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Review Article

Effect of Menstruation Cycle on Mood, Affection, Mental Health and Valence

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Abstract

There is a quote from Elizabeth Gilbert's Eat, Pray, Love; "You are, after all, what you think. Your emotions are the slaves to your thoughts, and you are the slave to your emotions." Expanding our personal boundaries and breaking gender stereotypes can surely enable us to be examples of positivity and confidence. The women of the present generation have generally received higher education than the women of their preceding generation. There have been far reaching consequences in the economic status of their families. Self-esteem refers to how you feel about yourself overall; how much esteem, positive regard or self-love you have. It's not a quality that changes very much since it is related to a broad sense of personal value or self worth. People with high self-esteem tend to see the universe as a pretty friendly place. Self esteem adversely affects physical and mental health. The clinical literature suggests that low self esteem is associated with depression, hopelessness, and suicidal tendencies which can further lead to attempt of suicide.

***Keywords**: Higher Education, Mental Health, Menstruation*

Introduction

Evidence exists for behavioral and somatic changes across the menstrual cycle. Some studies have found significant changes in mood states, while others have found no significant changes. The premenstrual phase occurs over at least 4 days prior to onset of menstruation. Up to 97% of women experience some physical symptoms and mood changes premenstrually. Some 50% experience minor changes premenstrually, while 35% experience symptoms and mood changes that disrupt work, social and family life. Approximately 5-10% experience severely debilitating symptoms that cause major disruptions to their lives. Mood changes such as anxiety, depression, confusion, emotional lability, irritability, loss of concentration, lethargy, and aggression/hostility, have been associated with the menstrual cycle. Physical symptoms reported mainly during the premenstrual/paramenstrual phases, include skin disorders, oedema, pelvic pain, breast tenderness, headaches, muscle pain, weight increase and vomiting. Corney and Stanton reported that 63% of women experienced symptoms and mood changes up to 3 days after the onset of menstruation while 5% reported debilitating effects continuing until the end of menstruation. All women reported their symptoms/mood changes as lasting from 2 to 8 days premenstrually. Treatments include administration of antidepressants

and tranquillisers, hormonal treatments such as oral contraceptives, counselling and psychotherapy.

The menstrual cycle begins, by definition , with the onset of menstrual flow on day 1. The menstrual phase (generally lasting between 4 and 6 days) is defined by the shedding of the thickened endometrium, a process known as menstrual bleeding. The follicular or proliferative phase continues until ovulation, typically days 7 through 14. The luteal, or secretory phase begins at ovulation and continues until the onset of the menstrual flow, typically days 15 through 28. The menstrual phase and early follicular phase of the menstrual cycle are characterized by low levels of both progesterone and estrogen. Estrogen levels rise rapidly late in the follicular phase, peaking 1 day before ovulation.

The luteal phase sees a steady rise in progesterone levels that peaks mid-luteal phase, in parallel with a second estrogen peak. Late luteal phase is characterized by declines in both estrogen and progesterone levels that reach baseline shortly before the onset of menstruation, which begins the cycle again, as shown in Fig. The cyclic hormonal changes which regulate the menstrual cycle are an important biological influence on the female body, with numerous physical ramifications.

Estrogen initiates or mediates an impressive array of biological functions, with receptors in a multitude of tissues and cell types. In fact, fluctuating levels of estrogen have been shown to have physiologically demonstrable effects on virtually every organ system in the body. The influences of progesterone on the body are less studied and more limited, but still an important determinant. Our companion paper reviews the modulation of physiological processes by these hormones as they fluctuate over the menstrual cycle.

The effects of the menstrual cycle on emotional state and cognitive function have been long recognized (if only recently systematically studied), a fact easily confirmed by the observation that a significant proportion of internet humor exchanged by modern women deals with theemotional impact of menses, particularly during the premenstrual period. As medical science continues to investigate the complex interplay of the hormones which influence the menstrual cycle and their interdependent influence on the mind and body, it is becoming clear that the fluctuating levels of these hormones affect both physiological and psychological processes.

Menstrual cycle and mood: A widespread belief that negative moods are characteristic of the premenstrual period is replete in the popular culture. This belief has scientific support. In an early landmark study of neurotic women, psychoanalytic analysis of diaries in which women recorded emotional status and dreams was able to correctly identify hormonal status in 94% of patient cycles analyzed. Patients were consistently more restless, irritable, fatigued, fearful, and depressed during the premenstrual period than other phases of the menstrual cycle, as well as being hypersensitive to various stimuli.

Menstrual cycle and mental function and mental health: The last few decades have confirmed scientifically that gender resides in the nervous as well as the

reproductive systems. Estrogens are critical elements in the imprinting of gender on a developing fetus, creating a synaptic plasticity that becomes abundantly evident during puberty and thereafter during the menstrual cycle. The distinct differences between men and women with regard to information processing is thought to stem from differing exposure to sex hormones in uterus, which lays down gender-specific wiring that will be activated by surges in gondola steroids at puberty.

Interestingly, these early hypotheses have been confirmed by studies in unfortunate natural experiments such as Turner Syndrome children [who have only one sex chromosome (an X)] and in another congenital disorder called congenital adrenal hyperplasia, in which congenital disturbances in the levels of sex hormones carry predictable effects on mental processing.

Objective: The main objective of this study to examine effect of menstruation on Mood (Hedonic arousal, Anger frustration), Emotion (Negative Affect), Mental Health, Picture perception, Pulse Rate, %SpO2 and Body Temperature. Mood adjective checklist for hedonic arousal and anger frustration, positive and negative affect scale and mental health were used.

METHOD

Subjects and procedure: The total participates consisted of 30 females (Hostel students) who were educated at U.G. and P.G. It informs properly that test have administered **Two condition**: during the menstruation cycle(FIRST TEST)and after 10 to 15 days of menstruation cycle(SECOND TEST).

Tools

Physiological Instrument: Body Temperature machine, Pulse Oxymetry machine for Oxygen saturation was used in this study.

Psychometric tools: UWIST Mood Adjective Checklist used for assessment of hedonic Arousaland anger frustration. Positive affect and negative affect scale was used to assess negative affect. P.G.I. H.Q. N-Iwhich was developed by S. K. Verma, N. N. Wig, D. Prashad, was used to measure of Mental Health.

Positive and Negative Pictures: Two set (20 pictures in each) of picture in which 10 were High aroused and 10 were low aroused pictures were used from IAPS.

RESULTS AND DISCUSSION

Hedonic arousal: The mean was not found lower in first test (M = 22.33) in compression to second test (M= 28.57). Furthermore when these data were submitted to t-test, paired two sample for mean this difference was found significant at p =0.00 level.

This significant level is sufficient to show the differences between both time on difference. Mean, variance, t-value and significant level are shows in Table-1 and graphical presentation of these data are showing in Figure -1

Table-1: *Mean, variance and t-test values of mood hedonic arousal first test and mood hedonic arousal second test.*

	Mean	Variance	df	t Stat	p-value
first test	22.33	42.92	29.00	4.15	0.00
second test	28.57	15.43			

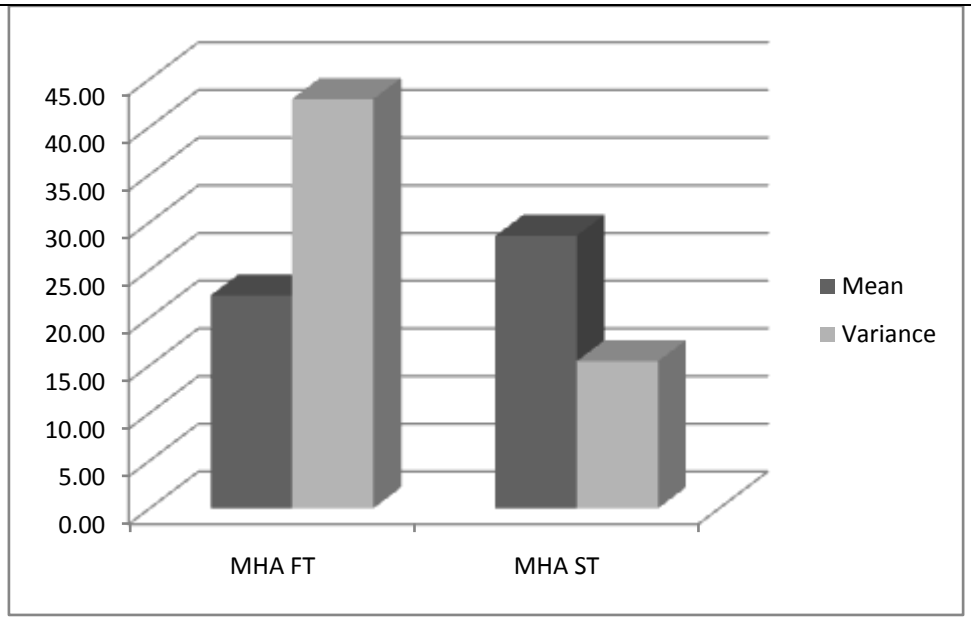

Figure No: 1 *mean and variance mood as a hedonic arousal during menstruation cycle and normal time.*

Anger frustration: The mean was found higher in first test (M = 12.33) in compression to second test (M=7.10). Furthermore when these data were submitted to t-test, paired two sample for mean this difference was found significant at p =0.00 level. This significant level is sufficient to show the differences between both time on difference. Mean, variance, t-value and significant level are shows in Table-2 and graphical presentation of these data are showing in Figure -2

Table-2: *Mean, variance and t-test values of mood anger frustration first test and mood anger frustration second test.*

	Mean	Variance	df	t Stat	p-value
first test	12.33	26.99	29.00	4.89	0.00
second test	7.10	9.40			

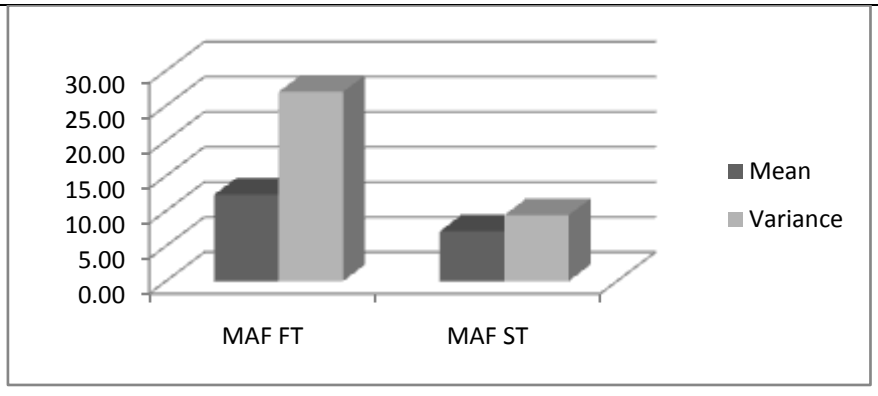

Figure No: 2 *mean and variance mood as a anger frustration during menstruation cycle and normal time.*

Negative affect: The mean was found higher in first test (M =21.33) in compression to second test (M=14.77). Furthermore when these data were submitted to t-test, paired two sample for mean this difference was found significant at p =0.00 level. This significant level is sufficient to show the differences between both time on difference. Mean, variance, t-value and significant level are shows in Table-3 and graphical presentation of these data are showing in Figure -3

Table-3: *Mean, variance and t-test values of emotion negative affect first test and emotion negative affect second test.*

	Mean	Variance	df	t Stat	p-value
first test	21.33	64.95	29.00	3.72	0.00
second test	14.77	36.60			

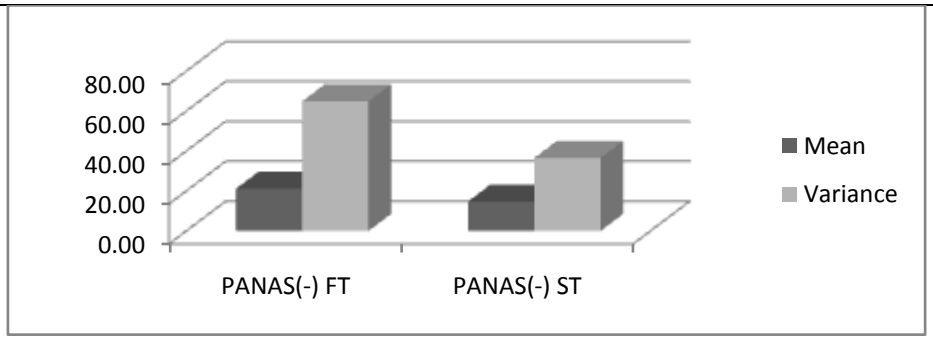

Figure No: 3 *mean and variance emotion as a negative affect during menstruation cycle and normal time.*

Mental Health: The mean was found higher in first test (M =8.20) in compression to second test (M=6.10). Furthermore when these data were submitted to t-test, paired two sample for mean this difference was found significant at p =0.00 level. This significant level is sufficient to show the differences between both time on difference.

Mean, variance, t-value and significant level are shows in Table-4 and graphical presentation of these data are showing in Figure -4

Table-4: *Mean, variance and t-test values of mental health first test and emotion mental health second test*

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	Mean	Variance	df	t Stat	p-value
first test	8.20	19.82	29.00	7.76	0.00
second test	6.10	17.61			

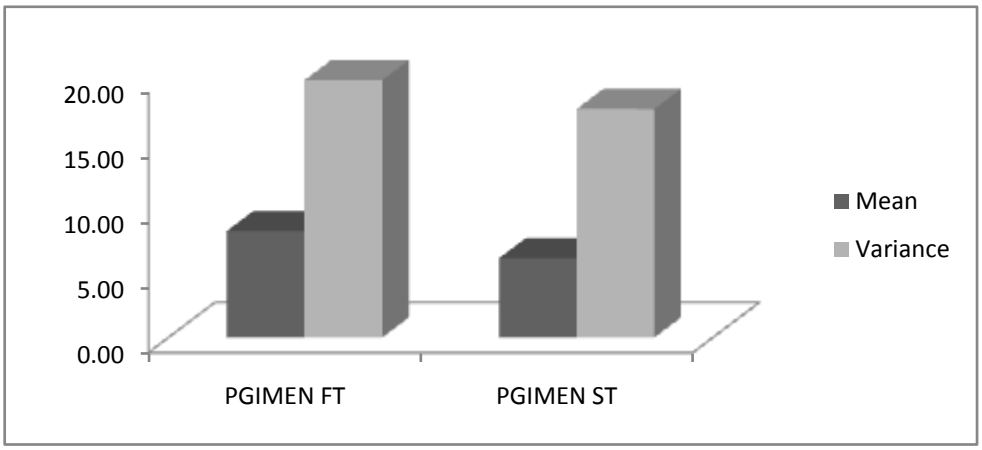

Figure No: 4 *mean and variance health as a mental health during menstruation cycle and normal time.*

Perceived high valence picture: The mean was found higher in first test (M =27.28) in compression to valence high second test (M =23.70). Furthermore when these data were submitted to t-test, paired two sample for mean this difference was found significant at p =0.17 level. This significant level is sufficient to show the differences between both time on difference.

Perceived low valence picture: The mean was found equal in both first test (M =73.30) and second test (M =73.23). Furthermore when these data were submitted to t-test, paired two sample for mean this difference was found significant at p =0.49 level. This significant level is sufficient to show the differences between both time on difference.

Pulse rate: The mean was found higher in first test (M =80.60) in compression to second test (M =78.90). Furthermore when these data were submitted to t-test, paired two sample for mean this difference was found significant at p =0.19 level. This significant level is sufficient to show the differences between both time on difference.

Oxygen saturation rate: The mean was found almost equal in first test (M =98.10) and second test (M =98.27). Furthermore when these data were submitted to t-test, paired two sample for mean this difference was found significant at p =0.33 level.

Body Temperature: The mean was found equal infirst test (M =98.15) in compression to second test (M =98.16). Furthermore when these data were submitted to t-test, paired two sample for mean this difference was found significant at p =0.49 level. This significant level is sufficient to show the differences between both time on difference.

CONCLUSION

The main objective of this study was to see the effect of menstruation cycle on hedonic arousal and anger frustration, negative affection, mental health and perceived valence. Results shows than female have low hedonic arousal, high anger frustration and high negative affect during their menstruation period in comparison to normal days. Furthermore, perceived mental health was also found more negative in menstruation period than their counter assessment. Another variable

i.e. perceived pictures (high and low valence), body temperature, oxygen saturation and pulse rate not show any significant difference in both condition. This study may useful to understand female health in general and during menstruation in particular. These results also helpful to develop an intervention program like yogaic intervention for females.

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