BMI & Menstrual Irregularities among Adolescent Girls

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ABSTRACT

Background of the study: Context for the Research Regularity, flow, and pattern irregularity all describe menstruation. Menstrual diseases have been estimated to affect as much as 87% of the population in India. Dysmenorrhea affects between 60% and 93% of women and is the most prevalent menstrual condition. Hormonal shifts, genetic predisposition, the presence of major medical disorders, and body mass index are all factors that might affect a woman's menstrual cycle and its regularity and flow. **Methods:** The current investigation is grounded on a descriptive survey research methodology, and it uses data from a sample of 231 teenage females that were drawn using a stratified random sampling technique. Both descriptive and inferential statistics were employed in the investigation. **Result:** Among teenage girls, those with a lower body mass index (BMI) are more likely to suffer from dysmenorrhea. Out of 128 females with a BMI 18.5, 115 (or 89.84%) reported having dysmenorrhea. Adolescent females with a healthy BMI of 26 (30.95%) were less likely to have this condition. There was a visible gap between the two groups. Similarly, oligomenorrhea, menorrhagia, and irregular periods were more common in females with BMI 18.5 or >25 compared to those with normal BMI. **Conclusion:** Most of the young people studied had unhealthy body mass indexes, the study found. Dysmenorrhea was by far the most prevalent symptom of a menstrual disorder, followed by an irregular menstrual cycle. Body mass index (BMI) is a key factor in controlling menstrual bleeding.

Key Terms: Menstrual Irregularities, Body Mass Index, Adolescents.

Introduction:

Adolescence encompasses the years between the onset of puberty and the attainment of majority status and is characterized by rapid and significant changes in a person's physical and mental maturity.[1] This is because their bodies are going through significant changes at this time, which might make them vulnerable to a wide range of health issues. In girls, issues around menstruation are among the most difficult to resolve.[2] A woman's health is dependent on her menstrual cycle. Menstrual cycle disorders or abnormalities are a common gynecological issue among women of reproductive age, especially teenagers, and a common source of stress for those affected and their loved ones.[3]

The menstrual cycle is a valuable tool for assessing normal development and ruling out pathological disorders in adolescent and adolescent girls since it is considered a typical physiological course that involves the periodic and cyclic shedding of presentational endometrium followed by loss of blood.[4] Adolescent females have a range of menstrual dysfunctions that can have an impact on adolescent girls' daily lives. Menstrual abnormalities and disorders are linked to a wide range of health issues, including those related to the body, the mind, the social world, the psyche, and reproduction.

Regularity, flow, and pattern irregularity all describe menstruation. 64% of girls surveyed reported having no or minor issues with menstruation.[5] Menstrual diseases have been estimated to affect as much as 87% of the population in India.[6] Menstrual diseases are common, and they come in many forms. Most females experience difficulties of varying severity, and these difficulties tend to be unique to each girl. Dysmenorrhea affects between 60% and 93% of women and is the most prevalent menstrual condition.[7]

It is important to get medical attention if you experience menstrual irregularities, as there are a variety of illnesses that can cause this. Even so, this facet of women's health is frequently overlooked. An early diagnosis and therapy can eliminate more than 90% of menstruation issues.[8] Hormonal shifts, hereditary predisposition, the presence of certain diseases, and even a woman's weight can all affect the regularity and duration of her menstrual cycle.[9,10]

Although many research have been done in the past to deal with the issues of menstrual irregularities in young students, there have been surprisingly few findings on the connection between menstruation disorders and BMI. Investigating whether or not menstruation problems and

obesity have a same cause might be a promising avenue for future research. The purpose of this research was to measure the BMI of teenagers attending certain high schools in Nadiad, Kheda, and Gujarat, and to count the number of girls and boys who have menstrual irregularities. Teenage girls and boys will be surveyed to determine the prevalence of menstrual irregularities and the correlation between BMI and these disorders.

Materials and Methods:

Girls in their late teens were the focus of a cross-sectional study conducted at a convenience sample of schools in Nadiad, Kheda, Gujarat. Using a stratified proportional random sample method, 231 teenage female students were selected for this study of menstruation cycles and related issues. Menstruating women are excluded from this research.

Those who participated in the study were given all of the pertinent information about it. All of the girls' parents gave their written approval, and the study was approved by the administration of their high school. They were given informational materials regarding the survey. The purpose of the checklist is to collect data on menstruation, including demographics, menarche age, menstrual regularity, and any issues that may arise throughout the menstrual cycle. All replies were kept private.

A conventional weighing scale was used to record weight for anthropometric analysis, and was kept on a flat, stable platform. Girls' weight was measured without their shoes or socks, despite the fact that they were still wearing warm outerwear. It was determined how tall someone was by utilizing a tape measure that wouldn't give. Girls' heights were recorded without their shoes.[11] According to the World Health Organization's (WHO) standard, has a body mass index (BMI, measured in kilograms per square meter). Overweight is defined as a body mass index (BMI) of 25 or above; pre-obese is defined as a BMI of 25 to 29.9, and underweight is defined as a BMI of 18.5 or below (obesity).[12]

SPSS 18 was used for data collection, data entry, and data analysis. Descriptive and inferential statistics were employed to examine the data. The significance level for the connection was set at P 0.05.

Result:

As a result of the research, subjects were divided into groups depending on their body mass index. Overweight and underweight participants were represented in the research population to some

degree, as seen in Figure 1. Almost a majority of them, 128 (55.41%), had a low body mass index, indicating that more than half of the girls were undernourished. Only 19 out of all the teenage girls were overweight (8.22 %).

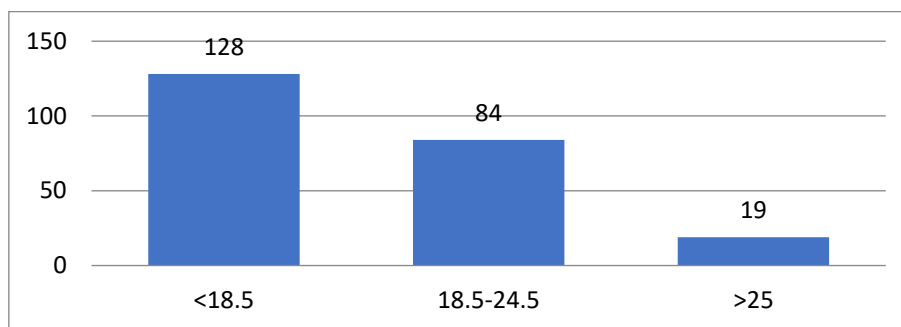**Figure:1**: Sample distribution by body mass index.

Table: 1 Association of Menstrual irregularities with BMI

Variables	<18.5	18.5-24.9	>25	Significance
Dysmenorrhea Yes No	115 13	26 58	10 9	p- 0.002
Oligo-menorrhea Yes No	98 30	12 72	11 8	p- 0.011
Menorrhagia Yes No	30 98	21 63	8 11	p- 0.027
Irregular cycle Yes No	85 43	12 72	7 12	p- 0.032
Amount of blood loss Scanty Moderate Heavy	78 20 30	12 30 42	2 9 8	p- 0.04
Intervals of periods <21 Days 21-35 days >35 days	3 40 85	6 66 12	2 10 7	p- 0.024
Duration of periods < 2 days 3-7 days >8 days	3 119 6	6 46 32	1 10 8	p- 0.031

Menstrual issues and body mass index are summarized in **Table 1.** Adolescent girls with lower body mass index were more likely to suffer from dysmenorrhea than those with higher BMIs;

89.84% (115 out of 128) of the females with a BMI 18.5 reported having dysmenorrhea. Adolescent females with a healthy BMI of 26 (30.95%) were less likely to have this condition. There was a visible gap between the two groups. Similarly, girls with a body mass index (BMI) below 18.5 or over 25 were more likely to experience menstrual symptoms such oligomenorrhea, menorrhagia, and irregular periods than girls with a healthy BMI.

Discussion: The onset of menstruation is a significant developmental milestone for girls and women. Regular monthly bleeding is a typical physiological phenomenon that persists from puberty to menopause. Because of its significance as a health indicator for women, it is important for preteen girls to learn about normal menstrual cycles and the variables that may cause disruptions in these cycles. They need to know more about menstruation, how to properly care for it, and why it's important to address the stigmas and misconceptions around menstruation.

Menarche: Two-thirds of the teenage females in this research began menstruating between the ages of 13 and 14; the average age of menarche was 13.45. Ages of 13.4, 13.5, and 13.6 have been reported as the average age of menarche in studies of Indian women that are comparable to this one [14,15,16]. Hereditary factors and nutritional state may have a little role in determining when a girl reaches menarche.[17] Menarche was observed to occur later in females with low calorie consumption, but earlier in those with a healthy diet and enough amounts of protein and fat. [18]

Menstrual irregularities: Among the teenage females in this research, 104 (45%) had monthly abnormalities and 121 (52%), oligomenorrhea. Half of the women (116) who had their menstrual cycles tracked had periods that started between 21 and 35 days after the assessment began. Finding is consistent with another study which found a prevalence of 59.4% for menstrual cycle irregularity and 37.5% for oligomenorrhea. [19]

Variation with BMI: Menstrual abnormalities were more common in teenage females who were underweight or overweight (BMI 18.5, or >25, respectively) compared to adolescent girls whose BMI was within the normal range. The results were consistent with those of other investigations. [20, 21, 22, 23]

Conclusion: As a result, we conclude that dysmenorrhea is the most frequent menstruation condition among teenage females. The body mass index (BMI) is a major determinant of monthly period regularity. In order to keep their body mass indexes normal and their periods regular, teenage females require a diet rich in fruits, vegetables, and whole grains.

Conflict of Interest: To avoid any appearance of bias, the authors state that they have no financial stake in seeing this paper become public.

Source of funding: Individual researchers have funded their own investigations.

Ethical Clearance: The study was conducted after receiving ethical clearance from the Institutional Ethics Committee and the principals of participating advanced placement schools. All data collected was kept private and secure.

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