Dysmenorrhea among Adolescent Girls in Selected Schools at Mangalore with View to Develop and Distribute an Information Booklet

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Abstract :
Background: *Primary dysmenorrhea is one of the commonest menstrual problems among adolescent girls which affects their daily activities and academic activities. Hence, preventing and managing dysmenorrhea is a crucial aspect of adolescent reproductive health. Providing health education is an ideal method to bring about awareness regarding the management of dysmenorrhea which further can help them to improve their reproductive health.*
Methods And Materials: *A descriptive design was adopted. Data was collected with structured interview schedule among 300 adolescent girls studying in Mangalore One CBSC School and Kanachur Public School, Mangalore.*
Result: *The mean age at menarche of the participants was 12.7 ± 0.697 years. More than half of adolescent girls (52.3%) had 3 to 4 days of menses with the cycle of 28 to 30 days (64.7%). Three fourth of them had experienced dysmenorrhea in last three cycles among which 77.2% had mild symptoms and remaining had moderate symptoms. All most all of the girls (99.6%) have abdominal pain followed by irritability (76.4%). Other common symptoms experienced by girls were pain radiated to the thighs and legs (48%), back ache (39.6%), lack of concentration (37.8%), headache (30.7%). About 48% of the adolescent girls had limitation of daily activities during menstruation. Majority of the participants (70.7%) did not have any physician consultation and 77.8% use self medications, mainly tablet paracetamol (67.6%). There was a significant association between the level of dysmenorrhea and age, educational status and age at menarche of adolescent girls (p< 0.05).*
Conclusion: *Most of the adolescent girls have mild to moderate level of dysmenorrhea which has affected their daily activities. Hence educational activities are necessary to increase the adolescent girls' awareness on dysmenorrhea and its management.*
Keywords: *Adolescent girls, Dysmenorrhea, Menstruation, Menstrual problems, Reproductive health*

I. Introduction

Adolescence, one of the most crucial stages of life, is a period of transition from childhood to adulthood between ages 10 and 19 years[1, 2]. It is a period of extreme stress and strain due to the various physiological and psychological changes that occur during this period. One of the main physiological changes in adolescent period is puberty. Puberty is the process of physical changes by which a child's body matures into adulthood and become capable of sexual reproduction. There are many pubertal changes in the girls and one of the major is the onset of menstruation.

Menstruation is the periodic discharge of blood, mucus and epithelial cells from uterus which occurs every month. This is an important landmark in the process of growth and maturation and prepares them for motherhood**.** Even though menstruation is a physiological process, many females face various types of menstrual problems among which dysmenorrhea is the commonest one. Primary dysmenorrhea is very common among adolescent girls and around 60 – 90% of them suffer from this condition[1]. It is a group of symptoms which includes either sharp, intermittent pain, or dull aching pain, usually in pelvic region or lower abdomen. Sometime dysmenorrhea is associated with headache, nausea and vomiting, diarrhoea or constipation, fainting, premenstrual symptoms such as tender breasts and swollen abdomen, which may continue throughout the period. For most women pain usually starts shortly before or during their menstrual period, peak after 24 hours, and subsides after 2-3 days[3].

The major cause of primary dysmenorrhea is still not clear. It is said that prostaglandin and oxtocin hormone initiate uterine muscle contraction which reduces the blood supply to the uterus. These contractions, and the resulting temporary oxygen deprivation to nearby tissues, are responsible for the pain or "cramps" experienced during menstruation[3]. The factors like nulliparity, obesity, cigarette smoking and positive family

history, stress, family history of dysmenorrhea, diet, depression, and abuse are highly associated with the prevalence of primary dysmenorrhea[3, 4].

Even though primary dysmenorrhea does not have serious complications but it affects the quality of life of adolescent girls. About ten percent of women who have this type of dysmenorrhea cannot work, attend school, or participate in their normal daily activities which can further lead to poor academic result. They feel reluctant to attend social functions and remain isolated during this period[5]. In additional to this, they use over the counter medicines which may lead to dangerous adverse effects and infertility[6].

The period of adolescence for a girl is a period of physical and psychological preparation for safe motherhood. 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. Hence, to maintain the good health of every adolescent girl is very essential to make her reproductive health better[7]. Literature reveals that most of the adolescent girls are suffering from dysmenorrhea and it affects their daily life and academic activities. Hence, it is necessary to find the level of dysmenorrhea among adolescents and help them to manage it. This study aims to assess the level of dysmenorrhea among adolescent girls and increase their awareness regarding dysmenorrhea and its management by developing and distributing an informational book let regarding dysmenorrhea and its management.

II. Methods And Materials

1.1 Methods
A descriptive survey approach was adopted in this study. Three hundred adolescent girls of age between 13- 17 years were selected for samples by using non- probability, purposive sampling technique from Mangalore One CBSE School and Kanachur Public School, Mangalore.

1.2 Materials
A structured questionnaire was used as a tool for data collection. The questionnaire consisted of section I, II and III. Section I included demographic proforma, section II included questions related to menstruation and section III included 15 items of the symptoms checklist of symptoms of dysmenorrhea.

1.3 Validity, Reliability of the Tool and Pilot Study
Content validity of the tool was established with the help of experts form related field. In order to establish the reliability of the tool, it was administered to 10 adolescent girls and was calculated by using Kuder Richardson's formula. The reliability (r) was 0.86 which indicated that the tool was reliable. Pilot study was conducted in ST. Sebastian English Medium High School, Ullal, Mangalore. The data obtained were analyzed by using descriptive and inferential statistics. After conducting the pilot study, it was found that the study was feasible and researchable.

2.4 Data Collection
Data was collected from 10th October to 13th October 2014. Prior to the data collection, formal permission was obtained from the Principals of Mangalore One CBSE School and Kanachur Public School. Subjects were informed about the nature and purpose of the study and informed consent was taken. Data was collected by using self administered technique. The total time taken by respondents to complete the questionnaire was one hour. Data was organized, tabulated and entered in master sheets. Demographic data was analyzed by computing frequency and percentage. Level of dysmenorrhea among adolescent girls was calculated by mean and standard deviation. To find the level of dysmenorrhea among adolescent girls of three point score was used. The score was graded as mild (1-5 score), moderate (6-10 score) and severe (11-15). A factor associated with dysmenorrhea was calculated by using Chi-square test. Analyzed data was presented in the form of tables and figures.

III. Results

3.1 Demographic Characteristics of adolescent girls
Three hundred adolescent girls of 13-17 years girls studying in class 7 to 10 in Mangalore One CBSE School and Kanachur Public school at Mangalore were taken as a sample for the study. Majority of adolescent girls (44.3%) were of 14 years and Muslim (37.3%). Most of them (34.4%) belong to ninth standard and most of their mothers' educational status was primary education (34.3%). About half of the adolescent girls (49.7%) were from nuclear family and joint family. Less than half (41.3%) of girls' family income was Rs.7,501 to 10,000 and most of the adolescent girls (85.3%) were having normal body mass index. Detail illustration of demographic characteristics of women is presented in Table 1.

3.2 Menstrual characteristics and level of dysmenorrhea among adolescent girls

Findings of the present study disclosed that most of the girls (48.3%) had their first menstruation at the age of 13 years. The mean age at menarche of the participants was 12.7 ± 0.697 years. More than half of adolescent girls (52.3%) had 3 to 4 days of menses (bleeding) and 64.7% of them had 28 to 30 days of duration of menstrual cycle. Three fourth of the adolescent girls (75%) experienced dysmenorrhea during menstruation among which majority of the adolescent girls (77.2%) had the mild symptoms and remaining had moderate symptoms. It is evidenced that all most all of the girls (99.6%) have abdominal pain followed by irritability (76.4%). Less than half of the girls experienced other symptoms like pain radiated to the thighs and legs (48%), back ache (39.6%), lack of concentration (37.8%), headache (30.7%), vomiting (21.3%), nausea (14.2%), fainting (13.8%), breast tenderness and cramps (13.3%), diarrhoea and dizziness (8%), constipation (5.8%) and disorientation (3.6%). About 48% of the adolescent girls' had limitation of daily activities during menstruation and 42% of the adolescent girls' duration of menstrual pain was confined to 2 to 3 days. All the adolescent girls' (100%) are taking rest during their menstrual pain. Majority of the participants (70.7%) did not have any physician consultation. About 27.6 % of the adolescent girls use hot water bottle as measures to get relief from menstrual pain. Majority of the adolescent girls (77.8%) use self medications among which 67.6% of them use tablet paracetamol. The information is displayed in Table 2 and 3 and figure 1.

3.3 Association between the level of dysmenorrhea and selected variables

Analysis of the association between the level of dysmenorrhea and selected variables reveals that there is significant association between level of dysmenorrhea and age, educational status and age at menarche of adolescent girls (P < 0.05). There is no significance association between the level of dysmenorrhea of adolescent girls and religion, mother's education, type of family, body mass index, monthly income, duration of menses and frequency of menstrual cycle and religion (P > 0.05). The detail result is presented in Table 4.

IV.   Discussion

Dysmenorrhea is the most common problem among adolescent girls. Dysmenorrhea as such have no medical complications in themselves, but they often interfere with the daily routine activities of the adolescents, increases absenteeism in schools, affects in their social activities and reduces the academic performances. Consequently, it has been considered a leading cause of occupational and school absenteeism among women.

Three hundred adolescent girls studying in standard seventh to tenth of Mangalore One School and Kanachur Public School were taken as a sample for the study. Less than half (44.3%) of the adolescent girls were 14 years, belonged to Muslim religion (37.7%) and were studying in ninth standard (34%). Most of the adolescent girls' mothers' educational status were (34.3%) had primary education. About half of the adolescent girls (49.7%) were from nuclear family and had family income was equal or less than Rs.7,501 to 10,000 (41.3%). Majority of the adolescent girls (85.3%) were having normal body mass index. The mean BMI of adolescent girls was 19.9 ± 1.4. This result is supported by the study conducted by Hong JU, Mark J, Mishra G in which the mean BMI of the adolescent girls was 21.69 ± 3.27 kg/m2[4].

This study reveals that most of the girls (48.3%) had their first menstruation at the age of 13 years. The mean age at menarche of the participants was 12.7 ± 0.697 years. Similarly, a study conducted in Howrah district, India also revealed that the mean age at menarche was 12.1 years among urban and 12.2 years among the rural adolescent girls[8]. More than half of adolescent girls (52.3%) had 3 to 4 days of menses (bleeding) and 64.7% of them had 28 to 30 days of duration of menstrual cycle. This result is supported by a study conducted by Kiran B, Sandozi T, Akila , Chakraborty A, Meherban R and Rani J which also depicted that the average duration between two periods and the duration of menstrual flow were 28.34 ± 7.54 days and 4.5 ± 2.45 days respectively[9].

This study also illustrated that three fourth of the adolescent girls (75%) experienced dysmenorrhea (abdominal pain) in last three cycles during menstruation among which majority of the adolescent girls (77.2%) had the mild symptoms and remaining had moderate symptoms. It is evidenced that all most all of the girls (99.6%) have abdominal pain followed by irritability (76.4%). Less than half of the girls experienced other symptoms like pain radiated to the thighs and legs (48%), back ache (39.6%), lack of concentration (37.8%), headache (30.7%) and remaining other symptoms. About 48% of the adolescent girls' had limitation of daily activities during menstruation and 42% of the adolescent girls' duration of menstrual pain was confined to 2 to 3 days. Majority of the participants (70.7%) did not have any physician consultation. Majority of the adolescent girls (77.8%) use self medications among which 67.6% of them use tablet paracetamol. Contradiction to this, a study conducted by Chaudhary A and Singh A reported that prevalence of dysmenorrhea was 59.82%. Sickness absenteeism due to dysmenorrhea was in 25.85% of girls. Among the dysmenorrhic girls 52.3% had moderate pain and 25% had severe pain. The symptoms seen were mood swings, irritability, difficulty in concentrating and poor school performances. Very few of the girls (8.6%) went for physician's consultation, 15.6% took pain killers, 12.5% used hot water bottles, 3.1% practiced exercises and 26.6% practiced dietary modifications for

reducing pain[10]. Analysis of the association between the level of dysmenorrhea among adolescent girls' and their selected demographic variables reveals that there is significant association between level of dysmenorrhea and age of adolescent girls (p, < 0.05), educational status (p, < 0.05) and age at menarche (p< 0.05). Likewise, a study conducted by Mohammad BH, Loo AM, Hossein, Mehdi MA also reported that there was a significant difference between participants regarding their knowledge and age (p<0.05)[11].

Table 1: Description of Demographic Characteristics of Adolescent Girls n=300

Sl.No.	Demographic variable	Frequency	Percentage
1.	Age in years		
	i. 13 years	79	26.3
	ii. 14 years	133	44.3
	iii. 15 years	88	29.3
2.	Religion		
	i. Hindu	75	25
	ii. Christian	100	33.3
	iii. Muslim	112	37.3
	iv. Others	13	4.3
3.	Educational status		
	i. VII th standard	6	2
	ii. VIIIth standard	97	32.3
	iii. IX th standard	102	34
	iv. X th standard	95	31.7
4.	Mothers' education		
	i. No formal education	31	10
	ii. Primary	103	34.3
	iii. Secondary	93	33
	iv. Higher secondary	48	14
	v. Graduate	2	7.3
	vi. Post Graduate	3	1
5.	Type of family		
	i. Nuclear	149	49.7
	ii. Joint	147	49
	iii. Extended	4	1.3
6.	Monthly Income in Rs		
	i. Equal or less than 5,000	11	3.7
	ii. 5,001-7,500	63	21
	iii. 7,501-10,000	124	41.3
	iv. Above 10,000	102	34
7.	Body Mass Index (BMI)		
	i. Under Weight	43	14.3
	ii. Normal	257	85.7

Table 2: Characteristics of menstruation n = 300

Sl.No.	Variables	Frequency	Percentage
1.	Age at menarche		
	i. < or equal to 12 years	113	40
	ii. 13 years	37.7	13.3
	iii. 14 years	145	2
	iv. > or equal to 15 years	48.3	0.7
2.	Duration of menses in days		
	i. 1 – 2 days	40	13.3
	ii. 3 – 4 days	157	52.3
	iii. 5 – 6 days	98	32.7
	iv. More than 6 days	5	1.7
3.	Menstrual cycle (in days)		
	i. Less than 28 days	53	17.7
	ii. 28 – 30 days	194	64.7
	iii. 31-35 days	49	16.3
	iv. More than 35 days	4	1.3
4.	Presence of dysmenorrhea		
	i. Yes	225	75
	ii. No	75	25
5.	Nature of last menstrual cycle		
	i. Menstruation with pain but rare limitation of daily activities	108	48
	ii. Menstruation with severe pain with limitation in daily activities	66	29.3
	iii. Menstruation with severe pain with the studies get affected	35	15.6
	iv. Menstruation with severe pain with absenting from class	16	7.1
6.	Physical consultation for dysmenorrhea		
	i. Yes	66	29.3
	ii. No	159	70.7

7.	Period pain begins		
	i. 1-4 hours before menstruation	82	36.4
	ii. 1-4 hours after menstruation	113	50.2
	iii. 4-8 hours after menstruation	29	12.9
	iv. 5-15 hours after menstruation	1	0.4
8.	Self – medication		
	i. Yes	66	77.8
	ii. No	159	22.2
9.	Other measures taken to relieve the pain		
	i. Prone position	49	21.8
	ii. Massage	34	15.1
	iii. Hot drinks	61	26.7
	iv. Hot water bottle	60	26.6
	v. Hot bag	21	8.9

Figure 1: Description of level of dysmenorrhea among adolescent girls
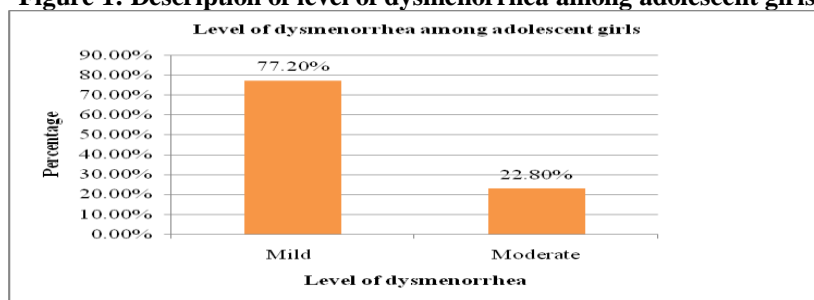
Table 4: Analysis of symptoms of dysmenorrhea among adolescent girls

Sl. No.	Symptoms	Frequency	Percentage
1	Abdominal pain	224	99.6
2	Cramps	30	13.3
3	Back ache	89	39.6
4	Pain radiates to thighs and legs	108	48
5	Breast tenderness	30	13.3
6	Nausea	32	14.2
7	Vomiting	48	21.3
8	Diarrhoea	18	8
9	Constipation	13	5.8
10	Head ache	69	30.7
11	Fainting	31	13.8
12	Dizziness	18	8
13	Disorientation	8	3.6
14	Irritability	172	76.4
15	Lack of concentration	85	37.8

Table 4: Association between the level of dysmenorrhea and selected variables

Sl. No	Selected Variables	Calculated chi-square (χ^2)	P value	Inference
1.	Age of adolescent girls	8.08	0.01	Significant
2.	Religion	3.39	0.33	Not significant
3.	Educational status	11.08	0.01	Significant
4.	Mother's education	1.27	0.93	Not significant
5.	Type of family	1.3	0.5	Not significant
6.	Monthly family income	3.09	0.37	Not significant
7.	Body mass index	1.52	0.21	Not significant
8.	Age at menarche	9.032	0.02	Significant
9.	Duration of menses	6.51	0.08	Not significant
10.	Frequency of menstrual cycle	5.9	0.11	Not significant

V.   Conclusion

The findings of the study illustrated that dysmenorrhea is common in adolescent girls and majority of them have mild dysmenorrhea. Most of the adolescent girls suffering from dysmenorrhea are not going for physical consultation and take self medication. Thus, health awareness programs are needed to increase the awareness regarding dysmenorrhea and its management among adolescent girls. The best place to impart the education is schools. Nursing students and peer groups can be mobilized to conduct these educational programs. Governmental and non-governmental organization should also take initiation to create awareness in public. In addition to this, further researches should be conducted to cover other community areas and different part of the country in terms of knowledge, attitudes and practice on dysmenorrhea and its management.

Acknowledgement

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