Int.J.Curr.Microbiol.App.Sci (2019) *8*(7): 279-286

International Journal of Current Microbiology and Applied Sciences
***ISSN: 2319-7706* Volume 8 Number 07 (2019)**
Journal homepage: http://www.ijcmas.com

Original Research Article https://doi.org/10.20546/ijcmas.2019.807.035

Effect of Dietary Habits on Menstrual Problems in Young Girls

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Keywords

Menstruation, Junk foods, Skipping of meals

Article Info

Accepted:
04 June 2019
Available Online:
10 July 2019

A B S T R A C T

Menstruation is a normal physiological phenomenon occurring in females. Menstrual disorders frequently affect the quality of life in young women. It is found that consumption of junk foods, lack of physical activities and skipping of meals mostly breakfast are the major causes of menstrual disorders which are on increasing trend amongst the young girls. So it becomes imperative to study the effects of these factors on menstrual cycle. Through purposive sampling hundred girls were selected for the study. A survey was planned and carried out with the help of a well developed questionnaire. The questionnaire included information about dietary habits like consumption of junk foods, skipping of breakfast, regularity and duration of menstrual cycle. Data's were analyzed manually and tabulated in percentages. It was found that 39 per cent respondents had regular and 61 per cent had irregular menstrual cycle. Eighty one per cent respondents consumed junk food. Skipping of meals was observed in 80 per cent of respondents, Mostly breakfast was skipped by 72 per cent of respondents, lunch by 6 per cent and dinner was skipped by 2 per cent of respondents and 8 per cent respondents were regular dieting. A significant association between consumption of junk foods, dieting and skipping of meals on menstrual cycle of respondents was found in the present study. It was concluded that modifications particularly decreasing the intake of junk food and promoting healthy eating habits should be emphasized amongst the young girls for healthy menstrual cycle.

Introduction

Dietary habits are fundamental factors that influence human life styles and individual Quality Of Life (QOL). Dietary habits and choices play a significant role in the quality of life, health and longevity. It can define cultures and play role in religion. Dietary habits in young women may determine their QOL in subsequent middle or old age and should be evaluated from the perspective of total benefit throughout whole life (Fujiwara and Nakata, 2004; Fujiwara *et al.*, 2007; Cerin *et al.*, 1993). Changes in food habits can cause inadequate intake of calories, micronutrients, unsaturated fat, phyto-estrogens and fiber as well as increasing environmental toxins. These factors are speculated not only to influence the present lifestyle, but also to induce gynaecologic disorders such as dysmenorrhoea and irregular menstruation (Fujiwara and Nakata, 2004; Berkey *et al.*,

2003; Abalkhail and Shawky, 2002). The wide spread consumption of fat food, skipping food intake and shift from local food to western foods are increasing among the young women. The list of menstrual disorders may range from amenorrhea, irregular cycles and abnormal flow to dysmenorrhoea and premenstrual symptoms (Campbell and McGrath, 1997). So it is important to evaluate the present situation of eating habit in young women and estimate their influence on menstrual cycle (Fujiwara *et al.,* 2007). Schweiger *et al.,* (1992) reported that daily eating habits significantly influence menstrual functions in young women. Fujiwara, (2003) found that young women who skip breakfast have a significantly higher degree of dysmenorrhoeal symptoms than young women who eat breakfast, suggesting a positive correlation between skipping breakfast and menstrual disorders.

Objective

This study was designed to study and determine the prevalence of menstrual irregularities in young girls and also to study the effect of consumption of junk foods and dietary habits on the menstrual health of girls.

Materials and Methods

The present study was carried out among young girls (16-18 years) facing menstrual problems through a survey conducted during July-18 to September-18. A prior permission was obtained from the school/college authority and the girls were selected by purposively sampling method girls were selected from Government Girls School, Pacific Business School, Keva Centre, Arts College (MLSU), Gayatri Institute of Nursing and Pacific Medical College of Udaipur district, Rajasthan. Data was collected with the help of a predesigned and pretested self-administered questionnaire (Appendix-I). The questions were administered in English and properly explained to avoid any form of misunderstanding and to facilitate accurate response by the subjects. The interview was conducted in Hindi and also in local dialects as and when needed. Total 100 girls were selected for the study as they were facing menstrual problems. Data was analyzed as percentage of responses. The question contained items regarding variables such as dietary habits, like consumption of junk foods, consumption of fruits and vegetables, skipping of meals, age of menarche, menstrual pattern, dysmenorrhoea, regularity and average duration of menstrual cycle. They were also asked whether they had consulted a gynaecologist on any earlier occasion regarding menstrual problems.

Results and Discussion

The menstrual cycle is the hormonal driven cycle; Day 1 is the first day of your period (bleeding) while day 14 is the approximate day you ovulate and if an egg is not fertilized, hormone levels eventually drop and at about day 25; the egg begins to dissolve and the cycle begins again with the period at about day 30. Menstruation begins day 1 and normally ends days 3-5 of the menstrual cycle (https://www.medicinenet.com/menstruation/article.htm).

Normal menstrual cycle was defined as a menstrual cycle lasting for 26-29 days and irregular menstruation was defined as any subjects with the length of ≤ 25 or ≥ 30 days (Audhi Lakshmi, 2013). It was observed that menstrual cycle was regular in 39 (39.0%) respondents and irregular menstrual cycle was found in 61 (61.0%) respondents. It was also observed that 60 (60.0%) respondents had painful menstrual flow, out of which 31 (31.0%) students had severe pain, 22 (22.0%) had moderate pain while 07 (07.0%) had mild pain.

Table 1 reveals the distribution of young girls according to age of menarche in which only 7 per cent respondents were in age of 10. Age of menarche of 11 years were 10 per cent respondents, 33 per cent respondents age of menarche was 12, majority of respondents i.e. 33 per cent age of menarche was 13 years and remaining 14 per cent were in age of 14 years during their first period.

The general dietary pattern of the subjects were recorded and it was found 81 per cent respondents consumed junk food, whereas 19 per cent respondents did not consumed junk food, also it was found that mainly breakfast, lunch, tea/coffee and dinner was taken as meal and majority of respondents skip one meal a day. Majority (80%) of respondents were not regular in taking meals i.e. breakfast, 72 per cent respondents skipped breakfast, though they were not having enough time due to their school/college hours, 6 per cent skipped lunch and dinner was skipped by 2 per cent respondents. Majority of respondents (78 %) were not taking snacks between meals, only 22 per cent respondents were taking snacks between meals like biscuits, namkeen, kurkure, chips, mathries etc. Some girls were on dieting *i.e.* 8 per cent of respondents were dieting regularly to look more slim and attractive, majority of girls (90%) were not dieting. Also 62 per cent girls were in habit of tea/ coffee consumption. (Table 1.1)

Table 1.2 indicates that majority (69%) of respondents were vegetarian, 13 per cent respondents were ovo -vegetarian while 18 per cent respondents were non – vegetarian. Similarly, Chaturvedi *et al.,* (2017) conducted a study in which 117 were vegetarians and remaining 183 were non-vegetarians.

Table 1.2 stats that 45 per cent respondents were consuming green leafy vegetables like spinach, fenugreek etc less than once a week, 31 per cent were consuming 1-2 times per week, 14 per cent respondents were consuming 3-7 days per week, 7 per cent consuming occasionally and only 3 per cent respondents were not consuming green leafy vegetables.

31 per cent respondents were consuming fresh fruits less than once a week, 38 per cent were consuming 1-2 times per week, 21 per cent respondents were consuming 3-7 days per week, 3 per cent consuming occasionally and no one comes in category of not consuming.

Table 2 indicates that 8 per cent girls were on dieting and having irregular periods, 92 per cent respondents were not doing dieting. There is significant ($p<0.05$) relation between menstrual problem and dieting.

Adolescents tended to try to lose body weight by dietary restriction for cosmetic purpose. In Japanese young women, more than 60% college students used diet control to reduce weight despite a normal or low body mass index (Fujiwara, 2007).

Table 3 stats that 42 per cent girls consumed junk food and were having irregular periods, There is a significant ($p<0.001$) association between junk food consumption and menstrual problem. Table 4 reveals that 61 girls were not having regular meals and their periods are also irregular, while only 22 girls took regular meal and their periods were also regular, hence there is a significant ($p<0.001$) relationship between regularity of meals and regularity of periods.

Table 5 indicates that Prevalence of dysmenorrhoea among the respondents in the present study was 74% out of them 43 per cent were having severe pain, 23 were having moderate while 8 girls were facing mild pain, compared to 79.8% reported by Sangwan and Vashisht (2017), similarly, Kural *et al.,* reported the prevalence to be 84.2%.

Table.1 Distribution of adolescents according to age of menarche

Age of Menarche	Number	Percent (%)
10	7	7.00
11	10	10.00
12	33	33.00
13	36	36.00
14	14	14.00
Total	100	100.00

Table.1.1 Dietary habits of the subjects

S. No	Particulars	Yes	No
1.	Junk food consumption habit	81	19
2.	Regular in taking meals	22	78
3.	Skipped Meals Breakfast Lunch Dinner	 72 6 2	20
4.	Snacks between meals	22	78
5.	Dieting	8	92
6.	Tea/ Coffee consumption	62	38

Table.1.2 Eating food habits

Eating food habit	Number	Percentage (%)
Vegetarian	69	69.00
Ovo - vegetarian	13	13.00
Non - vegetarian	18	18.00

Table.1.3 Frequency pattern of fruits and vegetables consumption

Particular	Number	Percentage (%)
Consumption of green leafy vegetables		
Less than once a week	45	45.00
1-2ntimes a week	31	31.00
3-7 times a week	14	14.00
Occasionally	07	07.00
Not consuming	03	03.00
Consumption of fruits		
Less than once a week	31	31.00
1-2ntimes a week	38	38.00
3-7 times a week	21	21.00
Occasionally	10	10.00
Not consuming	0	0.00

Table.2 Menstrual problems and dieting

Period Regular?	On Dieting?				Chi Sqr	df	Result
	No		Yes				
	No	%	N	%			
No	53	57.61	8	100.00	5.560	1	*
Yes	39	42.39	0	0.00			
Total	92	100.00	8	100.00			

Table.3 Menstrual problems and consumption of junk food

Consume Junk Food	Regularity of Period				Chi Sqr	df	Result
	No		Yes				
	No	%	N	%			
No	19	31.15	0	0.00	14.997	1	***
Yes	42	68.85	39	100.00			
Total	61	100.00	39	100.00			

Table.4 Menstrual problems and regularity of meal

Take Regular Meal	Regularity of Periods				Chi Sqr	df	Result
	No		Yes				
	No	%	N	%			
No	61	100.00	17	43.59	44.116	1	***
Yes	0	0.00	22	56.41			
Total	61	100.00	39	100.00			

Table.5 Distribution of respondents by pain during menstruation

Particular	Yes	No
Abdominal pain	74	40
Severe	43	-
Moderate	23	-
Mild	08	-

Table.6 Distribution of Respondents by Duration of Menstrual flow

Duration of flow	No. of respondents	Percentage
≤3 days	18	18.00
>3-5 days	52	52.00
≥ 7 days	30	30.00

Table.7 Distribution of respondents taken consultation from gynaecologist

Consultation from gynaecologist	
Yes (Percent %)	**No (Percent %)**
20 (20.00%)	80 (80.00%)

Table 6 describes the duration of menstrual flow of respondents that 18 per cent girls were having ≤3 days, majority of respondents (52%) were having duration flow between >3-5 days and 30 per cent respondents were having ≥ 7 days duration of menstrual problem.

Table 7 indicates that majority (80 %) respondents had not taken consultation from gynaecologist and only 20 per cent respondents had taken consultation from gynaecologist.

In the present study we attempted to find a relation between various dietary habits like eating of junk foods, fruits, vegetables, skipping of meals on the menstrual cycle of young girls. In our study we find a significant association between irregular meals and menstrual cycle which might be due to skipping of meals mostly like breakfast, Similarly Fujiwara *et al.,* 2009 reported that skipping of breakfast had adverse effect on menstrual cycle in young girls. Fujiwara and Nakata in 2010 studied and reported that skipping of breakfast is associated with reproductive dysfunction in post-adolescent female college students found the incidence of irregular menses was higher in the population that skipped breakfast. On the other hand gynaecologic disorders such as dysmenorrhoea and irregular menstruation were associated with food intake problems. (Fujiwara and Nakata, 2004)

In the study we noticed that 61 (61.0%) respondents took junk food, significant association ($p<0.001$) was observed between consumption of junk food and menstrual cycle, Similar result was also reported by Rupavani *et al.,* (2013). Junk foods being deficient in micronutrients like vitamin B6, calcium, magnesium and potassium might be responsible for triggering premenstrual symptoms (Rupavani *et al.,* 2013), whereas Nirmala *et al.,* (2014) reported a significant association between irregular menstrual cycles, abnormal flow, dysmenorrhoea and PMS with frequent consumption of junk food. This study also signifies 74 per cent respondents were facing dysmenorrhoeal problems out of them 43 per cent were having severe pain, 23 were having moderate while 8 girls were facing mild pain. Duration of menstrual flow of respondents that 18 per cent girls were having ≤3 days, majority of respondents (52%) were having duration flow between >3-5 days and 30 per cent respondents were having ≥ 7 days duration of menstrual problem.

The differences in inter-menstrual interval and duration of flow could be because of different lifestyle, dietary habits, stress, hormonal imbalance or some medical reasons which require gynaecological assessment.

In the present study it was observed that majority of the respondents had irregular menstrual cycle and there was significant association between dietary habits and menstrual cycle. Many other studies had reported the adverse effect of dietary habits on the menstrual cycle. So further study is required with a large sample size. Healthy dietary habits like decreasing the intake of junk foods and promoting healthy eating habits should be emphasised to improve menstrual health of young college girls.

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How to cite this article:

Mumal Singh and Nikita Wadhawan. 2019. Effect of Dietary Habits on Menstrual Problems in Young Girls. *Int.J.Curr.Microbiol.App.Sci.* 8(07): 279-286.
doi: https://doi.org/10.20546/ijcmas.2019.807.035

Dietary food habits (Appendix-I)

1) How many meals do you take in a day?
Breakfast: - _____
Lunch: - _____
Tea/Coffee: - _____
Dinner: - _____

2) Do you have snacks in between meals? Yes / No
If yes than type of snacks in between meals _____

3) What is your eating food habits?
a) Vegetarian b) Non- Vegetarian c) Ovo-Vegetarian

3) Do you consume junk food/ fast food?
a) Yes b) No

4) Are you regular in taking meals**?** Yes / No

If **No**, then mention which meal you skip? ***Breakfast / Lunch / Dinner***

Reason of skipping meals, please specify _____

6) Are you on dieting?
a) Yes b) No

If yes, than what is the reason of dieting?
i) To look more slim and attractive
ii) To avoid meals due to mood swings
iii) Due to liking and disliking meals
iv) Any other (Please specify ----------)

Information related to Menstrual Cycle

1) Age of menarche (when you experience your first period? _____

2) Are your periods regular?
a) Yes b) No

3) Duration of menstrual flow? (how many days do you bleed for?) _____
a) ≤3 days b) >3-5 days c) ≥ 7 days

4) You are facing pain during menstruation?
a) Yes b) No

If yes, than what is the location of your pain? _____

What is the severity of your pain? _____

5) Have you ever taken consultation from gynaecologist regarding menstrual problem?
a)Yes b) No