A STUDY TO ASSESS THE ASSOCIATION BETWEEN BMI AND THE MENSTRUAL IRREGULARITIES AMONG THE ADOLESCENT GIRLS OF SELECTED SCHOOLS OF DISTRICT, FATEHGARH SAHIB.

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ABSTRACT

BACKGROUND Globally adolescents account for 1/5th of the world's population that is more than 1 billion. In the journey of life, there are events that can change our life forever. One of highest steps will take in our amazing journey from girlhood to womanhood is the first time the girl gets period. It is important for young girls and their parents to understand what a normal menstrual pattern is, in order to evaluate what constitutes an irregular cycle or abnormal flow.

AIM The present study aims to assess the association between BMI and menstrual irregularities adolescent girls of selected schools of district Fatehgarh Sahib, Punjab.

MATERIAL & METHODS Through purposive sampling 200 adolescent girls were selected and self structured interview schedule was used for collection of data.

RESULTS: The mean age of adolescent girls was 15.19 ± 1.4 and mean age at menarche of adolescent girls was 12.92 ± 1.26. The majority of adolescent girls i.e. 53% had normal BMI, 55% had dysmennorhea, 77.5% girls had regular menstrual irregularities, 76.5% had normal flow of blood and 45.5% girls had pre- menstrual symptoms. There was significant association between BMI and menstrual irregularities at $p < 0.05$.

CONCLUSION The findings of study revealed that 55% adolescent girls had dysmennorhea and 22.5% had menstrual interval irregular. There was significant association between BMI and menstrual irregularities. There was significant association of BMI and menstrual irregularities with some selected demographic variables. Therefore, it's the need of the hour, to increase the awareness of good diet among adolescent girls. It can be done by arranging the seminars or campaigns time to time. Lifestyle modifications like regular physical activity, decreasing the intake of junk food and promoting healthy eating habits should be emphasized in school health education programs to improve their menstrual health.

KEY WORDS BMI, menstrual irregularities, adolescent girls.

INTRODUCTION AND BACKGROUND OF STUDY

Globally adolescents account for 1/5th of the world's population that is more than 1 billion.[1]

4 out of 5 adolescents live in developing countries. According to India's census in 2013, Adolescents (10-19 years) constitute about 22.8% (253 million) of India's population. Adolescent girls between 10-19 years constitute close to half (111 million) of this population group. Due to gradual decrease in the growth rate of the overall population, there is little increase in the number of adolescents in population projection till the year 2016 (Population projection 1996-2016 census of India).[2]

Adolescence is the transitional phase of physical and mental development between childhood and adulthood and is characterized by immense hormonal changes. The most striking change in adolescent girls is the onset of menstruation. In the Indian context, the age of onset of menstruation or menarche is generally between 11-15 years.[3]

Most women bleed for 2 to 7 days during their first menses. Most normal cycles range from 21 to 45 days, despite variability even in the first gynecologic year, although short cycles of fewer than 20 days and long cycles of more than 45 days may occur.[4]

OBJECTIVES OF THE STUDY

1. To assess the BMI of the adolescent girls of selected schools of district Fatehgarh Sahib.
2. To assess the menstrual irregularities among the adolescent girls.
3. To find the association between BMI and menstrual irregularities in the adolescent girls
4. To find association of BMI and menstrual irregularities with selected demographic variables.

Menstrual problems are generally perceived as only minor health concern and thus irrelevant to the public health agenda particularly for women in developing countries who may face life threatening condition. Menstrual cycle is normal physiological process that is characterized by periodic and cyclic shedding of pre- gestational endometrium accompanied by loss of blood which is additional vital sign adds a powerful tool to the assessment of normal development and the exclusion of pathological conditions in adolescent and young girls.[5]

Some variety of menstrual dysfunction occurs in adolescent girls which may affect normal life of adolescent and young adult women. Physical, Mental, Social, Psychological, Reproductive problems are often associated with menstrual irregularities and menstrual problems. Due to change in life style, habits, diet, the prevalence of obesity has increased in developed world which results in decreased age at menarche. [6]

MATERIAL AND METHODS

RESEARCH APPROACH
Descriptive research approach.
RESEARCH DESIGN
Cross sectional survey.
VARIABLES UNDER STUDY:
Research Variables:
BMI and menstrual irregularities **Extraneous variables:** Age, age at menarche, educational status of participant, educational status of parents, occupation of parents, family income, dietary pattern and place of residence. **SETTING**
Government senior secondary school, Balahri Kalan, Fatehgarh Sahib.
Government senior secondary school, Fatehgarh Sahib.

STUDY POPULATION

Adolescents girls (13 -18years) studying atselected schools of district, Fatehgarh Sahib.

SAMPLE SIZE

200 adolescent girls

SAMPLING TECHNIQUE

Selection of schools was done by convenient method and class was also selected conveniently as per free periods and classes assigned by the teacher. Subjects were selected by purposive sampling technique in study.

CRITERIA FOR SAMPLE SELECTION

Inclusion criteria

Adolescent girls in the age group of 13 - 18years.
Adolescent girls who will understand Englishand Punjabi.
Adolescent girls who will be willing toparticipate in research study.
Adolescent girls who attained menarche.

Exclusion criteria

Age less than 13 years or greater than 18 years.
Adolescent girls who will be on treatment formenstrual problems.
Studying in schools other than selected schools of Fatehgarh Sahib.
Who will not available at the time of data collection.
The adolescent girls who will not willing to participate.

DESCRIPTION OF TOOL

It had three parts:-

Part 1: Socio - demographic data
Part 2: BMI calculation
Part 3: Pain scale: Numeric Pain RatingScale
Part 4: Self structured questionnaire to assessmenstrual problems. This part consisted of 6 items.

DATA COLLECTION PROCEDURE

The data was collected from the 200 subjects from selected schools. The interview schedule was conducted. The researcher had taken written informed consent from subjects prior to the data collection procedure.

RESULTS

Socio – demographic variables:
Age: maximum 40.5% adolescent girls were in the age group of 13-14 years, followed by 38.0% in the age group of15-16 years and 21.5% in the age group 17-18 years. Mean age of adolescent girls were 15.19 ± 1.4 years.
Age at menarche: majority 47% of girls got menarche at 13-14 years, followed by 37%in the age group of 11-12 years, 13.5% in the age group 14 above and 2.5% in the age group of 9- 10 years. Mean age at menarche was
12.92 ± 1.2 years.
Dietary pattern: majority 73% of girls were vegetarian and 27% were non- vegetarian.
B.M.I of adolescent girls
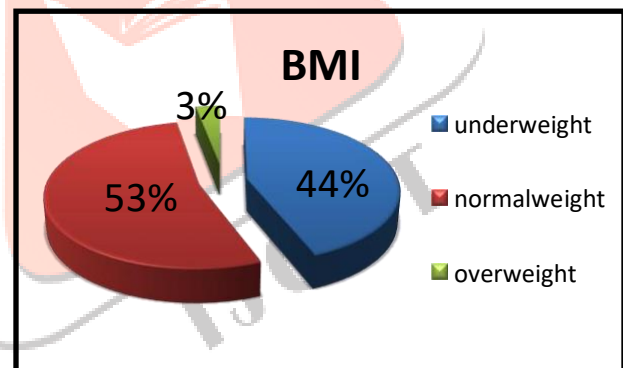
Figure 1 showing frequency distribution of BMI

c) **Frequency and percentage distribution of f girls regarding menstrual irregularities.**
N=200

MENSTRUAL IRREGULARITIES		FREQUENCY (n)	PERCENTAGE (%)
Pain	Yes	110	55.0
	No	90	45.0
Severity of pain	Mild	26	13.0
	Moderate	51	25.5
	Severe	33	16.5
Menstrual Interval	Regular	155	77.5
	Irregular	45	22.5
Menstrual cycle duration	Short	11	5.5
	Normal	155	77.5
	Long	34	17.0
Duration of periods	Less than 2 days	5	2.5
	3-6 days	177	88.5
	More than 6 days	18	9.0
Flow of blood	Scanty	26	13.0
	Normal	153	76.5
	Heavy	21	10.5
Change pad	Spotting	5	2.5
	Partially saturated	64	32.0
	Fully saturated	126	63.0
	Depends on mood	5	2.5
Premenstrual syndrome	Yes	91	45.5
	No	109	54.5
Premenstrual symptom	Headache	16	8.0
	Dizziness	5	2.5
	Nausea	7	3.5
	Diarrhea	14	7.0
	Leg cramps	14	7.0
	Backache	39	19.5

d) **Association of B.M.I and menstrual irregularities**: In order to determine association of B.M.I with menstrual irregularities (dysmennorhea, cycle length, flow of blood and pre- menstrual symptoms) chi square was computed, result is found statistically significant at $p < 0.05$

e) **Association of B.M.I and menstrual irregularities with selected demographic variables** (age, age at menarche and dietary pattern)

DISCUSSION

In The present study, findings reveals that majority of adolescent girls i.e. 106(53%) were having normal BMI followed by 88(44%) were underweight and 6(3%) were overweight. This was similar to the findings of study done by **Dars S et al (2014)[5]** which showed that 277 (69%) had a BMI between 18.5 - 24.9 kg/m^2. 108 (27%) were underweight with a BMI of 14 - 18.49 kg/m^2, while 16 (4%) were overweight with BMI 25 - 29.99 kg/m$^{2.}$ **Hemant Deshpande et al (2012)[7]** contradicts the findings of present study which showed 31.5% girls had BMI more than 25.

The present study, determined that 55% adolescent girls had dysmennorhea. This was similar to the findings of study done by **Dinesh Kumar et al (2013)[8]** which showed 429 (57.7%) respondents had dysmennorhea and **Dambhare DG, Wagh SV, Dudhe JY (2012)[9]** showed 56.15% adolescent girls experienced dysmennorhea. But opposite findings were revealed in study done by **Chung PW et al (2011)[10]** showed 12% had dysmenorrhoea and study done by **Rahma Al-Kindi & Anbarin Al-Bulushi (2011)[11]** reported that 94% of the participants had dysmenorrhoea.

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