Body Massa Index with Premenstrual Syndrome in College StudentsMagaille Hodambia¹, Sindi Dandala¹¹Faculty of Health Sciences, University of Cape Town, South Africa**Abstract**

Premenstrual syndrome (PMS) symptoms may range from mild to severe. PMS severity is affected by hormonal, psychological, and physiological variables in women. Nutritional status was determined using the body mass index (BMI). According to one research, each kilogram/m² rise in BMI was linked with a 3% increase in the chance of developing PMS. Respondents with normal height and weight who dominated the results of BMI measures in this study were found to be in the same BMI category as female students experiencing mild PMS. When it comes to female students, there is a significant disparity between BMI and PMS degree levels. There is a strong relationship between BMI and the intensity of PMS symptoms. A significant relationship exists between BMI and PMS degrees in female university students. There is a strong relationship between BMI and the intensity of PMS symptoms.

Keywords: Body Mass Index, Premenstrual Syndrome Severity, Female Student

Introduction

Premenstrual Syndrome (PMS) is a collection of physical, psychological, and emotional symptoms linked with the menstrual cycle. PMS symptoms typically begin six to ten days before to menstruation and subside once menstruation starts. PMS symptoms may range from mild to severe. Physical and psychological symptoms such as bloating, breast enlargement and soreness, mental stress, sadness, and mood disorders are often mentioned. PMS severity varies according to hormonal, psychological, and physiological variables in certain individuals. The Shortened Premenstrual Assessment Form (SPAF) is a questionnaire that is used to assess the severity of Premenstrual Syndrome (PMS)

According to WHO data from 2019, the prevalence of STDs among female students varies significantly across several countries, including 33.82 percent in China, 37 percent in Ethiopia, 39.9 percent in Taiwan, 39.4 percent – 56.9 percent in Iran, 65 percent in Egypt, 72.1 percent – 91.8 percent in Turkey, 79 percent in Japan, 80 percent in Pakistan, and 89.5 percent in South Korea.

According to several studies, premenstrual syndrome is caused by an imbalance of the hormones progesterone and estrogen (Rad et al., 2018; Ford et al., 2009; Lombardi et al., 2004). The greatest estrogen levels in the body were observed in obese individuals with a BMI of 30. Circulating estrogens have a greater impact on obese women than on women of normal weight. For obese women, the accumulated fat acts as a steroid, providing the raw material for the production of the hormone estrogen, resulting in excessive estrogen production and hyperestrogenism. According to this hypothesis, Premenstrual Syndrome is caused by an excess of estrogen or a deficiency of progesterone during the luteal phase of the

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menstrual cycle (PMS). The nutritional status was determined using the Body Mass Index (BMI).

According to research, an increase of 1 kg/m² in BMI was linked with a 3% increase in the risk of PMS (Kappus et al., 2016; Bertone-Johnson et al., 2010). The connection between BMI and premenstrual syndrome in early adolescence (18 years) revealed that 106 respondents (76.8 percent) had mild to moderate PMS, while 32 respondents (23.2 percent) had moderate to severe PMS. There is a correlation between BMI and the severity of premenstrual syndrome. Reproductive women aged 18-47 years discovered a strong connection between an abnormally high Body Mass Index (BMI) and the prevalence of premenstrual syndrome. There are 1.1 percent of students with an extremely low BMI, 14.1 percent with a low BMI, 27.1 percent with a normal BMI, 36.5 percent with an overweight BMI, and 21.2 percent with an obese BMI. According to the Data for Basic Health Research in 2018, the prevalence of nutritional status among adults aged 20-24 years is as low as 15.8 percent, BB is greater than 8.4 percent, and 12.1 percent is categorized as obesity. Obesity is more prevalent in women than in males. The capital had the greatest obesity prevalence at 29.8 percent, while other region had the lowest at 10.3 percent. Obesity is prevalent in certain district at 19.1 percent. Obesity is primarily caused by an energy imbalance between calories consumed and calories expended. This abnormal buildup of levels may be attributed to a variety of causes, one of which being excessive food consumption.

Menstrual Disorders (PMS)

Menstruation is the release of blood, mucus, and uterine mucosal cell debris, which is followed by periodic and cyclical endometrial shedding (desquamation), which starts about 14 days following ovulation (Somasundaram, 2016; Riaz, 2014; McCluggage, 2011). Menstruation happens as a consequence of the development and shedding of the uterine endometrial lining. Numerous premenstrual symptoms occur, including anxiety, tiredness, trouble focusing, difficulty sleeping, fatigue, headaches, stomach discomfort, and breast soreness.

PMS is a collection of physical, psychological, and emotional symptoms that occur during a woman's menstrual cycle. PMS symptoms may range from mild to severe. Bloating, breast enlargement and soreness, emotional strain, sadness, and mood disorders are often reported physical and psychological symptoms. 2 PMS severity varies according to hormonal, psychological, and physiological variables. The symptoms experienced may vary according to the cycle. Premenstrual syndrome is characterized by irritability and emotional outbursts, sadness, agitation, tiredness, poor focus, swelling (edema), and chest and stomach discomfort.

Premenstrual Syndrome: Aetiology (PMS)

Premenstrual syndrome is believed to be caused by a variety of reasons, one of which being the effect of hormonal changes before to menstruation. Along with hormonal influences, lifestyle variables such as physical exercise and micronutrients cannot be overlooked. Exercise on a regular basis may help alleviate premenstrual symptoms. Premenstrual syndrome is caused by a number of causes, including the following:

A hormonal imbalance between estrogen and progesterone in which estrogen is abundant and progesterone is deficient. Serotonin levels vary throughout the menstrual cycle, and variations in serotonin are linked to symptoms of sadness, anxiety, tiredness, and aggressiveness, among others. Serotonin deficiency is common in women suffering from

premenstrual syndrome. Premenstrual syndrome is twice as common in single-egg (monozygotic) twins as it is in twins (dizygotic). Stress has a significant role in premenstrual syndrome. Premenstrual syndrome symptoms will be more acutely felt by women who are continuously under psychological stress.

Factor relating to physical activity

Inactivity may aggravate premenstrual syndrome. Physical exercise is suggested to help alleviate premenstrual syndrome's intensity. However, the evidence for a strong connection between physical activity and premenstrual syndrome is currently lacking. Regular physical exercise is advised to alleviate premenstrual syndrome-related tiredness and sadness. According to some reports, aerobic exercise is another excellent method of reducing premenstrual syndrome. Numerous biological processes may account for the correlation between physical exercise and premenstrual syndrome. Physical exercise may boost endorphins, decrease estrogen and other steroid hormones, enhance muscle oxygen transport, lower cortisol levels, and promote psychological well-being (Daley et al., 2009; Lindh-Åstrand et al., 2004). All of these methods indicate an inverse relationship between physical activity and premenstrual syndrome, with more frequent physical exercise resulting in a less severe premenstrual syndrome. Psychologically, physical exercise may help you enhance your mood, boost your confidence, and conquer obstacles.

Calcium

Calcium has been proven to have an effect on mood that lasts during premenstrual syndrome. Restlessness, dehydration, and sadness may be alleviated in a woman with premenstrual syndrome who takes calcium without experiencing adverse effects. Three Calcium consumption should not exceed 1000 mg per day. Calcium consumption in excess of 1,336 mg/day may help alleviate symptoms of mood disorders, behavioral problems, discomfort, and water retention during the menstrual cycle. Calcium is obtained mostly through milk and other processed foods such as yogurt and cheese. It is also critical to maintain a regular vitamin D intake of 400-800 IU in addition to calcium for optimum benefit. Green, similar to spinach. Nuts, seeds, oats, oatmeal, yogurt, soybeans, avocados, and bananas are other sources.

Vitamin B

Vitamin B6 may help alleviate the sadness and anxiety associated with premenstrual syndrome. Vitamin B complex supplementation has been shown to have a substantial connection with PMS, which is defined by the decrease and eradication of physical and mental problems related with PMS. Vitamin B6 is suggested at a daily dosage of 50 to 100 mg. Whole grains, vegetables (carrots, spinach, peas), eggs, and meat are the primary sources of vitamin B6. There are about 200 symptoms linked with premenstrual syndrome, but the most frequent are irritability and dysphoria (feeling sad). Problems manifest six to ten days before to menstruation in the form of physical and psychological symptoms that impair daily activities and resolve after menstruation. Physical, emotional, and behavioral problems all occur throughout the menstrual cycle.

Back discomfort, bloating, and mood swings are all symptoms of Premenstrual Syndrome (PMS). Breasts are bloated and sore. Appetite instability, Difficulties urinating, Vertigo, Fainting Headache, Your back may feel weighty or depressed. Flashes of light (Face, neck, chest skin looks red and feels warm), SLEEPING PROBLEMS AND WEAKNESS

Senile

Premenstrual Syndrome (PMS) is more prevalent in women who are more sensitive to hormonal changes and the menstrual cycle. There are many risk factors for Premenstrual Syndrome (PMS). Genetics plays a significant influence in the development of PMS; this genetic contribution may be observed in family history; the families referred to in this research are biological families, namely mothers and sisters. If one of these family members has had STDs in the past, a person's chance of contracting STDs is increased. Factors that may enhance a woman's chance of contracting her first STD include pregnancy. PMS may be more severe even if a mother has given birth to numerous children. Married women are more likely to suffer premenstrual syndrome than unmarried women. Age is another risk factor that may contribute to the occurrence of PMS. In this instance, women aged 30 to 45 reported having more PMS and PMS as they grew older.

Stress

Stressors exacerbate premenstrual syndrome problems. It has a significant impact on one's ability to think and solve problems. Stress is a physical and psychological response to a person's responsibilities as a result of change. Anger, anxiety, and other emotions are all stress responses. A person's psychological and physiological reaction to stress is expressed via fear, anger, anxiety, frustration, or autonomic nerve activity.

Consumption of food

Consuming sugary or salty goods or beverages, such as coffee, tea, chocolate, soft drinks, dairy products, and semi-finished products, may exacerbate PMS symptoms. Body mass index (BMI) is one of the variables that affect the production of estrogen, and estrogen is the primary component that causes PMS. Certain nutrients, when deficient in the body, increase the likelihood of PMS. B vitamins (particularly B6), vitamin E, vitamin C, magnesium, iron, and linoleic acid are all evaluated. The second risk factor for PMS is inactivity and lack of physical activity. While inactivity may exacerbate premenstrual syndrome (PMS), physical activity can enhance endorphins, decrease estrogen and other steroid hormones, promote oxygen transport in muscles, decrease cortisol levels, and improve psychological circumstances.

The Different Types of Premenstrual Syndrome (PMS)

Premenstrual Syndrome (PMS) is classified into many subtypes based on the symptoms that manifest. These categories include the following: The anxiety form of premenstrual syndrome (PMS) is characterized by symptoms such as worry, nervous tension, and a sense of insecurity. Additionally, some women suffer mild to severe depression in the days before their menstruation. These symptoms are produced by an imbalance of the hormones estrogen and progesterone; estrogen levels are excessively high in comparison to progesterone levels. PMS of type H Type H (hyperhydration) is characterized by bloating, breast discomfort, hand and foot swelling, and weight increase before to menstruation. Edema develops as a result of the buildup of water in tissues outside the cells as a result of the sufferer's diet being high in salt or sugar.

PMS (craving) is characterized by an insatiable desire for sweet foods. Appetite for food Sweetness is a result of stressful thinking, excessive salt in meals, a lack of vital fatty acids (omega-6), or a magnesium deficit. PMS type D (depression) is marked by depressive symptoms, such as a desire to weep, weakness, insomnia, disorientation, and trouble pronouncing words. PMS type D is often co-occurring with type A. PMS type D syndrome is

caused by an imbalance of the hormones progesterone and estrogen, which occurs when progesterone levels are too high in comparison to estrogen levels throughout the menstrual cycle.

Premenstrual Syndrome Prevention (PMS)

Premenstrual syndrome may be prevented via the following measures: Daily lifestyle adjustments must be made to reduce symptoms associated with hormonal shifts. Healthy lifestyle choices such as limiting caffeine intake, increasing rest time to prevent tiredness, and managing stress all contribute to conquering PMS.

Because women with PMS may also have other illnesses such as hypoglycemia and hypertension, it is essential to emphasize particular research and preventative actions when developing dietary recommendations. Consuming rice, potatoes, and bread may help prevent edema (swelling), while avoiding caffeine (coffee), tea, alcohol, and soft drinks can help alleviate stress, anxiety, and sleeplessness (sleep disorders).

Develop a routine of exercise and physical activity. Jogging, running, cycling, or swimming are all acceptable modes of transportation. According to some women, exercising at night may help them relax and fall asleep. Quit smoking, enhance your self-control, decrease your stress level, limit your salt, sugar, and fat consumption, increase your carbohydrate and fiber intake, engage in strenuous exercise, relax and meditate, and drink vitamin B6, calcium, and magnesium.

Premenstrual Syndrome Assessment (PMS)

Premenstrual Syndrome (PMS) was quantified using the SPAF (The Shortened Premenstrual Assessment Form) diagnostic criteria, which included ten PMS symptoms. Each item was assigned a value of 1-6, ranging from not felt to extremely severe, for a total score of 60. The Body Mass Index (BMI) or Quetelet index is a technique of measuring or screening used to determine body composition. It is calculated using the weight and height of the individual, which are then multiplied by the BMI formula. BMI is a calculated number.

Relationship between Body Mass Index (BMI) and Premenstrual Syndrome Incidence (PMS)

Through the action of the hormone insulin, the connection between Body Mass Index (BMI) and Premenstrual Syndrome (PMS). Insulin levels in the body are directly proportional to body fat. Increased fat in the body alters insulin sensitivity and secretion. Adolescents who are overweight will have a direct rise in blood glucose levels. This increase will result in gluconeogenesis, altering insulin levels, which will continue to rise (hyperinsulinemia).

Premenstrual syndrome is caused by an imbalance of the hormones progesterone and estrogen, changes in the central nervous system effects of ovarian steroids, and changes in serotonin production during the luteal phase that influence appetite. Numerous studies have demonstrated that the majority of women who experience emotional symptoms during premenstrual syndrome do so as a result of an imbalance of the hormones estrogen and progesterone, which influence the neurotransmitters serotonin and GABA, which regulate appetite and eating behavior.

Estrogen hormone is produced not just in the ovaries, but also in subcutaneous fat. In obese women, increased estrogen production may result in hyperestrogenism. According to

some theories, Premenstrual Syndrome is caused by an excess of estrogen or a shortage of progesterone during the luteal phase of the menstrual cycle (PMS).

Conclusion

Based on studies on the link between body mass index (BMI) and the severity of premenstrual syndrome (PMS) in female college students. As a result, as a researcher, I can state the following: It was discovered that respondents with normal height and weight who dominated the findings of BMI measurements in this research were in the same BMI group as female students with moderate PMS. In female students, there is a substantial difference between BMI and PMS degrees. With a high degree of connection between BMI and PMS severity. In female students, there is a strong correlation between BMI and PMS degrees. With a high degree of connection between BMI and PMS severity.

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