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Original Research Article

Prevalence of dysmenorrhoea and its effect on quality of life among nursing students

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ABSTRACT

Background: Painful menstruation, is common gynaecologic problem, significantly affects the routine life of most of affected girls. Most of them experience some degree of pain and discomfort during menstrual period, which can affect their daily activities, disturb their productivity at their work place. This also appears to be a leading cause of absenteeism from college. Hence arises a need to evaluate the, prevalence of dysmenorrhoea and its effect on daily routine activities and quality of life of nursing students.
Methods: This is a cross sectional study conducted among 100 nursing students (1st year, 2nd year and 3rd year) of NSCB Medical College with the objectives to evaluate prevalence and severity of dysmenorrhea and its effects on the quality of life, particularly absenteeism from college/work place. Students chosen for study and each student was given questionnaire to complete background information, question related to menstrual cycle, severity of dysmenorrhoea, PMS, and work /study /daily activities affected due to dysmenorrhoea, elucidated and data collected and analysed.
Results: Prevalence of dysmenorrhoea was 79% of these 3% severe, 18% moderate and 58% were mild grade. Out of 79/100 participants of dysmenorrhoea 63.29% missed individual classes or their study affected, 31.64% had to take leave from work place and 51.89% reported social withdrawal during menstruation due to dysmenorrhoea.7.59% take medicines for pain relief.
Conclusions: Dysmenorrhoea is a very common problem among girls and it affects their quality of life and their productivity at work place. It is important to spread awareness about the causes and treatment of dysmenorrhoea to avoid undue sufferings causing absenteeism from work and studies.

Keywords: Absenteeism Dysmenorrhoea, Menstruation, Prevalence

INTRODUCTION

Dysmenorrhoea is defined as painful menstrual cramps of uterine origin. It is most common gynecologic complaint among adolescent and young adult females.[1] It is often accompanied by other biological symptoms including dizziness, fatigue, sweating, backache, headache, nausea, vomiting, and diarrhea all occurring just before or during the menstruation. 10% of these suffer severely enough to render them incapacitated for one to three days each menstrual cycle. This situation not only has a significant effect on quality of life and personal health but also has a global economic impact.[2] There is a wide variation in the estimate of dysmenorrhoea from studies around the world reporting a range between 28% and 71.7%.[3,4] In similar studies from Turkey, the prevalence of dysmenorrhea has been reported to be between 58.2% and 89.5%.[5,6]

The true incidence and prevalence of dysmenorrhoea are not clearly established in India. Dysmenorrhoea has been estimated to be the greatest cause of time lost from work, colleges and schools. Despite the high prevalence of

dysmenorrhoea, it is poorly treated and disregarded by health professionals, pain researchers, and the women themselves, who may accept it as a normal part of the menstrual cycle. Two categories of dysmenorrhoea are defined, primary and secondary. Primary dysmenorrhoea is defined as painful menses among females with normal pelvic anatomy, frequently beginning during adolescence. It is observed only in ovulatory cycles, frequently emerging within 6 to 12 months after menarche with no pathology or organic basis. Secondary dysmenorrhea is a menstrual pain associated with underlying pathology and its onset might be years after menarche and can occur premenstrually as well as during menstruation. Primary dysmenorrhoea is extremely common, especially among adolescents.[7] As many as 90% of adolescent females and above 50% of menstruating women worldwide report suffering from it, with 10–20% of them describing their hurt as severe and distressing.[8]

Overproduction of prostaglandins is a substantial contributing factor to the painful cramps. Premenstrual syndrome (PMS) is combination of physical and psychological symptoms that some women experience during the late luteal phase of each menstrual cycle (7 to 14 days prior to menstruation).[9] Moderate to severe pain that affects lifestyle and does not respond to pharmacological treatment requires professional attention and appropriate diagnosis of possible underlying pelvic disease.

The present study aim to find the prevalence of dysmenorrhoea, its effect and consequences of recurrent menstrual pain, mood, quality of life, routine activity and productivity in nursing students with primary dysmenorrhea.

METHODS

This is cross-sectional descriptive study, carried out from Dec 2017 to Feb 2018 with objectives to rule out the Dysmenorrhoea related to menstruation in last three cycles. Study was conducted in Nursing students NSCB medical college Jabalpur MP.

A total of 100 female (1st and 2nd and 3rd year) Nursing students were chosen for this study and each student was given a questionnaire (Proforma) to complete. Back ground information about the respondents include: age, education, weight, height, socioeconomic status, dietary habits, physical exercise.

Questions related to menstruation, elucidated variation in menstrual patterns like length of cycle, duration of bleeding period, blood loss per cycle, (number of pad used/cycle), Type of pad used, history of dysmenorrhoea and its severity, pre-menstrual symptom and absenteeism from college/classes/hospital, affected study/sports activity, medicines required for dysmenorrhoea. To detect the severity of dysmenorrhea we used the Verbal-Multidimensional Scoring System.[10]

Table 1: Verbal Multi-dimensional scoring system (Severity of Dysmenorrhoea).

Grade	Severity of Dysmenorrhoea	Working ability	Systemic symptoms	Need of analgesic
0	Mc is not painful and daily activity is unaffected	Unaffected	None	Not required
1	Mc is painful but seldom inhibit normal activity, mild pain.	Rarely affected	None	Rarely required
2	Daily activity affected, analgesic gives reliefso that absence from work is unusal; moderate pain	Moderately affected	Few	Required
3	Daily activity inhibited, poor effect of analgesics, severe pain	Inhibited	Headache, fatigue, nausea, vomiting and diarrhea.	Poor Effect

In the present study dysmenorrhoea was defined as having painful menstruation during the previous three months and the degree of pain was categorized as mild, moderate and severe.

Work place absence was defined as missing half day to complete day of work place and class absence was defined as missing individual classes because of pain during menstruation.[11] Pre-menstrual syndrome (PMS) is recurrent variable cluster of trouble some physical and emotional symptoms that develop 7–14 days before the onset of menstruation and subsides when menstruation occurs.

This study included only unmarried nulliparous, healthy (1st, 2nd and 3rd year) nursing students, in age group of 17 to 25 years. The participation was purely on voluntarily basis and written consent was taken before initiating the data collection.

Statistical Analysis

Data was double key entered in Microsoft Excel 2007 worksheet. All the inconsistencies and illogical entries were validated and restored before statistical analysis. Non-numerical variables were coded numerically. Categorical variables were tabulated in frequency and percent distribution. Odds Ratio with 95% confidence intervals were calculated.

Frequency distribution in contingency table was analysed using chi square analysis. Fisher"s exact test was also applied where frequency was less than 5. Statistical analysis was performed using SPSS 22 version for windows.

RESULTS

In the present study total 100 students participated and completed questionnaire. The mean age of participants was 19.28 year. The mean age at menarche was 13.41 year. Of the total participants 73% belongs to urban and 27% from rural area. 34% were pure vegetarian and 66% were on mixed diet. 66% has fast food habit. 69% subjects were average weight, while 21% subjects were underweight and 10% were overweight.

Out of 100 partcipants 45% involved in daily outdoor physical exercise for more than 30 min, 27% do no exercise while 28 % involved in exercise for less than 30min duration (Table 2).

Table 2: Biological Characteristics of subjects.

Variables	(n=100)	Dysmenorrhoea present	Dysmenorrhoea absent	OR(95% CI)
BMI (WHO criteria)*				
Underweight (BMI≤18)	21	16	5	1(Reference)
Average weight (18-22.99)	69	54	15	1.12(0.35-3.60)
Overweight (23-30)	8	7	1	2.19(0.20-23.71)
Moderately obese >30)	2	2	0	-
Exercise Duration**				
No exercise	27	26	1	15.78(1.63-153.14)
<30 Min	28	25	3	5.06(1.23-20.78)
≥30 Min	45	28	17	1(Reference)
Diet (Fast food habit)***				
Present	66	56	10	2.68(0.98-7.35)
Absent	34	23	11	1(Reference)
Age (in years)******				
17	3	2	1	1(Reference)
18	20	16	4	2.00(0.13-30.18)
19	35	28	7	2.00(0.5-26.49)
20	33	24	9	1.33(0.10-17.20)
21	6	6	0	-
22	3	3	0	-
Locality*******				
Urban	73	56	17	1(Reference)
Rural	27	23	4	1.75(0.52-5.82)

*chi square=1.00, p value =0.953, **chi square=14.29; p value=0.001 ***chi square =4.00; p value =0.045 , ****chi square =3.49; p value-0.692 ,*****chi square=0.85; p value=0.420

Distribution of subjects with or without history of dismenorrhoea, according to age, BMI, locality, duration of exercise and fast food habit was shown in Table 2.

Prevalence of dysmenorrhoea was 79% (Figure 1) of these 3%, Severe (95% CI-0.62-8.52), 18% moderate (95%CI-11.03-26.95) and 58% were mild grade (95%CI 47.71-67.80). Among these subject (n=79) following symptoms ie; Backache 82.27%, Lower abdomen pain (84.81%), Fatigue (54.43%), Vomiting (15.18%), Headache (32.91%) were reported (Figure 2).

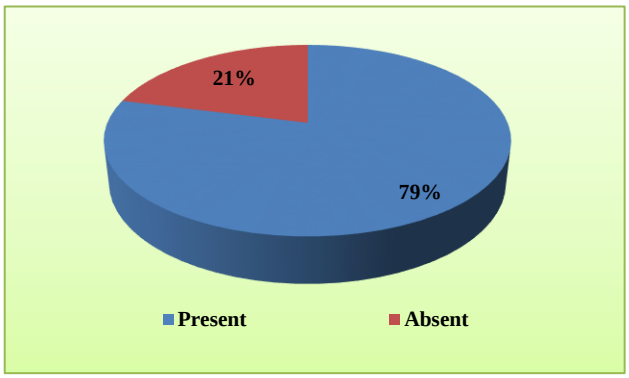

Figure 1: Prevalence of dysmenorrhoea.

Out of 100 subjects, 64% were presented with PMS, symptoms consist of systemic symptoms (64.06%) like abdominal bloating, breast heaviness, neuropsychiatric symptoms (53.12%) and behavioral symptoms 40.62% (Figure 3) (Figure 4).

Table 3: Characteristics of menstrual cycle.

Menstrual cycle characteristics	Number of Subjects (n=100)	%
Length of cycle (days)		
<20	3	3
20-35	85	85
>35	12	12
Duration of Menses		
≤2	3	3
3-7	93	93
>7	4	4
Blood loss /cycle (no of pad used/cycle)		
≤5	6	6
6-10	48	48
11-15	33	33
16-20	8	8
>20	5	5
H/O Dysmenorrhoea		
Yes	79	79
No	21	21
H/O Premenstrual Symptoms		
Yes	64	64
No	36	36

In 85% subject's length of cycle was normal (20-35days) while in 3% had short cycles (<20days) and 12% had longer cycles (>35days). Maximum subjects had average duration of bleeding (93%) and Average amount of blood flow (Table 3).

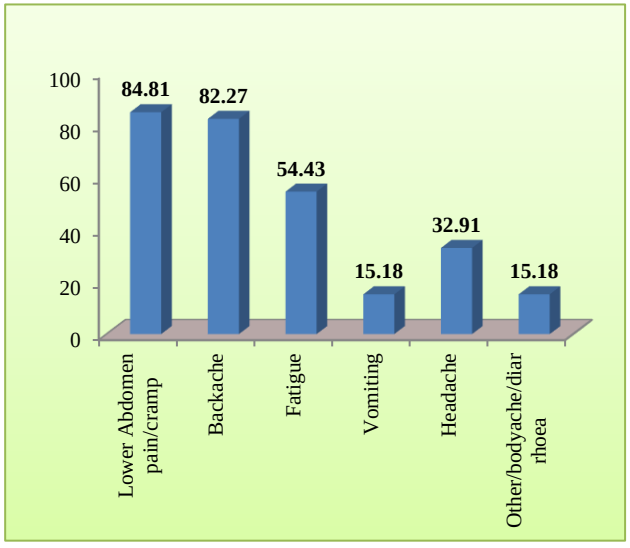

Figure 2: Symptoms of dysmenorrhoea.

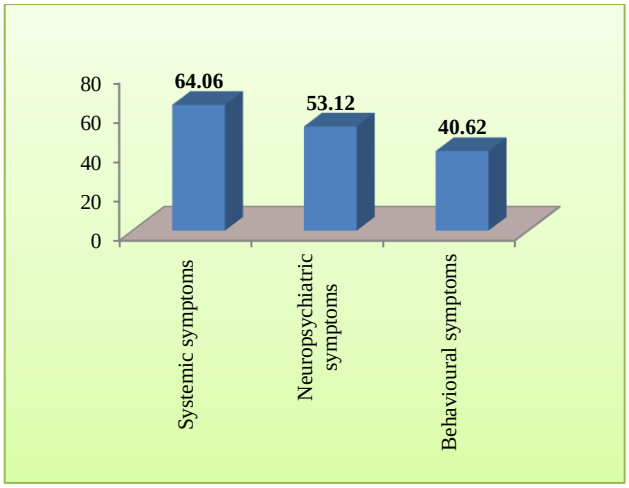

Figure 3: Premenstrual symptoms.

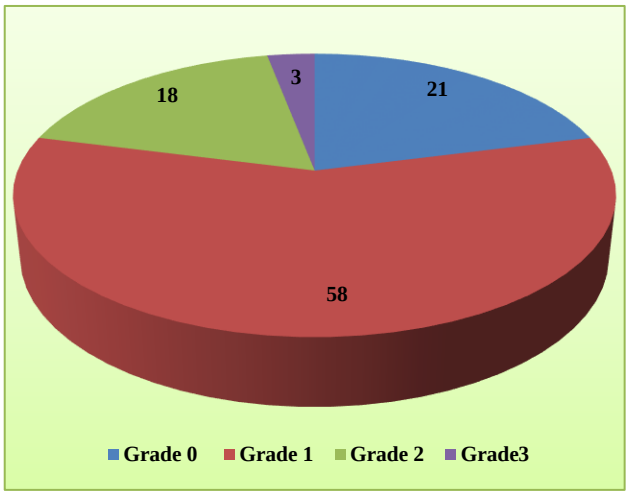

Figure 4: Severity of dysmenorrhoea grading (verbal multidimensional scoring system).

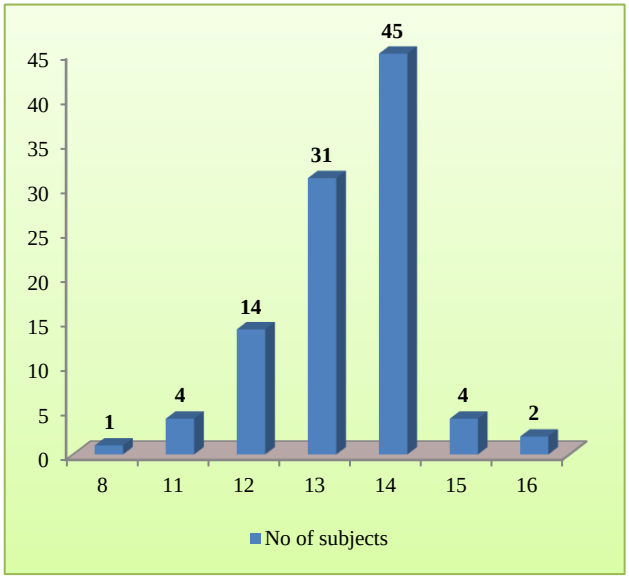

Figure 5: Distribution of subjects according to age of menarche.

Out of 79/100 participants 25/79 (31.64%) were absent from college/work place, 50/79 (63.29%) missed individual classes/affected study and 41/79 (51.89%) reported social withdrawal during menstruation due to dysmenorrhoea. 6/79 (7.59%) subjects had to take medicines for relief of pain of dysmenorrhoea (Table 4).

Table 4: Effect of Dysmenorrhoea on life quality.

Routine activities	n/d (%)	95% Confidence Interval
Absenteeism from work place	31.64	21.63-43.08
Affected study/poor concentration	63.29	51.69-73.86
Social withdrawal during menses	51.89	40.36-63.29
T/t required for dysmenorrhoea	7.59	2.84-15.80

Table 5: Severity of dysmenorrhoea grading (verbal multidimensional scoring system).

Grading	No of students (n=100)	95% Confidence interval
Grade 0	21	13.49-30.29
Grade 1	58	47.71-67.80
Grade 2	18	11.03-26.95
Grade3	3	0.62-8.52

DISCUSSION

Among the 100 participants, the average age of participant was 19.28 years ranging from 17 to 22 years. In similar study Mool Raj Kural et al., the average age of participant was 20.4±1.8 years ranging from 17 to 25 years and in another similar study Unsal et al, average age of participants was 20.8±1.8 years.[12,13]

In the present study association of dysmenorrhoea with particular age was not found significant. 73% belongs to urban and 27% from rural area. association of dysmenorrhoea with locality not found significant(p=0.420), but greater chance of dysmenorrhoea found in rural area. Avasarala et al, also not reported any association of dysmenorrhoea with locality.[14]

Out of 79 subjects of dysmenorrhoea 54/79 subjects had average BMI, while 16/79 subjects found underweight, 7/79 overweight and 2/79 obese. Association of dysmenorrhoea was not fount stastistically significant with BMI (P=0.953) while Ju H et al., found higher association of dysmenorrhea with women who were underweight and obese.[15] In Shah M et al., 4.31% were underweight, 84.48% were average weight and 11.20% were overweight.[16]

In Unsal A et al, overweight and obesity was found in 6.4% participants. 27 participants did no physical exercise, 28 exercise for <30 minutes and 45% exercise for ≥30 minutes.[13] In the present study dysmenorrhoea was found in 26/27, 25/28 and 28/45 subjects with no physical exercise, <30 min exercise and >30 min of exercise respectively. Association of dysmenorrhoea was found highly significant with duration of exercise (p=0.001), Onur O et al, study show that exercise has a positive effect on dysmenorrhea.[17] Out of 66 subjects having fast food habit dysmenorrhoea was present in 56, while out of 34 subjects with no fast food habit dysmenorrhoea was present in 23 cases. This was found statistically significant (p=0.045). Jaget N et al and Lakshmi AS. also found significant association between fast food habit with dysmenorrhoea.[18,19]

Prevalence of dysmenorrhoea in the present study was 79% which was in agreement with Prevalence rate reported by study from Gondar University, Private University in Ogun state and Alaettin Unsal et al, which were 77.6%, 78.1% and 72.7%, respectively.[13,20,21] In Shrotriya Charu et el the prevalence was 67%. Mild degree of dysmenorrhoea reported in 58% cases, moderate and severe degree were reported in 18 and 3 % of cases respectively.

In study by Sharma N et al mild, moderate and severe degree were noted in 36.5%, 24.6% and 9.5% respectively, while Singh A, reported prevalence of dysmenorrhea was 73.83%; of these 6.32%, severe, 30.37% moderate and 63.29% were mild grade.[22] Length of cycle was <20 days in 3% participants, 20 to 35 days in 85% and >35 days in 12%.

In Minaleshewa Biruk et al., it was 6.4%, 76.40% and 17.2% respectively. In Shrotriya Charu et al., 97% had 28-35 days of cycle length which is normal. Duration of flow in present study was <2 days in 3%, 3-7 days in 93% and >7 days in 4% of participants.[21] In Minaleshewa Biruk et al., 62% participants had duration of flow of 3-4 days.[20] In Alaettin Unsal et al., duration of flow was <6 days in 68.7% and ≥7 days 31.3%.[13] Blood loss per cycle assessed by number of pads used per cycle and found to be use of ≤5 pads in 6%, 6-10 pads in 48%, 11-15 pads in 33%, 16-20 pads in 8% and >20 pads in 5% participants. In present study premenstrual symptoms were present in 64% of participants. In Charu S et al 86.96% had physical premenstrual symptoms and psychological PMS were in 56%.[2]

In the present study, subjects suffering from dysmenorrhoea (n=79) presented with the following symptoms like abdominal cramps (84.81%) backache (82.27%), fatigue (54.43%), headache (32.91%) vomiting (15.18%) and other symptoms like diarrhea, tachycardia, mood changes (15.18%). Among these most common symptoms were abdominal cramp and headache similar to study conducted by Derseh BT et al.[23] Rahma Al reported backache (79%), stomach cramps (70%) and mood changes (68%) cases

In the present study about 31 64% were absent from class/work place, 51.89% had encountered social withdrawal similarly Minaleshewa Biruk Gebeyehu et al.,

found absentesim from classes and social withdrawal in 31.1% and 63% respectively, while in hongkong university study affected in 75%.[24] Despite such an impact on their lives, only 7.59% take medicines or sought formal medical advice for their dysmenorrhoea. Which was similar to study of Hongkong university students.[25]

CONCLUSION

Dysmenorrhoea is common among the nursing students and it is major problem representing the leading cause of college/class/ work place absenteeism. Although further research is needed.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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