MENSTRUAL DISORDERS AND ITS EFFECTS ON ACADEMIC PERFORMANCE AMONG THE NURSING STUDENTS OF PUSHS, GOTHGAUN

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ARTICLE INFO

Received : 09 July, 2022

Accepted : 17 November, 2022

Published : 27 February, 2023

ORA 325

DOI: https://doi.org/10.3126/bjhs.v7i3.52757

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Citation

Sapana Shrestha, Saraswati Manandhar, Chandrakala Limbu, Chanchala Kunwar, Pramila Sinha, Ramesh Shrestha, menstrual disorders and its effects on academic performance among the nursing students of pushs, gothgaun. BJHS 2022;7(3)19. 1871 - 1876.

ABSTRACT

Introduction

Menstrual cycle is a periodic physiological process in women of childbearing age. Menstrual disorders may affect the daily activities and quality of life among reproductive age group women worldwide.

Objective:

The objective of this study was to find out the menstrual disorders and its effects on academic performance among the nursing students of Purbanchal University School of Health Sciences.

Methodology

It was a descriptive, cross-sectional study conducted among 170 undergraduate nursing students of Purbanchal University School of Health Sciences, Gothgaun. Proportionate followed by simple random sampling (lottery method) was adopted. Data was collected through self administered method using semi structured questionnaire. Statistical analysis was done by descriptive and inferential statistics using SPSS version 16.0. Female with systemic health problems, any diagnosed pelvic pathology (fibroids, pelvic inflammatory disease), positive pregnancy test, and lactating mothers were excluded from the study.

Result

Among 170 respondents, most of them (87.1%) had some form of premenstrual symptoms. Majority of them (77.6%) had dysmenorrhea. There was statistically significant association between dysmenorrhea and academic performance with class absenteeism (p=0.009), lack of concentration in class (p<0.001), not able to prepare for exam (p=0.014), mood swings (p=0.043), difficulty in participating in extracurricular activities and difficulty in public speaking (p=0.007).Premenstrual syndrome was also significantly associated with class absenteeism (p=0.012), sleeping desire during lectures (p=0.031) and mood swings (p=0.001).

Conclusion

Menstrual disorders were significantly high among the nursing students and most of them were suffering from premenstrual syndrome and dysmenorrhea. It had significant impact on academic performance of nursing students.

KEYWORD

academic performance; menstrual disorders; nursing students.

INTRODUCTION

Menstrual cycle is a periodic physiological process involving the flow of blood from the uterus through the vagina, occurring at more or less regular monthly interval during the reproductive life of females.[1] Normally menstrual cycle starts between 11 and 14 years of age, with a period length of 7 days or less and a normal cycle length of 21 to 35 days with average blood loss of 20-80ml.[2] Abnormal menstrual patterns might vary in interval, duration of flow and/or quantity of blood flow with different conditions named premenstrual syndrome (PMS), dysmenorrhea (painful menstruation), amenorrhea (absence of menstruation), hypomenorrhea (scanty flow), menorrhagia (heavy flow), metrorrhagia (intermenstrual bleeding), menometrorrhagia (prolonged excessive irregular and more frequent menstruation), polymenorrhea (frequent menstruation), and oligomenorrhea (infrequent menstruation).[3,4]

Menstrual disorders are an acute class of problem usually face by young women during reproductive years having negative impacts in day-to-day social activities, quality and standard of life.[5] PMS and dysmenorrhea are the most common menstrual disorders.[6] PMS starts before the menstrual cycle and stops shortly after menstrual flow begins. It is cyclical symptom complex of behavioral, cognitive, affective and physical symptoms during the luteal phase resolving quickly at or within a few days of menstruation.[7,9] Dysmenorrhea refers to a cyclical lower abdominal or pelvic pain which may radiate to the back or to the thighs leading to decreased academic performance, social dysfunction and impairing woman's quality of life.[10,11] The majority of female health science students reported that they are under continuous and chronic academic stress related to their studies and exams, resulting in negative health outcomes, including menstrual problems due to these two common menstrual problems.[12] The objective of this study was to assess the menstrual disorders and its effects on academic performance among the nursing students of Purbanchal University School of Health Sciences.

METHODOLOGY

It was a descriptive cross sectional study based on quantitative approach done among 170 undergraduate nursing students of Purbanchal University School of Health Sciences. Females with systemic health problems, any diagnosed pelvic pathology (fibroids, pelvic inflammatory disease), positive pregnancy test, and lactating mothers were excluded from the study. Proportionate sampling technique followed by simple random sampling (lottery method) was used. Ethical approval was taken from the Institutional Review Committee of Purbanchal University School of Health Sciences. Data was collected through self administered method using semi structured questionnaire. Principal researcher clarified the menstrual questionnaire items and explained to fill in the questionnaire with small groups of students who were selected through lottery method and then ask each student to fill by themselves and present all the time for any clarification needed. Statistical analysis was done by descriptive and inferential statistics using SPSSS version 16.0.

RESULTS

In this study, there were a total of 170 respondents. The mean age of the respondents was 22.7 (SD=2.3) years.

Table 1 : Sociodemographic characteristics of the respondents (n=170).

Characteristics	Number	Percentage
Age (in years)		
<25	128	75.3
≥25	42	24.7
Mean± S.D=22.7±2.3		
Body Mass Index (Kg/m^2)		
<18.5	29	17.1
18.5-24.9	120	70.6
25-29.9	16	9.4
≥30	5	2.9
Marital Status		
Unmarried		
Married	24	14.1
Stream		
BSC Nursing	100	58.8
PBBN Nursing	70	41.2
Age at menarche (in years)		
10	10	5.9
11	14	8.2
12	57	33.5
13	55	32.4
14	22	12.9
15	12	7.1
Mean± S.D=12.6±1.2		
History of Family Menstrual Disorder	21	12.4
Menstrual Cycle		
Regular	117	68.8
Irregular	53	31.2
Length of Menstrual Cycle (in days)		
<21	27	15.9
21-35	117	68.8
>35	26	15.3
Duration of Menstrual period (in days)		
<3	9	5.3
5-7	40	23.5
>7	9	5.3
No. of Pads Used Per Day		
<3	66	38.8
3-5	98	57.6
>5	6	3.5

Majority of them (75.3%) were below 25 years of age. Majority of them (70.6%) had normal body mass index. Most of them were unmarried (85.9%) and had no history of menstrual disorder in the family (87.6%). The mean age at menarche among them was 12.6 (SD=1.2) years. More than two third (68.8%) of the respondents had normal length of menstrual cycle. Nearly two third of them (65.9%) had 3 to 5 days duration of menstrual blood flow and more than half (57.6%) had 3 to 5 pads used per day during the menstruation.(Table 1)

Table 1 : Sociodemographic characteristics of the respondents (n =170).

Characteristics	Number	Percentage
Premenstrual Symptoms	148	87.1
Experienced of Premenstrual Symptoms (n=148)		
Backache	124	83.8
Fatigue	102	68.9
Breast Heaviness	110	74.3
Breast Tenderness	67	45.3
Abdominal bloating	105	70.9
Headache	43	29.1
Mood Changes	111	75.0
GI Symptoms (Loss of appetite, constipation)	34	23.0
Skin Changes	35	23.6
Urinary Symptoms	14	9.5
Craving Food	70	47.3
Muscle Pain	83	56.1
Dysmenorrhoea	132	77.6
Severity of Dysmenorrhoea (n=132)		
Mild Dysmenorrhoea	31	23.5
Moderate Dysmenorrhoea	65	49.2
Severe Dysmenorrhoea	36	27.3
Use of pain killers during Dysmenorrhea (n=132)	57	43.2
Experience of Dysmenorrheal Symptoms (n=132)		
Backache	115	87.1
Stomach Cramp	114	86.4
Mood Changes	87	65.9
Myalgia	25	18.9
Fatigue	75	56.8
Headache	46	34.8
Nausea	41	31.1
Vomiting	70	53.0
Dizziness	33	25.0

The premenstrual syndrome (PMS) was seen in 87.1% of the respondents. Among them, the most common premenstrual symptom was backache (83.8%) followed by mood changes (75.0%), breast heaviness (74.3%), abdominal bloating (70.9%) and fatigue (68.9%). Majority of the respondents (77.6%) had dysmenorrhea. Among them, nearly half of the respondents (49.2%) had moderate type of dysmenorrhea. Nearly half (43.2%) of the respondents used pain killers during dysmenorrhea. The most common dysmenorrheal symptom was backache (87.1%) followed by stomach cramps (86.4%), mood changes (65.9%), fatigue (56.8%), vomiting (47.3%), nausea (31.1%) and dizziness (25.0%).(Table 2)

Table 3. Menstrual Disorders among Respondents (n=170).

Characteristics	Number	Percentage
Menorrhagia	**25**	**14.7**
Oligomenorrhea	16	9.4
Amenorrhoea	15	8.8
Hypermenorrhea	13	7.6
Metrorrhagia	9	5.3
Menometrorrhagia	3	1.8
Polymenorrhea	2	1.2

Only few of the respondents (14.7%) had menorrhagia followed by oligomenorrhea (9.4%) and amenorrhea (8.8%).(Table 3)

Table 4. Effects of menstrual disorders on academic performance among respondents(n=170).

SN.	Characteristics	Yes	%	No	%
	Effect on Class Room performance				
1.	Class absenteeism	81	47.6	89	52.4
2.	Lack of concentration during study hours	115	67.6	55	32.4
3.	Difficulty in remembering all that is studied	84	49.4	86	50.6
4.	Sleeping desire during lectures	90	52.9	80	47.1
	Effect on Examination				
1.	No interest to write examination during this time	83	48.8	87	51.2
2.	Not able to prepare for examination	101	59.4	69	40.6
3.	Getting slow in writing examination	88	51.8	82	48.2
4.	Lack of concentration	112	65.9	58	34.1
	Effect on Assignments				
1.	Unable to complete the assignment in time	99	58.2	71	41.8
2.	Not able to do critical thinking	87	51.2	83	48.8
3.	Feel to get excuse from teachers	70	41.2	100	58.8
4.	Not able to do presentations	77	45.3	93	54.7
	Effect on Extracurricular activities				
1.	No interest in stage performance	129	75.9	41	24.1
2.	Difficulty in participating extracurricular activities	134	78.8	36	21.2
3.	Difficulty in public speaking	86	50.6	84	49.4
4.	Lack of interest in extra classes	112	65.9	58	34.1
	Effect on Personality				
1.	Getting mood swings	136	80.0	34	20.0
2.	Feeling of inferiority	60	35.3	110	64.7
3.	Lack of self confidence	85	50.0	85	50.0
4.	Lack of interest to meet the teachers	69	40.6	101	59.4

Regarding the effect of menstrual disorders on class room performance, more than two third (67.6%) lack concentration during study hours. More than half (52.9%) of the respondents had sleeping desire during lectures. Similarly, the effect of menstrual disorders on exam showed that more than half (59.4%) of the respondents were not able to prepare for examination and nearly two third (65.9%) had lack of concentration. The effects of menstrual disorders on assignments showed that more than half (58.2%) of the respondents were unable to complete their assignment in time. Likewise, more than half (51.2%) were not able to do critical thinking.

The effect of menstrual disorders on extracurricular activities showed that majority of the respondents (75.9%) had no interested in stage performance. Most of the respondents (78.8%) had difficulty in extracurricular activities. The effect of menstrual disorders on personality showed that most of the respondents (80.0%) had mood swings.(Table 4)

Table 5: Association between premenstrual syndrome and academic performance (n=170).

Characteristics	Premenstrual Syndrome Yes n (%)	No n (%)	χ^2	*P*value
Class Absenteeism				
Yes	76(51.4)	72 (48.6)	6.291	0.012
No	5(22.7)	17(77.3)		
Lack of Concentration in class				
Yes	104(70.3)	44 (29.7)	3.596	0.058
No	11(50.0)	11(50.0)		
Sleeping desire during lectures				
Yes	83(56.5)	64(43.5)	4.669	0.031
No	7(31.8)	15(68.2)		
Getting Mood Swings				
Yes	124(83.8)	24(16.2)	10.233	0.001
No	12(54.5)	10(45.5)		
Difficulty in Extracurricular Activities				
Yes	119(80.4)	24(19.6)	1.714	0.190
No	15 (68.2)	7(31.8)		
Difficulty in Public Speaking				
Yes	78 (52.7)	70(47.3)	2.046	0.153
No	8 (36.4)	14(63.6)		

p value significant at <0.05

Table 6. Association between dysmenorrhea and academic performance (n=170).

Characteristics	Dysmenorrhea Yes n (%)	No n (%)	χ^2	*P* value
Class Absenteeism				
Yes	70 (53.0)	62 (47)	6.860	0.009
No	11 (28.9)	27 (71.1)		
Lack of Concentration in class				
Yes	99 (75.0)	33 (25)	14.588	<0.001
No	16(42.1)	22(57.9)		
Not able to Prepare for Exam				
Yes	85(64.4)	47(35.6)	6.079	0.014
No	16(42.1)	22(57.9)		
Lack of concentration in exam				
Yes	92(69.7)	40(30.3)	3.823	0.051
No	20(52.6)	18(47.4)		
Getting Mood Swings				
Yes	110(83.3)	22(16.7)	4.101	0.043
No	26(68.4)	12(31.6)		
Difficulty in Extracurricular activities				
Yes	110(82.1)	24(17.9)	7.195	0.007
No	22(61.1)	14(38.9)		
Difficulty in Public Speaking				
Yes	74(86.0)	12(14)	7.075	0.008
No	58(69)	26(31.0)		

p value significant at <0.05

There was statistically significant association of dysmenorrhea with class absenteeism, lack of concentration in class, not able to prepare for exam, mood swings, difficulty in extracurricular activities and difficulty in public speaking (p-value<0.05). (Table 6)

DISCUSSION

In this study the mean age at menarche among the 170 respondents was 12.59 years, which was similar with the results of other studies from different geographical areas.3[9,10] The mean age at menarche were 12.81 years, 12.6 years and 13.6 years in the studies done by Sreelakshmi et al.[3], Lakkawar et al.[9], Adebimpe et al.[10]respectively.

In this study, more than two third of the respondents (68.8%) had regular and normal length of menstrual cycle and nearly one third (31.2%) had irregular cycle with length ranging less than 21 days (15.9%) and (15.3%) above 35 days. It was in contrast to the findings of the study done by Shete et al[11] where menstrual cycle was regular among 79.3% students and 20.7% had irregular cycle.

In this study, majority of the respondents (77.6%) had dysmenorrheal problems. Among them, nearly half (49.2%) had moderate type of dysmenorrhea. More than half (53.5%) had sought medical advice for menstrual disorders. A study done by Shete et al.[11] showed that 90.0% had dysmenorrhea with moderate pain in 74.0% and 90.0% didn't seek for medical advice for menstrual disorders which is in contradictory to the findings of this current study.A study by Sreelakshmi et al.[3] showed that premenstrual syndrome was seen in 75.0% of the students, dysmenorrhea in 57.0% and irregular cycle in 38.0% which were similar to the findings of the present study. Similarly, a study done by Ali et al.[5] in Saudi Arabia among nursing students showed that 94.0% had dysmenorrhea and more than half (55.0%) had irregular menstruation which is in contrast to the findings of the current study.

The present study findings showed that only 14.7% of the respondents had reported menorrhagia followed by oligomenorrhea (9.4%), amenorrhea (8.8%), hypermenorrhea (7.6%), metrorrhagia (5.3%), menometrorrhagia (1.8%) and polymenorrhea (1.2%). The findings were in contrast with the study doneby Amaza et al.[13] in Nigeria where 21.9% studentshad menorrhagia, 16.0% had oligomenorrhea and 9.1% had Polymenorrhea.Similarly, a study by Rafique et al.[2] showed that 91.0% of students had some kind of menstrual problems. Among them,dysmenorrhea was seen in 89.7%, premenstrual syndrome in 46.7%, irregular menstruation in 27.0%, amenorrhea in 9.2% and menorrhagia in 3.4% students.

In the present study, most of the respondents (87.1%) had premenstrual symptoms. The most common premenstrual symptoms was backache (83.8%) followed by mood changes (75.0%), breast heaviness (74.3%), abdominal bloating (70.9%) and fatigue (68.9%) which is incontrast with the study done by Shamnani et al.[14] where 65.0% had PMS and among them the common symptoms was body pain (52.0%) followed by fatigue (42.0%), abdominal bloating (20.0%), headache (28.0%) and breast tenderness (21.0%).

The finding of the current study showed that nearly half (47.6%) of the respondents were absent in class due to menstrual disorders and this finding is in contrary to the study done by Ksham et al.[15] in Nagpur, India in which only

12.8% students were absent due to menstrual problems. But this study finding is in consistent to the study done by Gujarathi et al.[4] in which 40.7% students were absent in class due to menstrual disorders. The current study finding is also in consistent to the study done by Elia et al.[16]in Spain in which more than half (60.5%) missed class at least one day due to menstrual problems. Similarly, this study finding is also in consistent to the study done by Raju et al.[17] in Maharashtra, India where 48.7% of the students were absent due to menstrual disorders.

The current study finding showed that more than two third (67.6%) of the respondents reported lack concentration during study hours. Nearly half (49.4%) have difficulty in remembering which is similar with study done in India among 200 nursing students in which 71.0% had lack of concentration and 58.0% had difficulty in remembering during lectures.[17]

Regarding association between dysmenorrhea and premenstrual symptoms with selected demographic variables, the current study findings showed that increase in BMI had no association with dysmenorrhea and premenstrual syndrome which is similar to the study done by Lakkawaret al[9] A study by Zafar et al.[18] showed that there was significant relationship between age and dysmenorrhea and BMI and dysmenorrhea which is in contrast to the current study finding.

Regarding the association between dysmenorrhea and academic performance, the current study finding showed that dysmenorrhea was significantly associated with class absenteeism, lack of concentration in class, not able to prepare for exam, mood swings, difficulty in participating extracurricular activities and difficulty in public speaking. The current study finding is similar to the study done by Dahlawi et al.[19] in Riyadh in which absenteeism, reduced concentration and reduced physical activity were significantly associated with dysmenorrhea.

CONCLUSION

This study concluded that menstrual disorders like premenstrual syndrome (87.1%) and dysmenorrhea (77.6%) were significantly high among the nursing students. Both these menstrual disorders had significant impact on academic performance of thenursing students. There was significant association between dysmenorrhea and class absenteeism, lack of concentration in class, not able to prepare in exam, getting mood swings and difficulty in public speaking (p value<0.05). Likewise, premenstrual syndrome was also significantly associated with class absenteeism, sleeping desires and mood swings (p value<0.05).

RECOMMENDATION

1. Health awareness programs should be conducted for young women about menstrual disorders and its early diagnosis. Management of common menstrual disorders should be a part of primary healthcare in young females.
2. School authorities and teachers need to be aware of the problems to provide psychological andacademic support including the behavioral and psychological therapy.
3. Counselling at early age, timely administration of preventive and medical treatment measures, development of standard treatment guidelines will help in reducing health problems.

LIMITATIONS OF THE STUDY

This is a cross sectional study which makes difficult to establish temporal relationship between study variables.

This study was a single centered study which less likely projected the problem of whole nursing students but also not among the whole females of reproductive age groups.

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to Purbanchal University School of Health Sciences for providing the opportunity to carry out this study. I sincerely thank to the institutional Review Committee for providing ethical clearance to conduct the study. I am truly indebted to all respondents for their participation and patience who made this study a reality. My sincere thanks goes to my co-authors for their support and suggestions for the completion of this study.

FINANCIAL DISCLOSURE

Study conducted under the grant (Amount - Rs. 50,000) provided by Purbanchal University, Faculty of Medical and Allied Sciences

CONFLICT OF INTEREST

None

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