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Original Article

DYSMENORRHOEA AMONG ADOLESCENT GIRLS - CHARACTERISTICS AND SYMPTOMS EXPERIENCED DURING MENSTRUATION

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Abstract:

Background : Dysmenorrhoea, recurrent cramping lower abdominal pain is one of the common problems experienced by many adolescent girls. The prevalence of dysmenorrhoea among adolescent girls ranges from 60 to 83 percent and many adolescence reported limitation on daily activities.

Method : A descriptive survey was conducted among 233 adolescent girls in four residential schools of Udupi district, Karnataka to identify dysmenorrhoea, characteristics and associated symptoms.

Results : The prevalence of dysmenorrhoea in adolescent girls was found to be 146(62.70%). Out of 233 samples 28(12%) had mild pain, 77(33%) had moderate pain and 41(17.6%) had severe pain during menstruation. Tiredness 110(75.34%), back pain 106(72.60%) and irritability 97(66.43%) were the most common symptoms associated with dysmenorrhoea. A positive association was found between dysmenorrhoea and family history.

Conclusion : Dysmenorrhoea is a very common problem among adolescent girls and they experience a number of physical, gastrointestinal and psychological symptoms. The findings of this study indicate the magnitude of the problem and the need for appropriate intervention through a change in lifestyle.

Keywords : Adolescent girls, dysmenorrhoea, menstrual characteristics

Introduction :

Adolescence is a transition period from childhood to adulthood and is characterized by a spurt in physical, endocrinal, emotional, and mental growth. As the direct reproducers of future generations, the health of adolescent girls influences not only their own health, but also the health of the future population. Almost a quarter of India's population comprises of girls below 20 years.[1]

One of the major physiological changes that take place in adolescent girls is the onset of menarche, which is often associated with problems of irregular menstruation, excessive bleeding, and dysmenorrhoea. Of these, dysmenorrhoea, recurrent, cramping lower abdominal pain during menstruation is one of the common problems experienced by many adolescent girls. The prevalence of dysmenorrhoea among adolescent females ranges from 60 to 83 percent. Many adolescents reported limitations on daily activities, such as missing school, sporting events, and other social activities, because of dysmenorrhoea. However, only 15 percent of females seek medical advice for menstrual pain, signifying the importance of screening all adolescent females for dysmenorrhoea.[2]

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The society for menstrual cycle research reports a survey conducted in Eastern Turkey with 1951 girls from 26 high schools on the effects of dysmenorrhoea on the school performance and relationship with family and friends. Unsurprisingly, more than half of the girls surveyed reported that dysmenorrhoea does affect their ability to perform well at school, with 50% of the girls reporting "lack

of focus on the content of the courses" and 26.9% reporting "not being able to answer the questions in exams despite having the knowledge". Majority 77.3% reported "having problems with their families" when they are experiencing menstrual pain. [3]

A descriptive cross-sectional study was conducted in the schools in Sidon city, Lebanon among 389 schoolgirls on their menstrual experiences. It shows that 97% used negative words like "disgusting" (30.5%), "painful" (9.1%), "bad" (8.8%), "I hate it" (5%), "It's hard" (3.9%), "depressing" (3.8%), "like a disease" (3.4%), "tiring" (3.4%), "I wish I never had it" (0.9%), "ridiculous" (0.9%), "like a virus", "embarrassing" (0.6%) and others (0.3%).The findings indicates that the dysmenorrhoea is higher among the girls having negative menstrual experiences .This shows that even though menstruation is a blessing most of the girls are not able to perceive it and consider it as a curse throughout their life due to the pain associated with it.[4]

Another study was conducted to find the incidence of dysmenorrhoea among 1648 adolescent girls in selected districts of Karnataka. In that the incidence of dysmenorrhoea was found to be 87%, of these 46.69% had severe pain during menstruation. Among those 63% of girls experienced dysmenorrhoea before the onset of bleeding and 37% experienced after the onset of bleeding[3].

Statement of the problem

A descriptive study to assess dysmenorrhoea, Characteristics and associated symptoms among adolescent girls in selected residential schools of Udupi district, Karnataka.

Aims and objectives

1. identify dysmenorrhoea and associated symptoms among adolescent girls in selected residential schools of Udupi district.
2. assess the charachteristics of dysmenorrhoea among adolescent girls in selected residential schools of Udupi district.
3. find out the association between dysmenorrhoea and selected variables.

Materials and methods :

A descriptive survey was used for the study. The settings for the study were residential schools in Udupi district. Only adolescent girls between 12 to 17 years, studying in residential schools were included in the study. Simple random sampling was used to select the four residential schools in Udupi district by using lottery method.The schools selected were Sharada residential school, Udupi, Sri Bhuvanendra residential school, Karkala, Little rock residential school, Brahmavar and Jawahar Navodaya Vidyalaya, Hebri.All the adolescent girls who met the sampling criteria were included in the study.The total sample size was 233.The data was collected from 5th January to 10th March 2013.

The tools developed by the researcher were validated by seven experts. . Data were collected in January 2013, after obtaining permission from concerned school authorities and participant's informed consent. Tool 1: Baseline proforma, Tool 2: Dysmenorrhoea questionnaire, Tool 3:Numerical Pain Scale. The baseline proforma consisted of the background information of the samples. Dysmenorrhoea questionnaire was constructed to know in detail regarding the history, characteristics and symptoms associated with dysmenorrhoea. It consist of four sections. Section 1 –Menstrual history, section 2 –Dysmenorrhoea associated symptom checklist, section 3 – Dysmenorrhoea characteristics and section 4 –Effects of Dysmenorrhoea. The intensity of pain was measured by using a numerical pain scale. It's a line with equidistant marks from 0 to 10.The minimum score was 0 and maximum score was 10.The scores were arbitrarily classified as mild dysmenorrhoea (1-3), moderate dysmenorrhoea (4-7) and severe dysmenorrhoea (8-10).

Content validity was established by the percentage of agreement of experts The test-retest method was employed to find out the reliability, where 'r' was found to be 0.98.

Results :

1. Description of baseline variables

Majority of the adolescent girls 159(68.2%) belonged to

the age group of 12 -14 years as shown in Table 1. In that most of the adolescent girls 151(64.8%) were staying in nuclear family. Out of 233 sample, most of the adolescent girls 117(50.2%) were having the family history of dysmenorrhoea. Majority of the adolescent girls 167(71.7%) were having mixed diet and in that 192(82.4%) of them were not having any known medical problems.

2. Dysmenorrhoea and associated symptoms

Majority of the adolescent girls 146 (62.7%) experienced dysmenorrhoea as shown in Table 2. Further analysis was conducted to find out the severity of dysmenorrhoea and from fig 1, it can be seen that out of 233 samples, 28(12%) had mild pain, 77(33%) had moderate pain and 41(17.6%) had severe pain during menstruation.

There were 24 symptoms grouped under physical, gastrointestinal, eliminational and psychological symptoms in dysmenorrhoea associated symptom checklist. The ranking of the symptoms in Table 3, showed tiredness 110(75.34%), back pain 106 (72.60%) and irritability 97(66.43%) as the most common symptoms associated with dysmenorrhoea. Diarrhoea 10(6.84%), nausea 16(10.9%) and vomiting 16(10.9%)were the least common symptoms associated with dysmenorrhoea among adolescent girls.

3. Dysmenorrhoea characteristics

3.1 Description of Menstrual history

Majority of the adolescent girls 146(62.7%) attained menarche at the age of 12-13 years and in that most of the adolescent girls 125(53.6%) are having a menstrual cycle of 21-28 days duration as shown in Table 5. Of the total 233, most of the adolescent girls 135(57.9%) are having a menstruation for 5-6 days in a month and they are changing an average of 2-3 soaked pads per day147(63.1%) as depicted in table 4.

3.2 Description of samples based on menstrual pain characteristics.

As depicted in table 5, most of the adolescent girls 68 (46.6%) are having dysmenorrhoea from their first menstruation onwards. It's also found that majority of the adolescent girls 71(48.6%) experienced dysmenorrhoea for 1-4 hours. In that most of the adolescent girls 66(45.2%) are having severe pain during their first day of menstruation and when considering the body parts having pain most of them 53(36.3%) are having back pain and lower abdominal pain.

3.3 Description on the effects of menstrual pain

Dysmenorrhoea affects the studies of most of the adolescent girls 53(36.3%), in that majority of them are feeling weak and tired. When considering the hours of rest, majority 77(52.7%) are taking rest only for <6 hrs during the time of dysmenorrhoea. Only least number of participants shows those dysmenorrhoea affects their daily activities 66(44.5%) and sleep 57(39%). Further analysis was conducted to know about the action taken for dysmenorrhoea during school hours and results showed that majority of the adolescent girls 74(50.7%) manage the situation by self and 42(28.8%) ask permission from teacher and go to hostel during the time of dysmenorrhoea. Only very few adolescent girls are having the habit of skipping meals during dysmenorrhoea and in that most of them are skipping lunch 35(23.9%).

4) Association between dysmenorrhoea and selected variables

Study showed an association between family history and dysmenorrhoea (Z=16.673,p-value=0.001) and there is no association between age in years, onset of menarche, duration of menstrual flow, dietary pattern and family history of dysmenorrhoea.

Table 1: Frequency and percentage distribution of baseline variables. N= 233

Sl.no	Sample characteristics	Frequency	Percentage (%)
1)	Age in years		
	12-14	159	68.2
	15-17	74	31.8
2)	Year of study		
	7^{th}	45	19.3
	8^{th}	51	21.9
	9^{th}	68	29.2
	10^{th}	69	29.6
3)	Type of family		
	Nuclear Family	151	64.8

Sl.no	Sample characteristics	Frequency	Percentage (%)
	Joint family	79	33.9
	Extended Family	3	1.3
4)	Family history of dysmenorrhoea		
	yes	117	50.2
	no	116	49.8
5)	Dietary pattern		
	vegetarian	66	28.3
	mixed diet	167	71.7
6)	Any known medical problems		
	Anemia	12	5.2
	Headache	17	7.3
	other problems	12	5.2
	No	192	82.4

Table 2: Frequency and percentage of dysmenorrhoea

N=233

Presence of dysmenorrhoea	Frequency	Percentage (%)
Yes	146	62.7
No	87	37.3
Total	233	100.0

Table 3: Frequency and percentage distribution of the dysmenorrhoea associated symptoms N=146

Physical symptoms	Frequency	Percentage (%)	Ranking of the symptoms
Tiredness	110	75.3	1
Headache	42	28.7	11
Giddiness	33	22.6	15
Sleeplessness	47	32.19	10
Increased sleep	41	28.08	12
feeling fullness in lower abdomen	71	48.6	7
back pain	106	72.6	2
tenderness of breasts	24	16.4	17
knee pain	50	34.2	9
swelling of legs	23	15.7	18
facial puffiness	33	22.6	15
Gastrointestinal symptoms			
Loss of appetite	39	26.7	13
Increased appetite	22	15	19
Nausea	16	10.9	20
Vomiting	16	10.9	20
Eliminational symptoms			
constipation	29	19.8	16
Diarrhea	10	6.8	21
Increased frequency of urination	50	34.2	9
Profuse sweating	38	26	14
Psychological symptoms			
Depression	57	39	8
Mood swings	78	53.4	5
Irritability	97	66.4	3
Inability to concentrate	82	56.1	4
Nervousness	77	52.7	6

Table 4: Frequency and percentage distribution based on menstrual history. N=233

Sl.no	Sample characteristics	Frequency	Percentage (%)
1)	Age of menarche		
	<12	54	23.2
	12-13	146	62.7
	14-15	31	13.3
	<15	2	0.9

Sl.no	Sample characteristics	Frequency	Percentage (%)
2)	Duration of menstrual cycle		
	15-20	33	14.2
	21-28	125	53.6
	29-35	50	21.5
	>35	25	10.7
3)	Number of days of menstruation		
	<3	10	146
	3-4	67	87
	5-6	135	4.3
	>6	21	28.8
4)	Presence of abdominal pain		
	yes	57.9	62.7
	no	9.0	37.3
5)	Number of soaked pads changed per day		
	<2	31	13.3
	2-3	147	63.1
	4-5	53	22.7
	>5	2	0.9

Table 5 : Frequency and percentage distribution of adolescent girls based on dysmenorrhoea characteristics N=146

Sl.no	Sample characteristics	Frequency	Percentage (%)
1)	Experience of pain due to menstruation		
	first menstruation onwards	68	46.6
	within an year after first menstruation	34	23.3
	after one year	30	20.5
	after two or more years	14	9.6
2)	Day of menstruation with severe pain		
	One day before the onset of menstruation	31	21.3
	On the first day	66	45.2
	On the second day	50	34.24
	Any other days	13	8.90
3)	Total duration of pain in hours		
	<1	39	26.7
	1-4	71	48.6
	5-8	28	19.2
	>8	8	5.5
4)	Body parts having pain		
	lower abdomen only	46	31.5
	lower abdomen and back only	53	36.3
	lower abdomen, back and legs	43	29.5
	other body parts	4	2.7
5)	Measures taken to get relief from abdominal pain:		
	medicines	15	10.2
	hot applications	18	12.32
	massage	15	10.2
	bedrest	108	73.97
	any other	5	3.42
	no measures	4	2.73

Keywords : Adolescent girls, dysmenorrhoea, menstrual characteristics. - Nayana S. George

Table 6: Frequency and percentage distribution of the effects of menstrual pain N=146

Sl.no	Sample characteristics	Frequency	Percentage(%)
1)	Effect on daily activities		
	yes	65	44.5
	no	81	55.5
2)	Effect on studies		
	school absenteeism	5	3.4
	feeling weak and tired	53	36.3
	lack of concentration	32	21.91
	Not interested to study	21	14.38
	No	48	32.9
3)	Effect on sleep		
	yes	57	39
	no	89	61
4)	Rest during the time of dysmenorrhoea		
	<6hrs	77	52.7
	6-18hrs	24	16.4
	18-24hrs	5	3.4
	>24hrs	2	1.4
	No	38	26
5)	Action taken for dysmenorrhoea during school hours		
	inform class teacher and seek help	8	5.4
	inform friends and get help	30	20.5
	manage the situation by self	74	50.7
	ask permission from teacher and going to hostel	42	28.8
	other measures	2	1.8
6)	Skipping meals during dysmenorrhoea		
	breakfast	17	11.6
	lunch	35	23.9
	dinner	21	14.3
	any other	5	3.4
	No	84	57.5

Table 7: Association between dysmenorrhoea categories and selected variables. n=146

Variables	Dysmenorrhea categories			Chi-square	*p*-value	Significance
	mild	moderate	severe			
1. Age in years						
12-14	16	53	25	4.283	0.232*	Not significant
15-17	12	24	16			
2. Onsetof menarche						
<12	8	17	15			
12-13	18	48	19	10.377	0.259**	Not significant
14-15	2	11	7			
>15	0	1	0			
3. Duration of menstrual flow						
<3	1	3	1	11.277	0.224**	Not significant
3-4	12	18	9			
5-6	13	46	25			
>6	2	10	6			
4. Dietary pattern						
vegetarian	4	22	13	3.266	0.352*	Not significant
mixed diet	25	56	27			

Variables	Dysmenorrhea categories			Chi-square	*p*-value	Significance
	mild	moderate	severe			
7. Family history of dysmenorrhea						
yes	16	40	30	16.673	0.001*	Significant
no	12	37	11			
8. Sleep						
yes	10	32	15	0.439	0.803*	Not significant
No	18	45	26			

*Pearson chi-square test was used
**Fissure exact test was used for categories with less than 5 samples.

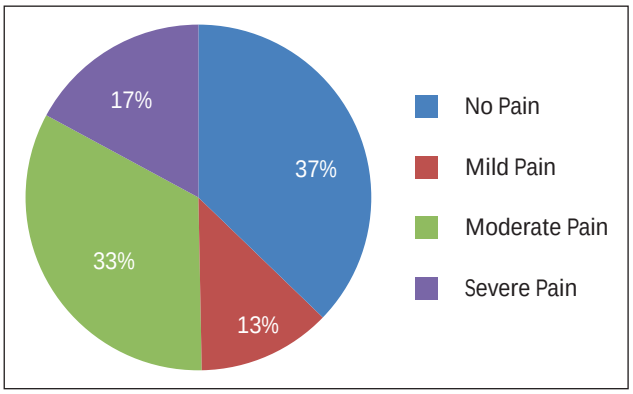

Fig 1: Pie diagram showing percentage of adolescent girls with dysmenorrhoea.

Discussion :

1. Dysmenorrhoea characteristics

A cross sectional descriptive survey was conducted by Charu Shrotriya and Amita Ray in Mangalore on 560 female medical students, to evaluate the menstrual characteristics. The study findings showed that most of the participants 84.2% (472) had started menstruating between 12-14 years of age.. A large chunk of students had menstrual cycle duration of 21 to 35 days; 97.2 %(533) and a very small number (2.8%) had cycle length <21 days and >35 days. Most of the interviewees did not have dysmenorrhoea among their immediate family members; 60.5% (339). The study findings support the present study findings except incase of family history of dysmenorrhoea where 50% of participants had a family history of dysmenorrhoea[6].

A community based cross-sectional study was conducted in 2013, among 440 adolescent girls in the rural area of Bijapur, Karnataka to know their menstrual pattern. The results showed that mean age of menarche of adolescent girls in the present study was 14 years; mean duration of blood flow 3.9±5.07 days and mean intermenstrual period 28.7±3.26 day's .The findings support the present study findings.[7]

The findings of the present study indicated that 146(62.7%) reported to have menstrual disturbance, of these treatment taken for menstrual discomforts bed rest(73.97%),medicines (10.2%),hot applications (12.32%) and other measures like lime juice, fenugreek water (3.4%).A study was conducted on prevalence and impact of dysmenorrhoea on Hispanic female adolescents. A total of 706 Hispanic adolescent girls were interviewed.85% reported to have dysmenorrhoea, of these treatments taken for dysmenorrhoea included rest (58%),medications (52%),Hot water application (26%),49% consulted the physician. The study supports the findings of the present study.[2]

2. Dysmenorrhoea and associated symptoms

The findings were supported by a cross sectional study conducted in Egypt by Eman Mohammed among the four secondary schools for girls in Assuit city. Simple random sampling was used to select 845 adolescent girls. The results of the study showed that the prevalence of dysmenorrhoea was 76.1% (n = 643); of these, 26.6% described their menstrual pain as mild, 32.0% as moderate and 41.4% as severe.[8]

An exploratory survey conducted by Anil K Agarwal to study evidence of severity of dysmenorrhoea with associated symptoms and general health status. Multistage cluster sampling technique was used to select 970 adolescent girls of age 15 to 20 years studying in selected higher secondary schools. The results of the study showed that the three

most common symptoms associated with menstruation were lethargy and tiredness (first), depression (second) and inability to concentrate in work (third), whereas the ranking of these symptoms on the day after the stoppage of menstruation showed depression as the first common symptom. This study support the present study findings[1]

3. Association between dysmenorrhoea and selected variables

The findings are contradicted by a cross-sectional study conducted on 500 healthy females aged 18-28 years in Mysore. Standardized Self-reporting questionnaires were used to obtain relevant data. Majority (72.9%) of the participants experienced menstrual pain. More than 50% dysmenorrhoeic subjects experienced pain every menstrual cycle. Among the factors studied menstrual flow, length of flow and family history exhibited positive association while family size had an inverse association to a significant extent ($p = 0.01$).[9]

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Conclusion :

Dysmenorrhoea is a very common problem among adolescent girls and they experience a number of physical, gastrointestinal, eliminational and psychological symptoms associated with it . Adolescent girls, almost silently suffer the pain by dysmenorrhoea and the symptoms associated with it. It is found to be a leading cause of low academic performance. The finding of this study indicates the need for appropriate intervention through lifestyle changes.

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