervention package proved to be effective in reduction of menstrual symptoms and also clarifying their doubts regarding menstrual problems.

Keywords: Menstrual problems, dysmenorrhea, vomiting, fatigue, back pain, headaches, dizziness

Introduction
Premenstrual syndrome is a disorder that affects the lives of millions of women from menarche to menopause. This syndrome consists of a wide range of physical, psychological, and behavioral symptoms that do not result in any organic disease, occur regularly during the luteal phase of each menstrual cycle, and resolve as menstruation ends.
Dysmenorrhea is the most common gynecologic disorder among female adolescents, with a prevalence of 60% to 93%. Primary dysmenorrhea, painful menstruation without pelvic abnormalities, may be associated with vomiting, fatigue, back pain, headaches, dizziness, and diarrhea.
The pooled prevalence of reproductive age women affected with PMS worldwide amounts to 47.8%.Studies from India reported the prevalence of dysmenorrhea range between 50 to 87.8%. A significantly greater proportion of participants with severe menstrual pain reported school absence, decreased test-taking skills, and limited socialization with friends and sports participation than those with mild menstrual pain.
The researcher has observed during her past experience that many adolescents have minimal knowledge about management of PMS and primary dysmenorrhea, and adverse effects affecting their studies and daily activities. Therefore, in the pursuit all the above facts and the experiences of the researcher, she felt that there is need to develop and evaluate the effectiveness of Comprehensive Nursing Intervention Package on reducing Premenstrual Symptoms, Primary dysmenorrhea among adolescent girls in India set-up.

Objectives of the study
To determine the Impact of comprehensive interventional package on behavioural outcomes regarding management of menstrual problems among adolescents from selected educational institutions.

Methods

Research approach: The quantitative research approach

Research design: True experimental Pre-test Post-test control group design

Setting of the study: Selected educational institutions of Dharwad

Sample size: 60 (30 in each group)

Sampling Technique: Simple random sampling technique

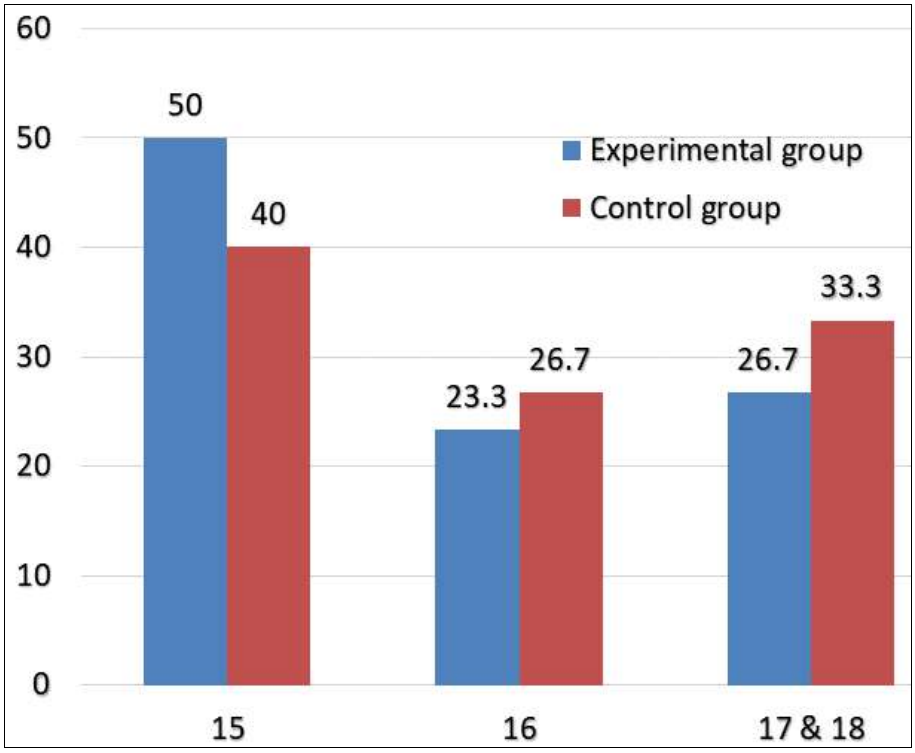
Results of the study

Section I: Demographic characteristics of adolescent girls.

Table 1: Displaying the proportion and incidence dispersion of responders by age

Age (Years)	Experimental group N=30		Control group N=30	
	Frequency	Percentage	Frequency	Percentage
15	15	50	12	40
16	7	23.3	8	26.7
17 & 18	8	26.7	10	33.3
Total	30	100	30	100

The data presented in Graph No 1 and Table No 1 indicates that majority of the sample 15(50%) are aged 15 years, 8(26.7%) of the samples are aged 17 and 18 years and least percentage 7(23.3%) of 16 years was found in experimental group and majority of 12(40%) samples are aged 15 years, 10(33.3%) of samples are aged 17 and 18 years and least percentage was found 8(26.7%) in control group.

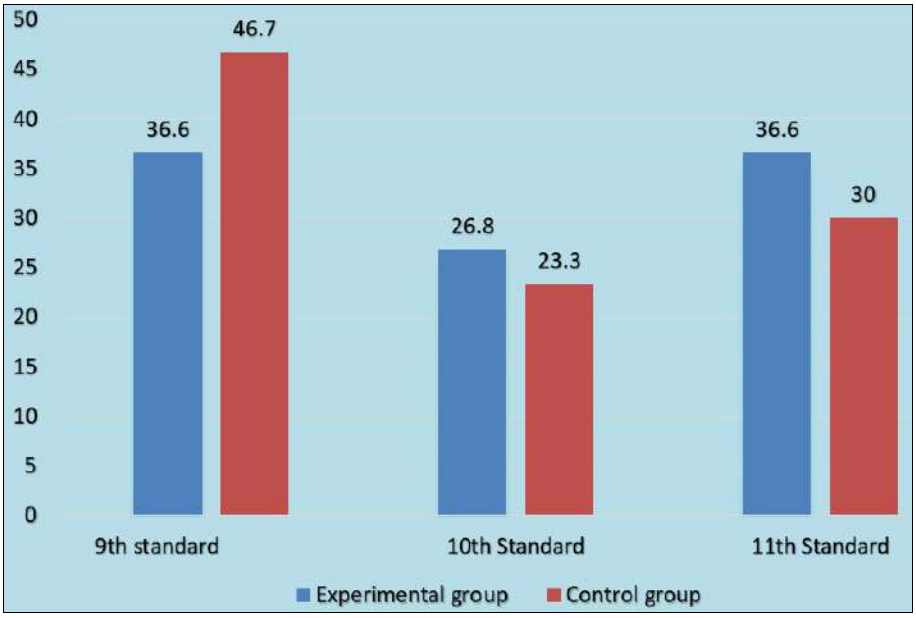


Graph 1: A bar graph displaying the participants' percentage dispersion by age N=60

Table 2: Displaying the proportion and incidence dispersion of responders by their study standards N=60

Standard	Experimental group N=30		Control group N=30	
	Frequency	Percentage	Frequency	Percentage
9th standard	11	36.6	14	46.7
10th Standard	8	26.8	7	23.3
11th Standard	11	36.6	9	30
Total	30	100	30	100

The data presented in Graph No 2 and Table No 2 indicates that majority 11(36.6%) of samples are studying in 9thstd and 11th std but remaining 8(26.8%) of samples are studying in 8th std in experimental group and 14(46.7%) of samples in control are studying in 9th standard and 9(30%) of samples are studying in 11th std and remaining 7(23.3%) of samples are studying in 10th std in control group

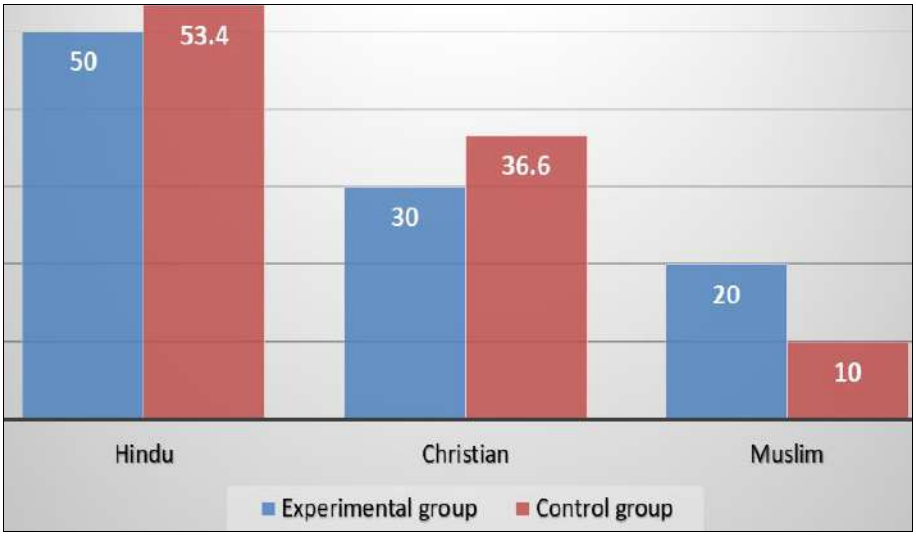


Graph 2: Bar graph displaying the interviewees' percentage based on their Standards

Table 3: Is displaying the incidence and percentage allocation of participants by religion

Religion	Experimental group N=30		Control group N=30	
	Frequency	Percentage	Frequency	Percentage
Hindu	15	50	16	53.4
Christian	9	30	11	36.6
Muslim	6	20	3	10
Total	30	100	30	100

The data presented in Graph No 3 and Table No 8reveales that The most of of samples 15 (50 percent) in the intervention class and 16 (53.4 percent) of the participants in the control condition were of the Hindu religious belief, followed by 9 (30 percent) in the experimental class and 11 (36.6 percent) in the control condition who were Christians, and 6 (20 percent) in the experimental class and 3 (10 percent) who were Muslims.

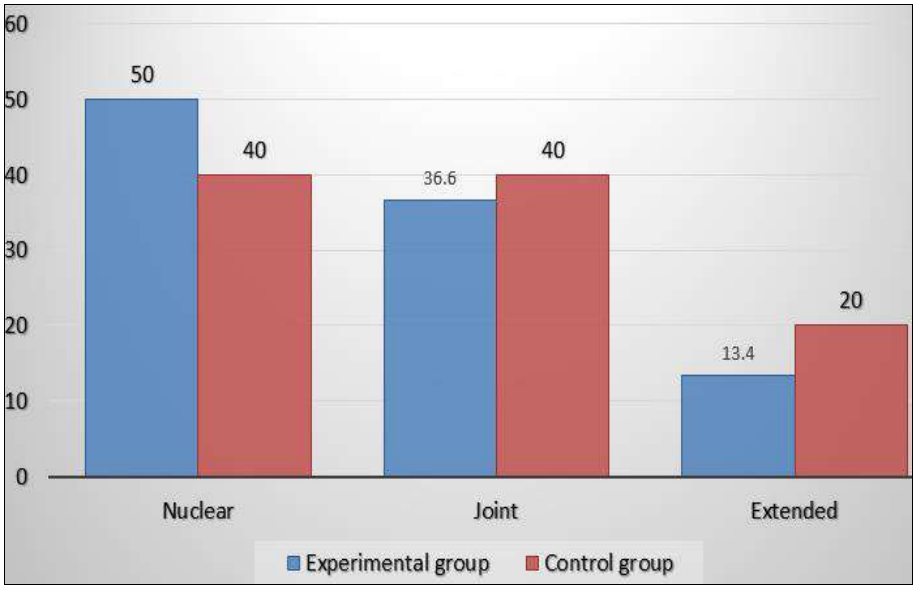


Graph 3: A bar graph displaying the participants' percent of overall religious dispersion

Table 4: Is displaying the frequencies and percentage allocation of participants by typical family N=60

Type of Family	Experimental group N=30		Control group N=30	
	Frequency	Percentage	Frequency	Percentage
Nuclear	50	50	12	40
Joint	11	36.6	12	40
Extended	4	13.4	6	20
Total	30	100	30	100

The data presented in Graph No 4 and Table No 9 indicates that majority 50(50%) of samples were belonged to Nuclear family but only 11(36.6%) samples were belonged to joint family and lowest percentage 4(13.4%) of samples were belonging to a large household in the experimental class, with 12 (40 percent) being the bulkof samples in control are from nuclear family and joint family but lowest percentage was found in extended family with 6(20%) of sample in control group.



Graph 4: A bar graph displaying the participants' percent of overall family types

Section II: Comparison of demographic characteristics of adolescent girls.

Table 5: Pre-intervention comparative of the participants in the control and experimentation categories' demographics N=60

Variable	Experimental group n=30		Control group n=30		x^2	value
	Frequency	Percentage	Frequency	Percentage		
Age (Years)						
15	15	50	12	40	0.12	0.82
16	7	23.3	8	26.7		
17& 18	8	26.7	10	33.3		
Standard						
9th standard	11	36.6	14	46.7	0.78	0.14
10th Standard	8	26.8	7	23.3		
11th Standard	11	36.6	9	30		
Religion						
Hindu	15	50	16	53.4	1.24	0.56
Muslim	9	30	11	36.6		
Christian	6	20	3	10		
Type of family						
Nuclear	15	50	12	40	0.98	0.26
Joint	11	36.6	12	40		
Extended	4	13.4	6	20		
Members in the family						
2members	11	36.6	14	46.7	2.82	0.74
3 members	8	26.8	7	23.3		
4 members	7	23.3	6	20		
more than 4 members	4	13.4	3	10		
Type of food pattern						
Vegetarian	7	23.3	8	26.8	0.98	0.65
Mixed	23	76.7	22	73.2		
Age at menarche						
Before 12 years	11	36.6	12	40	1.12	0.89
12 to 15 years	19	63.4	18	60		
Duration of menstruation						
< 3 days	4	13.4	6	20	0.89	0.54
3 – 4 days	15	50	14	46.7		
5 – 6 days	11	36.6	10	33.3		
Severity of menstruation pain						
Mild pain	16	53.3	17	56.7	1.24	0.64

Moderate pain	8	26.8	09	30		
Severe pain	6	10	04	6.3		
Severity of menstrual discomfort						
1st Day	22	73.2	21	70	0.65	0.62
2nd Day	8	26.8	09	30		
Amount of menstrual flow						
< 3 Pads per day	17	56.7	15	50	0.74	0.14
4 to 7 pads	13	43.3	15	50		
BMI						
Under weight	15	50	17	56.7	0.68	0.12
Normal	11	36.6	10	33.3		
Over weight	04	13.4	03	10		
History of consulting gynaecologist/Doctor recently for menstrual problems						
No	23	76.6	24	80	0.78	0.54
Yes	7	23.4	06	20		
Family history of dysmenorrhea in mother/sisters						
No	25	83.3	23	76.6	0.56	0.16
Yes	05	16.7	7	23.4		
History of Inter menstrual bleeding						
No	27	90	29	96.7	0.98	0.47
Yes	3	10	01	03.3		
Experience of premenstrual symptoms						
No	0	0	0	0	-----	-----
Yes	30	100	30	100		
Physical activity before and during menstruation						
No	21	70	22	73.2	0.68	0.23
Yes	09	30	8	26.8		
Medications during menstrual cycle						
No	29	96.7	30	100	0.78	0.14
Yes	01	03.3	00	00		
Uses of alcohol/drugs/Tobacco						
No	30	100	30	100	----	---
Yes	0	0	0	0		
Educational qualification of Mother						
No formal education	11	36.6	14	46.7	1.56	0.68
Primary	9	30	7	23.3		
Secondary	6	20	6	20		
Higher secondary	4	13.4	3	10		
Educational qualification of Father						
No formal education	15	50	17	56.7	2.14	.0.74
Primary education	06	20	07	23.3		
Secondary education	04	13.4	03	10		
Higher secondary and above	05	16.6	03	10		
Mother Occupation						
Government	4	13.4	6	20	1.75	00.78
Private job	06	20	04	13.3		
Business	05	16.6	06	20		
House maker	15	50	14	46.7		
Father Occupation						
Government	8	26.8	09	30	1.12	0.72
Private job	16	53.3	17	56.7		
Business	6	20	04	13.3		
Monthly Family income						
Less than Rs.5000	11	36.6	14	46.7	0.87	0.36
Rs.5001 – 10000	11	36.6	12	40		
Rs.10001 and above	8	26.8	04	13.3		
Respondents by Residential area						
Urban	09	30	8	26.8	0.71	0.47
Rural	21	70	22	73.2		

Table No 5 Shows that, at a 5 percentage significance threshold, there was not a single difference among the control group as well as the experimental group in the demographics characteristics.

Section III: Comparison of Premenstrual symptoms, Menstrual Discomfort, Pain, Self-esteem and Academic Performance.

Table 6: Pre-intervention Comparison of Premenstrual symptoms, Menstrual Discomfort, Pain, Self-esteem and Academic Performance N=60

Variable	Experimental Group (n=30) Mean ± SD	Control group (n=30) Mean ±SD	t-value	P value
Premenstrual symptoms	135.45±28.24	132.14±34.3	0.84	0.74
Menstrual Discomfort	132.65±4.35	122.24±8.65	1.02	0.32
Pain	8.12±0.74	7.23±0.89	0.65	0.14
Self-esteem	18.32±1.25	19.56±3.26	0.74	0.61
Academic Performance	40.25±2.65	41.26±3.25	0.65	0.74

No substantial differences among the experimental class versus controls categories with regard to any outcomes factors were identified, according to the information provided in Table 6. Both the groups were found equal in premenstrual symptoms, menstrual discomfort, pain, self-esteem and academic performance at pre-intervention level.

Table 7: Group comparison of premenstrual symptoms score across the time points N=60

Time of assessment	Experimental group Mean (SD)	Control group Mean (SD)	Time Effect F /p	Group Effect F /p	Time X Group Effect F /p-value
Baseline	135.45±28.24	132.14±34.3	F =56.32 *P*<0.000	F=23.36 p=.001	F =62.35 *P*<0.000
Post-test-I	114.14±21.05	121.36±32.82			
Post-test-II	109.36±16.21	128.65±38.7			
Post-test-III	102.85±15.43	126.71±34.21			

To evaluate the impact that the treatment had on premenstrual complaints among the group receiving the experiment and the control group as well as within the groups, a repeating measures ANOVA was conducted. Pre - menstrual discomfort scores in both groups in this research decreased significantly from beginning to Post-test-III (F = 56.32, p<0.001). Moreover, there were significantly significant differences among the categories (F=23.36, p=.001) as well as among period & group effects when they interacted (F =62.35, p<0.001). Results demonstrated that patients in the intervention class saw greater reductions in menstrual bleeding at the six month follow-up than did individuals in the treatment group, demonstrating the efficacy of the treatment.

Table 8: Group comparison of Menstrual Discomfort score across the time points. N=60

Time of assessment	Experimental group Mean (SD)	Control group Mean (SD)	Time Effect F /p	Group Effect F /p	Time X Group Effect F /p-value
Baseline	132.65±4.35	122.24±8.65	F =65.21 *P*<0.000	F=32 *P*<.001	F =65 *P*<0.001
Post-test-I	111.26±6.35	121.36±11.6			
Post-test-II	90.23±12.36	120.36±17			
Post-test-III	66.35±11.2	118.98±21.9			

Table No 8 results revealed that behavioural response scores at 3-months follow up declines more successfully in the experimental class than in the people who are part of the control group; hence intervention was highly effective in reduction of menstrual discomforts

Table 9: Group comparison of Pain score across the time points N=60

Time of assessment	Experimental group Mean (SD)	Control Group Mean (SD)	Time Effect F /p	Group Effect F /p	Time X Group Effect F /p-value
Baseline	8.12±0.74	7.23±0.89	F =72 *P*<0.001	F=25.1 *P*<0.001	F =32.1 *P*<0.001
Post-test-I	5.62±1.62	7.12±1.21			
Post-test-II	5.05±1.09	6.00±1.29			
Post-test-III	3.36±1.52	6.58±1.25			

Table 10: Group comparison of self-esteem score across the time points N=60

Time of assessment	Experimental group Mean (SD)	Control group Mean (SD)	Time Effect F /p	Group Effect F /p	Time X Group Effect F /p-value
Baselne	18.32±1.25	19.56±3.26	F =45 *P*<0.001	F=15 *P*<0.001	F =74.32 *P*<0.001
Post-test-I	23.35±1.92	20.2±1.25			
Post-test-II	26.3±3.6	21.32±2.35			
Post-test-III	31.25±1.36	22.12±1.25			

Table 11: Group comparison of Academic performance score across the time points. N=60

Time of assessment	Experimental group Mean (SD)	Control Group Mean (SD)	Time Effect F /p	Group Effect F /p	Time X Group Effect F /p-value
Baseline	40.25±2.65	41.26±3.25	F =69 *P*<0.001	F=15.32 *P*<0.001	F =58 *P*<0.001
Post-test-I	37.35±2.56	42.6±3.62			
Post-test-II	33.85±1.56	40.32±2.35			
Post-test-III	27.36±3.25	41.12±2.57			

The results revealed that academic performance improved in experimental group from baseline to 3 months follow up and not much change was observed in control group subjects across the time points

Pilot study results reveled that, there is no significant changes were observed in any of the subscales between both groups, were found equal in physiological, psychological and behavioural symptoms at pre-intervention level but instantaneously following the comprehensive interventional package, the adolescent girls in the experimental group had significantly increased self-esteem and improvement in management of Premenstrual problems and even class abseeentism and academic performance has improved so that Behavioural outcome variables of adolescents were upgraded after implementation of comprehensive interventional package from baseline to 3 months follow-up. Each teenage female needs to understand premenstrual symptoms, its effects, and the way it may be controlled. Colleges and educational institutions should integrate patient education about PMS and certain other menopausal symptoms into the syllabus to lower the incidence of these issues and provide more instructional strategies for upcoming PMS investigators.

For this reason, initial intervention is needed to present an instructional guidance to boost female's consciousness while offering an effectively trying to cope with technique to ameliorate PMS symptoms as well as avoid future problems from occurring. The overwhelming majority of research indicated that PMS is extremely common between women of procreative age (15 to 49 years of age).

Conclusion

The preliminary investigation was carried out in accordance with the strategy for gathering information, and also the qualitative research was deemed suitable and workable to undertake the full investigation. Behavioural outcome variables of adolescents were upgraded after implementation of comprehensive intervention package. It was observed statisitcally significant decreases in premenstrual symptoms scores after the implementation of comprehensive intervention package. Hence comprehensive intervention package proved to be effective in reduction of menstrual symptoms and also clarifying their doubts regarding menstrual problems.

Conflict of Interest

Not available

Financial Support

Not available

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How to Cite This Article

Jesuraj R, Oka AV. Impact of comprehensive interventional package on behavioural outcomes regarding management of menstrual problems among adolescents - A pilot study. International Journal of Midwifery and Nursing Practice. 2023;6(1):28-34.