

# A Prevalence Study of Dysmenorrhoea among University Students

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## Summary

A population based questionnaire survey to study the prevalence of dysmenorrhoea with special emphasis on its character, relationship to menstrual pattern and its effect on class absenteeism was carried out on 205 female university students aged 20-24 from Universiti Sains Malaysia, Perak Branch Campus. 128 students returned the completed questionnaire (response rate 62%). The overall prevalence of dysmenorrhoea after excluding probable causes secondary to gynaecological disease was 58%, 20% of which reported severe dysmenorrhoea and resulted in their absence from classes and 4% of them consulted a doctor for their pain. There is significant association between prevalence of dysmenorrhoea and amount of menstrual loss but there is no association with length of menstrual cycle, age of menarche or duration of menstrual flow.

*Key Words:* Dysmenorrhoea, Dysmenorrhoea prevalence, Malaysia

## Introduction

Dysmenorrhoea is a Greek word meaning difficult monthly flow and is usually taken to mean painful menstruation<sup>1</sup>. Dysmenorrhoea is a common complaint of women during their reproductive years. However, the prevalence of dysmenorrhoea is difficult to determine accurately as wide variation in definition, study populations and geographic locations often render interpretation of the literature difficult<sup>2,3</sup>. The objective of this study is to determine the prevalence of dysmenorrhoea with special emphasis on its characters, its relationship to menstrual pattern and its impact on class absenteeism in students from Universiti Sains Malaysia (USM), Perak Branch Campus.

## Methods and Materials

The population based questionnaire survey was conducted between 2.2.95 and 12.2.95 in USM, Perak Branch Campus in Tronoh. The questionnaire together with an explanatory letter were given to a total of 205 female residential students who represent 82% of the total female students. The remaining 44 students

(17%) who were undergoing industrial training in other states were not approached in this study. Distribution as well as collection of questionnaires, done 10 days later, were done through the hostel authority to ensure highest possible return rate. The first part of the questionnaire recorded age, race, height, weight, marital status, menarche, regularity of menstrual cycle, duration, amount of menstrual loss and presence of dysmenorrhoea. Those answered for presence of dysmenorrhoea were further asked to answer the age of onset, characteristic of pain, associated symptoms, onset of dysmenorrhoea in relation to menstrual flow, relieving factors, severity and duration of dysmenorrhoea. Past history of gynaecological diseases were also recorded in the questionnaire. The criteria for diagnosis of dysmenorrhoea were presence of menstrual cramp or pain which may commence 2 days before or soon after onset of menstruation and lasts for 48 to 120 hours. Those with symptoms suggestive of secondary dysmenorrhoea due to probable gynaecological diseases were excluded from this study (5/76). Among these symptoms were pain which started 3 or more days

before the menstruation in increasing intensity until the start of the period when the menstrual flow relieves it, colicky pain occurs intermittently throughout the menstrual flow, pain which started with the period being relieved by the cessation of menstruation or severity of dysmenorrhoea was worsened over the years were the criteria for exclusion from the study.

The Students's t-test and Chi-squared test were used for the statistical analysis of the data using 'Systat Version 5.0' software which was run on an IBM compatible computer.

## Results

Completed questionnaires were returned by 128 students (62% response rate), of which 67% were Malays, 24% Chinese, 8% Indians and 1% other races. Among the 128 respondents, 76 students were recorded as having dysmenorrhoea but only 71 students met the diagnosis criteria for primary dysmenorrhoea. Those students fulfilling the diagnosis criteria for primary dysmenorrhoea (n=71) were paired with non dysmenorrhoeic control group (n=52). Details of the observed and control groups are given in Table I. The age, weight, height and racial distribution were statistically comparable. The prevalence rate for dysmenorrhoea in this study was 58%. Table I and II showed no significant association

between dysmenorrhoea and race, age of menarche, regularity of cycle or length of cycle. Figures 1, 2 and 3 showed comparison of dysmenorrhoea and non dysmenorrhoeic group on such variables as menarche, duration of menstrual flow and length of menstrual cycle. Distribution of age of menarche according to race was reported on Table III. No significant difference between dysmenorrhoea and non dysmenorrhoea group were observed on duration of menstrual flow of equal or more than 6 days (45/68 Vs. 32/51, Chi-squared value = 0.150, p=0.698). A significant association between dysmenorrhoea and heavy menstrual loss was observed in this study (22/69 Vs 6/52, Chi-squared value = 6.901, p = 0.009) (see Table II).

Out of 71 students with dysmenorrhoea, the number of students who had their first experience within one year after menarche is 25 students (40%), 1 to 5 years after menarche is 29 students (46%) and 6 to 9 years after menarche is 9 students (14%). Table IV shows the characteristics of the pain in students with dysmenorrhoea. The majority of students that is, 51/69 (74%) had lower abdominal cramp whether on its own or in combination with backache and/or pain at thighs and legs. Associated symptoms with dysmenorrhoea were weak and fatigue 46 cases (66%), irritable and moody 47 cases (65%), emotional 36 cases (51%), headache 22 cases (31%), nausea 13 cases (18%),

Table I  
Characteristics of students in dysmenorrhoea and non dysmenorrhoea groups

	Dysmenorrhoea (n=71)	Non Dysmenorrhoea (n=52)	Statistical analysis	p value
Mean Age (years ± sd)	21.6 ± 1.25	22 ± 1.29	t-test, not sig.	0.093
Mean Height (cm ± sd)	157 ± 6.38	155.3 ± 9.58	t-test, not sig.	0.307
Mean Weight (kg ± sd)	49.92 ± 6.94	49.76 ± 5.58	t-test, not sig.	0.921
Race:			χ <sup>2</sup> test, not sig.	0.697
Malay	50 (70%)	36 (69%)		
Chinese	12 (18%)	12 (23%)		
Indian	7 (10%)	4 (8%)		
Others	1 (2%)	0 (0%)		

**Table II**  
**Menstrual patterns of students in dysmenorrhoea and Non Dysmenorrhoea groups**

	Dysmenorrhoea (n=71)	Non dysmenorrhoea (n=52)	Statistical analysis	p value
Mean Menarche (years ± sd)	12.85 ± 1.25	12.98 ± 1.19	t-test, not sig.	0.492
11 - 12 years	32 (45%)	23 (44%)	χ <sup>2</sup> test, not sig.	0.090
13 years	24 (34%)	11 (21%)		
14 - 16 years	13 (18%)	18 (35%)		
Regularity of period:			χ <sup>2</sup> test, not sig.	0.365
Regular	58 (81%)	44 (85%)		
Irregular	13 (19%)	7 (7%)		
Cycle length:			χ <sup>2</sup> test, not sig.	0.465
Mean (days ± sd)	29.3 ± 4.4	30 ± 4.1		
↔ 30	19 (26%)	13 (25%)		
> 30	30 (42%)	20 (38%)		
Duration of Bleeding:			χ <sup>2</sup> test, not sig.	0.698
Mean (days ± sd)	6 ± 1.65	6.07 ± 1.65		
↔ 6	46 (66%)	32 (61%)		
> 6	25 (34%)	18 (39%)		
Amount of Menstrual Loss:			χ <sup>2</sup> test, not sig.	0.009
Heavy	22 (32%)	6 (12%)		
Moderate/little	46 (66%)	43 (82%)		

**Table III**  
**Distribution of age of menarche for all students according to race**

Race	Age of Menarche (years)						Total
	11	12	13	14	15	16	
Chinese	2	7	7	3	6	0	25
Malay	6	34	23	12	8	3	86
Indian	1	5	5	0	0	0	11
Others	0	0	0	1	0	0	1
Total	9	46	35	16	14	3	123

dizziness 13 cases (18%), vomiting 11 cases (15%), diarrhoea 16 cases (8%) and palpitation 1 case (1.4%). Out of 71 students with dysmenorrhoea, 35 students (49%) have 3 or more associated symptoms, 18 cases

(25%) had 2 associated symptoms, 13 cases (18%) had one associated symptom and 4 students (5%) had no associated symptoms. Out of 71 students with dysmenorrhoea, 58/71 (41%) just sleep and rest, 29/

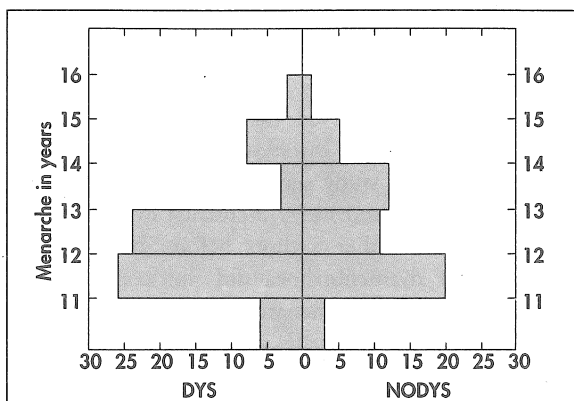
71 (41%) used paracetamol tablets, 12/71 (17%) used massage, 9/71 (12%) used pain killer, 11/71 (15%) used heat pad, 3/71 (4%) consulted a doctor, 3/71 (4%) used unspecified methods and 2/71(3%) used traditional medication to relieve their pain. Out of 71 students with dysmenorrhoea, 14 students (20%) had severe dysmenorrhoea and they always or occasionally missed classes whereas 56 students (79%) thought their dysmenorrhoea was not severe and they seldom or never missed classes.

**Discussion**

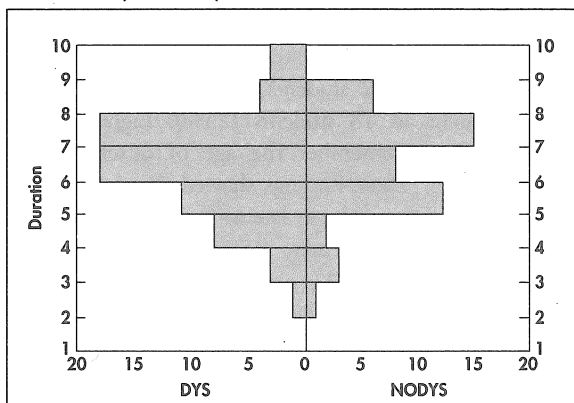
The overall prevalence of dysmenorrhoea in this study was 58%. Different authors had reported different prevalence rate throughout the world. Sundell *et al* reported a prevalence of 67%, Robinson *et al* reported a prevalence of 79.6% and Wilson *et al* reported a prevalence as high as 91%<sup>4,5,6</sup>. Thomas *et al*, in a study of 768 female residential students at the Obefemi Awolawo University, Ile-Ife Nigeria reported 72.5% prevalence rate<sup>7</sup>. Ng *et al* in their community based study in Singapore reported a prevalence rate of 51.3% which was much similar to the prevalence rate of this study<sup>8</sup>. Wide difference in the prevalence rate of this study and other reports confirmed the fact that the prevalence of dysmenorrhoea varies widely with study

**Table IV**  
**Characteristics of pain for dysmenorrhoea**  
(n = 69)

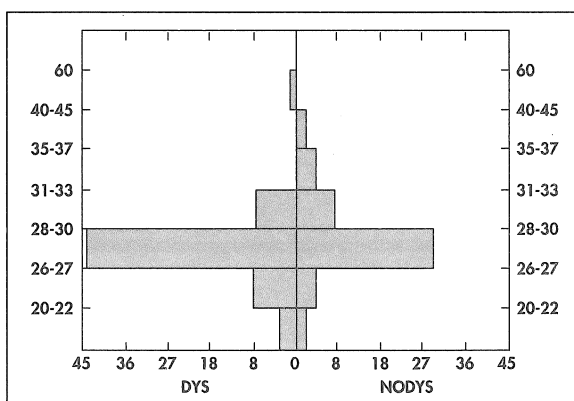
Characteristics of Pain	Number of Students	%
Cramp at lower abdomen	16	23
Backache	7	10
Pain at thighs and legs	2	3
Cramp at lower abdomen and backache	17	25
Cramp at lower abdomen and pain at thighs and legs	5	7
Backache and pain at thighs and legs	4	5
All of the above	18	26



**Fig. 1: Age of menarche in dysmenorrhoea (DYS) and non dysmenorrhoea students (NODYS)**



**Fig. 2: Duration of menstrual flow in dysmenorrhoea (DYS) and non dysmenorrhoea students (NODYS)**



**Fig. 3: Length of menstrual cycle in dysmenorrhoea (DYS) and non dysmenorrhoea students (NODYS)**

populations and geographic locations<sup>2</sup>. In this study, prevalence of dysmenorrhoea was not associated with duration of menstrual flow although Sundell *et al* and Taperi *et al* had observed the significant association of dysmenorrhoea and duration of menstrual flow in their study<sup>4,9</sup>. This study showed significant association of dysmenorrhoea and heavy menstrual loss which was not reported by other authors before. In this study prevalence of dysmenorrhoea did not correlate with such variables as early menarche, length of menstrual cycle or regularity of cycle which is consistent with findings by Sundell *et al*<sup>4</sup>.

Most of the literatures mentioned that initial onset of dysmenorrhoea is at menarche or within 2 to 4 years after menarche<sup>2,3</sup>. In this study, out of 71 students with dysmenorrhoea, pain was experienced on their very first period in 13 students (18%), within a year to 4 years after menarche in 32 students (45%) and 5 to 9 years after menarche in 18 students (25%). Eight students (11%) did not remember the age of onset of their menstrual pain. These findings showed that initial onset of dysmenorrhoea can be as late as 5 years or more after menarche. In this study, 95% of students with dysmenorrhoea (67/71) experienced one or more associated symptoms together with menstrual pain and a majority of those symptoms were weak and fatigue 66%, irritable and moody 65% and emotional 51%. A considerable number of students experienced bowel symptoms such as nausea (18%), vomiting (15%) and diarrhoea (18%). Crowell *et al* reported associated functional bowel disorder in 61% of dysmenorrhoea group<sup>10</sup>. Similar findings was reported by Heitkemper *et al*<sup>11</sup>. Thomas *et al* reported nausea and vomiting in 17.8% of dysmenorrhoea cases<sup>7</sup>. In a prevalence study done on university students in South Africa by Cronje *et al*, it was reported that 47.1% of students used medications and 17.6% of them consulted the physician

for dysmenorrhoea<sup>12</sup>. Ng *et al* reported that 6% of all women with dysmenorrhoea consulted a doctor for their problem<sup>8</sup>. In this study, 41% of all students with dysmenorrhoea used paracetamol tablets whereas 35% used traditional treatment such as massage, hot water bottle application and/or traditional medication. A small proportion of them (4%) consulted a doctor and it may be due to unawareness of treatment for their symptoms or may be due to the fear of consulting a doctor for their menstrual symptoms. 14 out of 71 students with dysmenorrhoea (20%) considered their menstrual pain as severe and they always or occasionally missed classes in this study. Taperi *et al* in their study on school absenteeism and dysmenorrhoea in 3370 school children in Finland, reported that 21% had stayed at home and 3% had both been absent and used medication several times due to dysmenorrhoea<sup>9</sup>. Ng *et al* reported that 10% of all employed women with dysmenorrhoea were having been sick and had to take leave due to dysmenorrhoea<sup>8</sup>. Robinson *et al* and Sundell *et al* reported prevalence of severe dysmenorrhoea as 18.2% and 10% respectively<sup>4,5</sup>.

We conclude that the prevalence rate of dysmenorrhoea in students from USM Perak Branch Campus is 58% and out of which 20% were reported to miss their classes because of dysmenorrhoea. It may be necessary to conduct a similar prevalence study of population in this country as dysmenorrhoea prevalence data for various groups of local population is limited.

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