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Original Research Article

Menstrual irregularities and related risk factors among adolescent girls

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ABSTRACT

Background: Irregular menstrual cycle is a common issue faced by females in their reproductive age group. Problems associated with menstruation are really challenging faced by adolescent girls. Females face various problems associated with menstruation once they attain puberty. The main aim of the study was to identify menstrual irregularities and related risk factors among adolescent girls in selected district, Kerala.
Methods: Descriptive survey design and total enumeration sampling technique was used for the study. The study was conducted in 356 adolescent girls between the age group of 17-22 years. Data was collected by using a semi-structured questionnaire.
Results: The mean age of the adolescent girls was 20 years. Majority of them belong to middle-class family (97.2%) with normal BMI (68%). 84% (299) girls have regular menstrual cycle and 16% of the girls have irregular menstrual cycle. Only 24 (6.7%) of girls have amenorrhea. Considerable number of adolescent girls 51 (14.3%) had light menstrual flow. More than half (65%) of the adolescent girls had menorrhagia. Polymenorrhagiais experienced by 11 (3.1%) of adolescent girls. Dysmenorrhea was present in 264 (94%) girls followed by menometrorrhagia (16%) and oligomenorrhea (14.9%).
Conclusions: Menstrual irregularities are very common in reproductive age group of females and the common menstrual irregularities found were dysmenorrhea, oligomenorrhea and menometrorrhagia. Hypomenorrhea and menometrorrhagia has significant association with age.

Keywords: Menstrual irregularities, Adolescent girls menstruation, Dysmenorrhea

INTRODUCTION

Adolescent is the transitional stage of life in between childhood and adulthood and experienced by physical, mental and psychological changes. When the girls attain puberty, they were passing through a stage of menstruation. Menstruation is a period in which vaginal secretion, blood, cervical mucus flow from uterus of non-pregnant women.[1] First period of menstruation is called menarche. Menstrual irregularities are the common problems faced by girls during their period. Due to the adaptation of new life style, menstrual irregularities are very common in adolescent girls.[2] Menstrual disorders are the difficulties which interfere normal menstrual cycle of an adolescent girls they involve painful menstruation, absence of bleeding or heavy bleeding. There are various menstrual disorders that are differ in signs and symptoms. There are so many factors which causes menstrual irregularities like hormonal influences, lack of exercises, thyroid problems, food habits.[3,4]

Menstrual irregularities are the one of the main reasons for school absenteeism among adolescent girls. Dysmenorrhea, irregularities in menstrual flow such as amenorrhea, polymenorrhagia, oligomenorrhea are the common problems seen in adolescent girls.[4] Menstrual problem around adolescent girls are usual and notable source of morbidity.[5,6,18] Another study suggested the

necessity of qualitative research in unpacking adolescent girls' experiences with menarche and menstruation.[9] Early detection and prevention of menstrual irregularities among adolescent girls are necessary.[13] A systematic review suggests that, more attention should be paid to improve the practice of primary care and reproductive health professionals about the dealing of menstrual morbidities.[14,17] The present study aimed to identify the menstrual irregularities and related risk factors among adolescent girls.

METHODS

Quantitative research approach was adopted for the study with descriptive survey design. The study was conducted in Amrita College of Nursing, Kerala from September 2020 to November 2020. Samples were selected using total enumeration sampling technique and sample size of the study was 356 adolescent girls. The study included adolescent girls who met inclusion criteria. A semi structured questionnaire was used to collect data of four section. Section A: demographic data, section B: menstrual history of the participants section C: check list to assess the menstrual irregularities and section D: menstural irregularities.

The study was carried out after obtaining ethical clearance of institutional review board from the IRB of the institution. Informed consent was taken from the respondents after giving information about the nature of the study and use of the data. The menstrual irregularities and related risk factors among adolescent girls were analysed by using frequency distribution table and association between menstrual irregularities and selected demographic variables was analysed using Chi-square test.[7]

RESULTS

Table 1 reveals that majority, 214 (60.1%) of the adolescent girls are belong to the age group of below 20. Most of the adolescent girls 346 (97.2%) are from middle class family. About 242 (68%) of them having BMI less than or equal to 25.

Table 2 shows that 62.6% of adolescent girls attained menarche at the age of 11 to 13 years. Most of the adolescent girls (77.2%) having pain with menstruation and 94.4% of adolescent girls using 1 to 5 pads per day.

Table 1: Distribution of socio-demographic characteristics of the adolescent girls (n=356).

S. No	Variables	Frequency (F)	Percentage (%)
1	Age (in years)		
	Less than 20 years	214	60.1
	Greater than20years	142	39.9
2	Place of residence		
	Rural	117	32.9
	Urban	239	67.1
3	BMI status		
	Less than or equal to 18	57	16
	Less than or equal to 25	242	68
	Less than or equal to 29	57	16
4	Socio economic status		
	Lower class	5	1.4
	Middle class	346	97.2
	Upper class	5	1.4

Table 2: Menstrual history of adolescent girls (n=356).

S. No.	Variables	Frequency (F)	Percentage (%)
1	Age at menarche		
	9-10 years	18	5.1
	11-13yers	223	62.6
	14-16 years	115	32.3
2	Menstrual rhythm		
	Regular	275	77.2
	Irregular	81	22.8
3	Menstrual flow		
	Mild	29	8.1
	Moderate	311	87.4

Continued.

S. No.	Variables	Frequency (F)	Percentage (%)
	Severe	16	4.5
4	Consistency of menstrual bleeding		
	With clots	227	63.8
	Without clots	129	36.2
5	Menstruation days		
	2-4	115	32.3
	4-6	149	41.9
	3-7	74	20.85
	Greater than 7	18	5.1
6	Pain with menstruation		
	Yes	275	77.2
	No	81	22.8
7	Degree of pain		
	Mild	80	22.5
	Moderate	149	41.9
	Severe	64	18
8	Pain onset		
	At the day of menstruation	239	67.1
	One day prior menstruation	48	13.5
	2-3 days prior menstruation	27	7.6
9	No. of pads per day		
	1-5	336	94.4
	6 -10	20	5.6
10	Pain site		
	Lower abdomen	260	73
	Lumbar region	10	2.8
	Back	33	9.3
	Pelvic pain	20	5.6
11	Menstruation history in the past 6 months		
	Normal	290	81.5
	Abnormal	65	18.3

Table 3: Distribution of menstrual irregularities among adolescent girls by using checklist (n=356).

S. No.	Characteristics	Frequency (F)	Percentage (%)
1	Menstrual history in the past 6 months		
1.1	Regularity		
	Normal	299	84
	Abnormal	57	16
1.2	Frequency		
	Normal	314	88.2
	Abnormal	42	11.8
1.3	Volume		
	Heavy	17	4.8
	Medium	306	86
	Light	29	8.1
	Very heavy	4	1.1
1.4	Duration		
	Normal	316	88.8
	Abnormal	29	8.1
	Too irregular	11	3.1
1.5	Irregular		
	Yes	35	9.8
	No	321	90.2

Continued.

S. No.	Characteristics	Frequency (F)	Percentage (%)
2	Use medication continuously		
	Yes	27	7.6
	No	329	92.4
3	Preferable food to eat		
	Junk food	36	10.1
	Homely food	320	89.9
4	Exercise		
	Yes	112	31.5
	No	244	68.5
4.1	If yes		
	Daily	26	7.3
	2-3 times per week	38	10.7
	Once in a week	52	14.6
5	History of PCOD		
	Yes	34	9.6
	No	278	78.1
	Don’t know	44	12.4
6	Thyroid malfunction		
	Yes	14	4
	No	342	96.1
6.1	Any medication use		
	Yes	15	4.2
	No	341	95.8
7	Excess hair growth		
	Yes	28	7.9
	No	328	92.1

Table 4: Menstrual irregularities among adolescent girls (n=356).

S. No.	Characteristics	Frequency (F)	Percentage (%)
1	Amenorrhea		
1.1	Miss menstrual period		
	Yes	92	25.8
	No	264	74.2
1.1 a	Miss period continuously		
	Yes	24	6.7
	No	332	93.3
1.3	Miss periods more than 6 months		
	Yes	3	0.8
	No	353	99.2
1.4	Excess facial hair		
	Yes	32	9
	No	324	91
1.5	Milky nipple discharge		
	Yes	4	1.1
	No	352	98.9
2	Hypomenorrhea		
2.1	Light menstrual flow		
	Yes	51	14.3
	No	305	85.7
2.2	Spotting on pads		
	Yes	47	13.2
	No	309	86.8
3	Oligomenorrhea		

Continued.

S. No.	Characteristics	Frequency (F)	Percentage (%)
3.1	Menstrual period >35ndays		
	Yes	53	14.9
	No	303	85.1
4	Menorrhagia		
4.1	Heavy bleeding		
	Yes	21	5.9
	No	335	94.1
4.2	Prolonged bleeding		
	Yes	23	6.5
	No	333	93.5
5	Polymenorrhea		
5.1	Periods <21 days		
	Yes	11	3.1
	No	345	96.9
5.2	Lengthy cycle		
	Yes	19	5.3
	No	337	94.7
6	Dysmenorrhea		
	Yes	262	73.6
	No	94	26.4
7	Menometrorrhagia		
	Yes	57	16
	No	299	84
8	Prolonged menstrual bleeding		
	Yes	23	6.5
	No	333	93.5
9	Inter menstrual bleeding		
	Yes	27	7.6
	No	329	92.4%
10	Shortened menstrual bleeding		
	Yes	14	3.9
	No	342	96.1

Table 5: Association between menstrual irregularities and age among adolescent girls (n=356).

S. No.	Characteristics	Frequency (F)	Percentage (%)	P value
1	Amenorrhea	92	25.2	0.098
	Less than 20 years	62	29	
	Greater than20 years	30	21.1	
2	Hypomenorrhea	51	14.3	0.007
	Less than 20 years	22	10.3	
	Greater than20 years	29	20.4	
3	Oligomenorrhea	53	14.19	0.118
	Less than 20years	37	17.3	
	Greater than20 years	16	11.3	
4	Menorrhagia	23	6.5	0.066
	Less than20years	18	8.4	
	Greater than20 years	5	3.5	
5	Polymenorrhea	10	2.8	0.494
	Less than20 years	6	2.8	
	Greater than20 years	4	2.8	
6	Dysmenorrhea	262	73.6	0.269
	Less than20 years	162	75.7	
	Greater than20 years	100	70.4	

Continued.

S. No.	Characteristics	Frequency (F)	Percentage (%)	P value
7	Menometrorrhagia	57	16.0	0.001
	Less than20 years	46	21.5	
	Greater than20 years	11	7.7	
8	Prolonged menstrual bleeding	23	6.5	0.162
	Less than20 years	17	7.9	
	Greater than20 years	6	4.2	
9	Intermenstrual bleeding	27	7.6	0.469
	Less than20 years	18	8.4	
	Greater than20 years	9	6.3	
10	Shortened menstrual bleeding	14	3.9	0.430
	Less than20 years	7	3.3	
	Greater than20 years	7	4.9	

Table 6: Association between menstrual irregularities and BMI among adolescent girls (n=356).

S. No.	Characteristics	Frequency (F)	Percentage (%)	P value
1	Amenorrhea	92	25.8	0.781
	Under weight	15	26.3	
	Normal	64	26.4	
	Over weight	13	22.8	
2	Hypomenorrhea	51	14.3	0.538
	Under weight	6	10.5	
	Normal	38	15.7	
	Over weight	51	14.3	
3	Oligomenorrhea	53	14.9	0.545
	Under weight	7	12.3	
	Normal	35	14.5	
	Over weight	11	19.35	
4	Menorrhagia	21	5.9	0.098
	Under weight	3	5.3	
	Normal	18	7.4	
	Over weight	0	0.9	
5	Polymenorrhea	19	5.3	0.111
	Under weight	1	1.8	
	Normal	15	6.2	
	Over weight	3	5.3	
6	Dysmenorrhea	262	73.6	0.784
	Under weight	41	71.9	
	Normal	177	73.1	
	Over weight	44	77.2	
7	Menometrorrhagia	57	16.0	0.519
	Under weight	9	15.8	
	Normal	36	14.9	
	Over weight	12	21.1	
8	Prolonged menstrual bleeding	23	6.5	0.286
	Under weight	1	1.8	
	Normal	18	7.4	
	Over weight	4	7.0	
9	Intermenstrual bleeding	27	7.6	0.276
	Under weight	7	12.3	
	Normal	15	6.2	
	Over weight	5	8.8	
10	Shortened menstrual bleeding	14	3.9	0.349
	Under weight	1	1.8	

Continued.

S. No.	Characteristics	Frequency (F)	Percentage (%)	P value
	Normal	12	5.0	
	Over weight	1	1.8	

Table 3 represent majority of adolescent girls (84%) having regular menstrual cycle for past 6 months. 89.9% of adolescent girls prefer homely food and 31.5% of them doing regular exercise.

Table 4 revealed that majority, 262 (73.6%) of the adolescent girls having dysmenorrhea followed by amenorrhea, 92 (25.8%), menometrorrhagia 57 (16%) followed by oligomenorrhea and hypomenorrhea with 53 (14.9%) and 51 (14.3%) respectively.

Table 5 shows that menometrorrhagia and hypomenorrhea ($p=0.007$) had shown statistically significant association with age at $p<0.01$ level respectively. The other menstrual irregularities had not shown statistically significant association with age.

Tables 6 shows that any of the menstrual irregularities had not shown statistically significant association with BMI at p value <0.01.

DISCUSSION

In this study 356 adolescent girls in the reproductive age group were included. The mean age of menarche was 12.5 which is similar to previous study by Sheema et al which was 12.4 Years and 12.49 was in another study conducted in Egypt.[10;20,15] In this study, 73.6% of the girls suffered from a menstrual issue whereas more or less similar result reported in a study done by Sheema et al. Overall, dysmenorrhea was prevalent in 87.7% but in the present study it was only 73.6% which may be due to extraneous factors.[10] In the present study, 84% of adolescent girls had regular cycle while 16% of females had irregular cycles.

The common menstrual disorder which was found in the current study was dysmenorrhea (73.6%) and the result is more or less similar in various Indian studies.[4,8,16,15;20,21] Not only in India but also in the world-wide dysmenorrhea is common menstrual irregularities been in girls of reproductive age group.[10,8] Karout et al, in the study second most menstrual irregularities found female was amenorrhea (25.8%).

Menorrhagia was present in 6.5% of adolescentgirls in our population. Various international studies were also reported as 17% of females are suffering with the same.[13,18,19] Menometrorrhagia present in 16.5% of adolescent girls in a study done in India.[8,21] It is about 45.7%. In this study 73.6% of girls has dysmenorrhea, followed by amenorrhea (25.8%), oligomenorrhea (14.9%). Menstrual irregularities may occur because of food habits, adaptation of new life style changes and socio economic status.[17]

Limitations of the study were the non-generalizability due to less sample size and further large-scale studies as well as efforts to enhance the awareness on menstrual problems on adolescents and their parents, and routine screening for menstrual problems by healthcare providers are also suggested by the investigators.

CONCLUSION

Menstruation is important physiological process in women's reproductive period. Menstrual irregularities are very common in reproductive age group of adolescent's girls. Most common menstrual irregularities are dysmenorrhea (26.4%), and 14. 9% of females had oligomenorrhea, and 16 % of females had menometrorrhagia. The current study findings are consistent with other study results and the responsibility to address the menstrual issues among girls are to be focused in remedial measures of the irregularities as well as preventive measures for their future.

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