



# A STUDY OF MENSTRUATION AND STRESS: THE BIOLOGICAL AND PSYCHOLOGICAL OVERVIEW ON MENARCHE AND MENSTRUAL DISORDERS

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## ABSTRACT

*This study explores the relationship between Menstruation and stress though, the average menstrual cycle of a woman is 28 days however anything from 25 to 35 days is assumed to be normal. Slight changes from month to month are familiar but the menstrual cycle should generally be the same every month. So throughout the whole month a feminine reproductive cycle fluctuate due to some internal and external elements. The sources of stress are infinite in reality; stress is deliberated to be a common reason of missed or late menstrual periods. The body's response to stress contains changes in the levels of many hormones it distresses hormone balance and many other processes in the body, psychological stress can also interfere with the menstrual cycle. So a missed period may basis of stress, or perhaps its stress that's triggering irregular periods among women. Hence this study exhibits the intercorrelations between menstruation and stress. Factors those are prominent for menstrual problems and their alleviation as well so the current study suggests that an effective coping mechanisms and tools decreasing the level of stress may aid body to return to a normal menstrual period.*

**KEYWORDS:** Menstruation, Menstrual disorders Ovulation, stress.

## MENSTRUAL CYCLE AFFECTS BEHAVIOURS

Throughout the month hormone levels fluctuate, there are going to be consistent variations in other hormones that are unquestionably going to affect feelings, thought processes as well as physical well-being. Regulation of menstrual periods is controlled by a complex hormonal balance. Similarly, the body's reaction to stress comprises changes in the levels of many hormones. Because it affects hormone balance as well as many other processes in the body, psychological stress can also interfere with the menstrual cycle. In fact, stress is reflected to be a common source of neglected or late menstrual periods. So the feminine reproductive system can be affected by stress too. In fact, for some women, stress may play a role in causing irregular or missed periods. As stress levels increase, there's a chance that menstrual period will temporarily stop, a condition known as secondary amenorrhoea.

In the world Menstruation among women is stigmatised. This disgrace put up because of old dogmas in uncleanness of menstruating women. It doesn't recognise what may have been the cause that enforced the righteous males to mention to menstruating women as 'unclean'. However all religions (apart from Sikhism) mention to menstruating woman as 'ritually unclean'. Across the sphere, females are continuously distress with concerns associated to hormones as well as menstruation. Dysmenorrhoea is one of the greatest

dominant menstrual problems throughout the adolescent period and can severely disturb women's everyday actions, even triggering some women to become bed-ridden (Rafique & Al-Sheikh, 2018).

However, individuals from diverse cultural as well as spiritual backgrounds observed Menstruation is over and over again as dirty or impure, and thus has turn into a depreciating feature of womanhood. Apart from physical risks, the concept that menstrual blood is contaminated and so a menstruating female places undesirable mental stress in some crisis and circumstances (Bhattacharjee, 2018).

Across the world the millions of adolescent girls and women experience the lives natural course of cyclical Menstruation. For womanhood, menstrual health is an essential part of overall health for the reason that, between menarche and menopause, most women menstruate and menstruation can have a major effect on the physical, mental, as well as social well-being. (Matteson et al, 2013).

While in India, menstruation is deliberated a natural occurrence, a gift from the God, and is reflected necessary as it gives womanhood. ( BhattR ,2005) . According to the World Health Organization (WHO) study, menstrual symbols are more common in Asian countries than in Western countries (Carr-Nangle et al, 2006).The most important characteristic of girls of their sexual evolution as well as development in the



course of puberty is the beginning of menstruation. A girl's first menstruation also known as her menarche is considered she is mature enough. At this phase, the first little drops of blood among girl offensively upsetting and mystifying. The cultural and familial attitudes and its understanding of impurity towards menstruation are therefore informed in this stage.

### THE BIOLOGICAL OVERVIEW ON MENARCHE

In the female reproductive system, the menstrual cycle is the regular or natural change that occurs specially in the uterus and ovaries, It is a natural phenomenon linking the release of blood from the uterus completes the vagina, arising at more or less fixed monthly pauses throughout the reproductive life of females which creates pregnancy conceivable by making the uterus for pregnancy and production of ovocytes. Thus, the menstrual cycle is directed by changes in hormone. Menstruation is a physiological process, which is linked with the capability to reproduce. The term "menstruation" originates from the Latin "menses" refer to moon, with mention to the lunar month and lasting also approximately 28 days long. Its onset profoundly fluctuate a young female's life. Menstruation has always been enclosed by altered perceptions all over the world. Today, there is some frankness on the way to menstruation, but variances in attitude still continue between different populations CronjeHS et al (1991).

### THE FOLLICULAR PHASE AND OVULATION

However, the follicular time of menstrual cycle activates on the day that start period and lasts for about 10 to 14 days. For the duration of this time, the hormone estradiol initiates to increase. Follicle-stimulating hormone, or FSH, is secreted; stimulating the production of follicles in the ovaries that contain eggs. In the follicular phase of their cycle females might show more brain activity the estradiol rising in the body can aid to compress the effects of the stress hormones adrenaline and cortisol. This hormone stimulates the release of an egg from the ovaries into the fallopian tubes for fertilization. Estradiol is existing in significant quantities around the time of ovulation, and it can work together with other hormones to increase libido. Estradiol makes insulin more effective, then the insulin says the body to release more testosterone and (testosterone is one of the hormones that regulate sex drive). While After ovulation, the empty follicle that once contained the egg begins to secrete the hormone progesterone to thicken the lining of the uterus and prepare it for the possible implantation of an embryo this is called the "Luteal Phase". cited by Acosta, J. (2012). Hence, Menstrual cycle of woman's typically follows a 28-day cycle and ends with the shedding of uterine lining leading to bleeding. Thus, Menstruation is considered a normal vaginal blood loss, to some extent blood as well as tissue from inside the uterus. It passes out of the body through the vagina that follows as a part of a woman's lifespan once a month. Every month, a woman's build makes for pregnancy. If no pregnancy happens, the uterus sheds its lining.

The first period is Menarche which generally initiates in the middle of twelve and fifteen years of age. Thus, the normal age of menarche is 12–15. They may sometimes start as quick as eight, and this beginning may still be normal. Menstrual bleeding continues 3 to 7 days, averaging 5 days. Menstruation ends arising after menopause which generally happens concerning 45 and 55 years of age. For the duration of the one to two weeks earlier to menstruation the common signs include acne, breasts tenderness, swelling, feeling fatigued, bad temper and mood fluctuations women report having a total of these indications. During their entire life, a woman menstruates for about 7 years. In this period women look many problems. The normal menstrual cycle specifies the appropriate working of hormones and suggests a strong hypothalamo-pituitary axis with an average uterus. On the other hand, a number of illnesses such sudden loss of weight, over-exercising, medical circumstances as well as even stress can delay with a woman's capability to experience a normal menstrual cycle.

### REVIEW OF LITERATURE

Bhavika Garg and Shikha Sharma (2020) studied Effect of academic stress on premenstrual syndrome the sample consisted of 60 students were taken from university with the age group of 18 – 25 years and the findings of the study revealed that there is positive association among academic stress as well as premenstrual syndrome those having severe level of academic stress has exposed severe level of signs of premenstrual syndrome whereas those with mild level of academic stress did not display the signs of premenstrual syndrome. Hence the study concluded that academic stress among the female students has the influence on the intensity level of premenstrual syndrome.

Aparajita Sharma, Aakriti Jain, Anupreet Kaur Arora (2017) investigated the relationship between Menstrual Distress And wellbeing among women. The study consisted the sample of 100 females. Hence the outcomes of the study determined that in women menstruation sources lot of distress, disturbances in their lives she experience psychological as well as physical symptoms leading to a decrease the wellbeing as well as quality of life.

Ruchi Singh, Renuka Sharma, Heena Rajani (2015) investigated the Impact of stress on menstrual cycle. These researchers took total 100 female (50 medical and 50 non-medicals) students and the results shown that the association between the level of stress and presence of premenstrual symptoms was perceived Significant, therefore passage of clots, painful periods as well as the occurrence of premenstrual symptoms was associated with higher stress. Hence likened to non-medical students the number of medical students suffered from higher premenstrual signs. The study also concluded that there is no dissimilarity in the level of perceived stress among non-medical and medical students.

Shahida Nagma et al., (2015) investigated To Evaluate the Effect of Perceived Stress on Menstrual Function. They conducted their study on 100 female undergraduate students



from a medical college. Hence the results concluded that menstrual irregularities related with high levels of stress.

## THE PSYCHOLOGICAL OVERVIEW ON MENARCHE

While, according to the World Health Organization, "health" is "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." (WHO, 2019). A woman's general good health is displays ordered menstrual cycle. Abnormal cycles of females with uneven and weighty bleeding, not only disrupt one's professional as well as private life but also involve assessment of a major damaging influence on prospect reproductive and general health. Abnormal menstrual cycles, with uneven as well as hefty bleeding, may have a harmful influence on females' education (Adams Hillard & Deitch, 2005). The menstrual period effects diverse day to day life aspects such as academic achievement, physical condition, behavioural pattern, diet, exercise, mood as well as sleep pattern. This is a period (menstrual) which is very tough and severe time in the life of females, it is a natural sensation. The Concept of Menstruation or the word menses originates from the Latin meaning "months". The term "menstruation" arises from ancient French menstrual, which derives from Latin menstrualis, meaning "monthly," particularly "of or having monthly courses.

## STRESS IMPACTS MENSTRUAL CYCLE

In psychology stress can be defined as any type of change that causes physical, emotional or psychological strain. It is a body response to anything that requires attention or action. Each person experiences stress and it isn't inherently bad, although research suggests that depending on the type of stressor (i.e. the reason for stress) and the timing of the stressor, it can cause changes to a person's menstrual cycle. Stress is a normal psychological and physiological reaction to changes in someone's environment, which could be emotional, physical, social or cultural. Although the association between stress and periods are not much people are known about. On the other hand, stress undoubtedly plays a role in overpowering the functioning of the hypothalamus (part of brain), which panels the pituitary gland (the body's master gland) which, in turn, controls the thyroid as well as adrenal glands and the ovaries; they all work together to manage hormones. Hence, the dysfunction of Ovarian may central to problems with estrogen production, ovulation, or other reproductive processes. Estrogen is an important hormone that helps build the uterine lining and prepares the body for pregnancy. If the ovaries aren't working properly, side effects may involve the menstrual cycle, including missed periods or irregular periods such as anovulation (i.e. no ovulation), or amenorrhea (i.e. absence of menstruation) Dysmenorrhea (i.e. painful menstruation).

The hypothalamus is the part of the brain that controls period. When hypothalamus working properly it releases chemicals that stimulate the pituitary gland, which then stimulate the ovary to release the period-inducing hormones estrogen and progesterone. Enter cortisol, which is a hormone

the body makes when an individual is under stress. It can wreak havoc on the hypothalamus, pituitary, ovary interaction and result in irregular periods. When under stress, the female body produces cortisol. Depending on how the body allows stress, the cortisol may lead to delayed or light periods — or no period at all (amenorrhea). If stress continues, an individual can go without a period for a long time. There's a range, the lighter stress may have lesser impacts, as well as heavy stress may have more intense impacts that last longer, The higher the cortisol levels, the more likely to have missing or irregular periods. If constantly stressed out, there may be more prone to problematic periods. However, Sometimes thyroid issues might interfere with hypothalamus, pituitary, ovary interactions resulting in disturbance of the menstrual cycle, these conditions are generally easy to fix. Hence, Polycystic ovary syndrome (PCOS) is another condition that can impact the menstrual cycle due to a hormonal imbalance. Hence so the first step is to rule out conditions that could be causing the period changes. If periods continue to skip, the body will have a hormonal imbalance. Cited by Swapna Kollikonda, (2020).

## FIVE MAIN WAYS THAT STRESSFUL CIRCUMSTANCE AFFECT THE MENSTRUAL CYCLE

1. The PMS gets worse  
Several women fight with PMS and from time to time it gets so bad that it can consequence in heavy menstrual bleeding, anxiety attacks, and bouts of depression. Throwing stress and anxiety into the combination of fluctuating hormones and mood swings isn't exactly a recipe for success. If observed that the PMS has got a lot worse, then there is a requirement to take a serious look at the stress levels and triggers life in order to be capable to restore normality.
2. The postponement or delay in ovulation  
When women are stressed lead up to ovulation, it makes is truly challenging for certain hormones to be activated and released on schedule. This will outcome in postponement or delayed ovulation, meaning the period will not be on predictable time. Delayed ovulation also poses a significant challenge to women who are design to get pregnant, particularly if they have fight back with fertility issues in the previous.
3. A longer cycle  
No one desires their period to last longer than is absolutely essential; however this is exactly happen as a side effect of stress. When women are going through delayed ovulation, she will inappropriately possible have to suffer a longer cycle than normal, and also experience a heavier flow. The onset of next cycle would also be late.
4. The period ends completely  
Stress conditions can have an influential effect on the menstrual cycle containing the amount of bleeding; the level of cramps, and, in some cases, the period could stop altogether. Hence dealing with a reduced appetite as a



consequence of stress or anxiety, as being underweight can also cause the period to stop.

#### 5. A woman will not ovulate

Although will still bleed each month, won't actually be ovulated. This can be an enormous issue if trying to conceive, as it may look like have period as usual, yet a woman will not be able to get pregnant. One of the most trustworthy methods to figure out, whether ovulating or not, is to chart the cervical mucus to see if it peaks or not; if it doesn't, then might not be ovulating.

Hence, Menstruation is not only restrained to the physical pain as well as symptoms but it distresses the mental health of female adolescents also. Both longer duration of menstrual bleeding and irregularity of the cycle are related with major depression. Hence, Menstrual health not just the absenteeism of illness or sickness, in relation to the menstrual cycle but it is a state of whole physical, mental, as well as social well-being. Menstrual hygiene management (MHM) needs easy right to use to safe, private water and sanitation facilities, along with suitable menstrual resources and supplies, discreet disposal as well as waste management and basic facts on menstrual hygiene in perspectives of displacement (Sommer et al., 2018).

The neuroendocrine structure shows a main part in continuing homeostasis as a consequence of stress and thus effects endocrine and reproductive system. As an outcome of hormonal variations such as activation of the corticotrophin-releasing hormone, the normal menstrual cycle can be affected (Eva et al., 2015).

Based on a biopsychosocial model, "menstruation-related signs are affected not only by biological factors such as hormonal disorders and lifestyle (sport and nutrition) but also by environmental and social factors such as contact with peers, family and colleagues and menstrual and psychological factors such as anxiety, depression, and stress" (Davydov et al, 2005). According to Flug et al 2000 one of the greatest and common disorders in women are menstrual symptoms that comprise irritability, tender breasts, low back pain, skin outbreaks, tiredness, palpitation, social isolation, nausea and vomiting, abdominal pain (cramps) and general weakness (Zegeye et al, 2009) that arise before, during, or after menstrual period.

A range of menstrual-related complaints or menstrual disorders, often experience by College-going young females including

- Dysmenorrhoea
- Menorrhagia
- Irregular Menses
- Polymenorrhea
- Abnormal Vaginal Bleeding
- Amenorrhea
- Oligomenorrhea
- Irregular Menstruation
- Pre- Menstrual Syndrome (PMS).

#### 1. Dysmenorrhoea

Dysmenorrhoea is the medical term for painful menstrual periods which are caused by uterine contractions. Menstrual cramps or Dysmenorrhoea with common causes such as heavy flow, passing clots, uterine fibroids or endometriosis.

#### 2. Menorrhagia

Menorrhagia is the medical term for menstrual periods with abnormally heavy or prolonged vaginal bleeding with menstrual cycle.

**3. Polymenorrhea** : is a term used to describe a menstrual cycle that is shorter than 21 days. A normal menstrual cycle is between 24 and 38 days long. Polymenorrhea is just one form of abnormal uterine bleeding.

**4. Amenorrhea**: is the absence of monthly menstrual periods. The absence of periods can have causes that are not due to underlying disease example includes menopause, pregnancy, use of birth control, medication side effects, delayed puberty and stress.

**5. Oligomenorrhea** : is when a woman often don't get periods for 35 days or more and as a result have only four to nine periods each year.

**6. Pre- Menstrual Syndrome (PMS)** has a wide variety of signs and symptoms including mood swings, tender breasts, food cravings, fatigue, irritability and depression its estimated that as many 3 of every 4 menstruating women have experience some forms of Pre- Menstrual Syndrome or which is a cluster of troublesome symptoms like backache, fatigue and irritability that develop 7-14 days before the onset of menstruation and subside when menstruation starts.

**7. Irregular Menses /Irregular Menstruation** are missed, delayed or erratic periods or abnormal bleeding patterns.

**8. Abnormal Vaginal Bleeding** : may be minor but it could signal something more serious or even life threatening such as benign growth like a polyp or fibroid, a bleeding disorder, an infection or an injury .it's rare but spotting can be a sign of cancer.

Thus, Psychological disorders may stimulate corticotrophin releasing hormone (CRH) from the nervous system, go along with by raised cortisol and prolactin, causing in symbols of menstruation (Lee et al, 2009). "Psychological factors that occur before and during menstruation can cause amenorrhea, cycle irregularity and increased menstrual cycle length which are important health-related problems in women" (Allsworth et al., 2007).

Females in stress pay slight attention to how often sanitary cloths / pads should be changed in a day, proper





disposal and washing of cloths as well as the heightened need of washing their genitalia (Krishnan & Twigg, 2016).

#### **Future suggestion / Methods to Relief Menstrual Pains**

According to Melissa Conrad Stöppler, 2012 there are some tips for relieving Menstrual Troubles

##### **1. Practice Good Sleep Hygiene**

Sleep quality has an effect on menstrual symptoms and many health conditions. Practice good sleep hygiene to keep painful menstruation symptoms at natural harbour. Getting adequate sleep to promote overall health will help to manage monthly symptoms associated with menstrual cycle.

##### **2. Taking a warm bath.**

A warm bath by adding some luxurious bubble bath or fragrant essential oil may be just the thing that needs to soothe pain and relax tense muscles. Start taking a bath in the evening is a great activity to help wind down and sleep better. A warm shower also can produce similar benefits and reduce pelvic pain and other symptoms.

##### **3. Reach for Heat**

Applying a heating pad, heat wrap, or hot water bottle to abdomen works wonders for relieving menstrual cramps. The continuous application of heat may work as for the relief of dysmenorrhea pain. Heat helps muscles relax.

##### **4. The Sunshine of Vitamin D**

Vitamin D reduces the production of prostaglandins. As Cramps linked with dysmenorrhea can be disabling. Painful cramps associated with dysmenorrhea happen due to increasing levels of prostaglandins, which cause the uterus to contract. These contractions cause the shedding of the uterine lining.

##### **5. Sipping chamomile**

When women menstruate the sipping chamomile tea may aid decrease cramps. Chamomile tea is full of anti-inflammatory substances that inhibit prostaglandins. Sipping chamomile tea inhibits pain-causing prostaglandins and enhances menstrual flow to ease period symptoms. Prostaglandins are made by cells in the endometrium of the uterus. These cells release prostaglandins during a woman's period, provoking muscle contractions of the uterus, pain, and cramps. Prostaglandins in the bloods are responsible for nausea, vomiting, diarrhea, and headache during the menstrual period.

##### **6. Hydrate**

Primary dysmenorrhea or menstrual cramps are a painful part of life for lots of females. Consumption of more water may benefit comfort inflating, which makes period symptoms worse. Especially during period the habit of drinking 6 to 8 glasses of water per day, may help.

##### **7. Fennel**

Extract may be a good alternative for the approximately 10 percent of women who can't do their normal activities for 1 to 3 days during their periods due to severe menstrual cramps.

##### **8. Exercise for Period Cramps**

An easy home remedy for menstrual pain is to perform light exercises that engage the core. Many women find that exercising or Yoga aids relieve menstrual cramps. Exercise releases endorphins, brain chemicals that promote well-being. Whether to enjoy walking, running, or swimming, it's safe to participate in all of these activities during menstrual period. Taking deep breaths may also help women who have primary dysmenorrhea. Physical exercise, receiving peaceful sleep, having a nutritious or healthy diet, conferring with family as well as friends and having healthy social activities can possibly decrease the effects of stress on individual's health Cited by Maegan Boutot, 2016.

##### **9. A Sprinkle of Cinnamon and Ginger**

The women didn't report any side effects related with taking cinnamon pills or using Ginger. Try a sprinkle of cinnamon and Ginger on cereal or cup of hot cocoa. It can't hurt and it might help cramps and other period symptoms.

##### **10. The Anti-Cramp Mineral: Calcium**

Adequate calcium intake may also help relieve menstrual cramps. Calcium is a nutrient that everyone needs, but most women don't get enough. The need of calcium not just for healthy bones, but for proper function of the heart, muscles, and nervous system.

##### **11. More Magnesium**

Magnesium is an essential mineral of the body needs to fuel more than 300 enzyme systems. To build muscles, proteins, and healthy bones, the body needs magnesium for the proper function of muscles and nerves, to regulate blood pressure, and control blood sugar levels. You need magnesium to build DNA and RNA and to manufacture glutathione, the master antioxidant of the body. Magnesium may also help alleviate symptoms of PMS.

**12. Massage:** The natural ways for managing stressful situations is the: Massage through the usage of cannabis oil or CBD oil for stress several individuals have been capable to significantly lessen stress as well as anxiety.

Hence, Findings effective coping mechanisms and decreasing level of stress may aid body to return to a normal menstrual period. Speaking with a therapist/ physician or doctors or feasibly taking anti-anxiety drug cans lesser stress as well as help to manage symptoms of stress and allowing the body system to reappearance to regularity cited by Melanie Winderlich, 2010.

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