



MENTAL HEALTH AND MENSTRUAL HEALTH AMONG OBG POST GRADUATE STUDENTS DURING CORONA PANDEMIC TIMES

Obstetrics & Gynaecology

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ABSTRACT

BACKGROUND & OBJECTIVE: Research suggests that medical students, as well as women, are at greater risk of depression, compared to the general population and men. Various studies have proven that mental health adversely affects menstrual health causing irregular periods, shorter cycles (<28 days). This suggests that female medical students are crucial targets requiring specific monitoring for mental health disorder prevention and intervention. Therefore, the aim of the present study is to analyze whether menstrual health is associated with Mental Health among female medical OBG [Obstetrics and gynecology postgraduate students].

MATERIALS & METHODS: A self-reporting questionnaire was used to perform the research. A total of 250 postgraduates were issued the questionnaire, and 200 postgraduates responded. The survey was completed and personal information was gathered, then uploaded to a Microsoft Excel sheet for analysis.

RESULTS: The analysis showed that out of 200 responders of female postgraduates 49.6% of doctors were found to be suffering from stress with the menstrual problems in the current pandemic situation indicating mental health difficulties having a negative impact on the menstrual period. The correlation between mental health and the menstrual cycle was shown to be significant [$p < 0.05$].

CONCLUSION: Thus it is important to recognize the mental health of OBG postgraduates, as well as find solutions to the underlying reasons, in order to rescue the current and future of healthcare from mental health crises.

KEYWORDS

Obsterics – gynecologist, questionnaire, postgraduates, menstrual and mental health.

INTRODUCTION:

The concept of stress is elusive because it is poorly defined. There is no single agreed definition but the Concise of Oxford Dictionary defines stress as “weariness after exertion or long strain”. Stress is the nonspecific (physiological) response of the body to any demand made upon it (Hans Seyle et al., 1956). [1] Levi and Kagan suggested that most life changes evoke a physiological stress response that prepares the person for the physical activity of coping. This response at least if prolonged, intense or often repeated, is accompanied by an increase of wear and tear in the person and produces structural as well as functional damage. [2]

Stress is one of the most common mental health disorders. Hormones play a major role in both mental health and in menstrual health. Hormonal changes can have an impact on mood. [3] Previous studies have proven a strong association between stress and abnormal menstruation pattern. Adrenaline and Cortisol, the stress-induced hormones decrease the level of gonadal hormones such as estrogen and progesterone which in turn have an effect on neurotransmitters such as serotonin, dopamine, etc. [4,5] Altered exposure to gonadal hormonal variations, such as loss of estrogen or progesterone in the late luteal phase and during the menstrual cycle, may lead to premenstrual syndrome (PMS) in susceptible women. It is found to be prevalent in >15% of Indian female [6] and usually involves the signs of mild to moderate mood changes and also have an impact on the eating behavior of women. It is a disorder with emotional (irritability, sadness, hopelessness and excessive worry etc.) and physical symptoms (clouded thinking, lack of concentration on work, headache, cramps, backache, bloating, food cravings, etc). [6] Symptoms emerge one to two weeks before menses and resolve completely with the onset of menses. A severe form of PMS leads to a condition known as Premenstrual Dysmorphic Disorder (PMD) which severely disrupts the social, personal, and work life. [7] According to various studies, [8-10] there seems to be a strong association between PMDD and low levels of serotonin, a chemical in the brain that helps transmit nerve signals. A drop in serotonin levels can contribute to PMDD symptoms since serotonin helps control mood, sleep, and pain. Similar experiences are faced by the female after the menstruation phase in a less common condition known as a post-menstrual

syndrome which is highly influenced by testosterone and estrogen levels. [11] Women with a family history of mental illness are at a higher risk for developing menstrual problems. Substance use, mood disorders can have adverse effects on menstrual health, making the cycle shorter than 28 days.

Genetics, home and work environment can play a significant role in the mental health of an individual thereby having an effect on the menstrual health of women. [12] Most importantly, the covid pandemic had made a severe influence on the mental health of the people thereby affecting the menstrual cycle. Especially medical students are subjected to depression and mental health issues as a result of the enormous work pressure in the ward, time limitations, examinations, competitiveness, and tough curricular aspects. Healthcare personnel across the world are working nonstop to keep the situation under control. The lengthy working hours while wearing PPE, the 14-day self-quarantine period, keeping away from family, and various other factors does influence the mental wellbeing of an individual. [13]

Excessive work, Financial and family issues, Fear of Covid, bursts of energy, poor concentration, and tension are the most commonly reported signs. [14]

Even among healthcare experts in a nation like India, mental health is still a poorly recognized problem. It is critical to examine the mental health of healthcare providers during menstruation on a regular basis for them to function at their best during these challenging periods. Apart from the fact that both mental health and menstrual health are still taboo in our culture, its importance in an unusual circumstance such as a pandemic cannot be overstated. [15]

The purpose of this study is to look at the relationship between stress, anxiety, and depression, and menstruation among postgraduate medical students during the Coronavirus pandemic.

MATERIALS AND METHODS:

Ethics: The study was approved by the institutional ethics committee. An online written informed consent was obtained from all potential participants.

Study period:

The study was conducted in the month of April and May 2021 using a self-reporting questionnaire.

Study design:

This was a cross-sectional study done on female OBG Postgraduates to study the prevalence of mental stress among them.

METHODOLOGY:

To avoid physical contact and maintain social distancing norm, this study was done via online platform. The questionnaire, which included demographic profiles (age, gender, type of year, marital status), Menstrual pattern and Depression, Anxiety & Stress scale was made using Google forms and the link for participation was sent using various digital mediums e.g.: email, WhatsApp, Facebook. We also requested that the questionnaire be distributed among peers. The purpose of the study was explained and participants were given the freedom to choose to participate in the study. Consent for participating in the study was obtained. Doctors having any prior mental or acute physical sickness were excluded from the study.

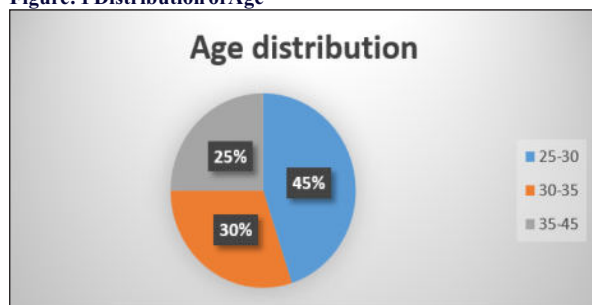
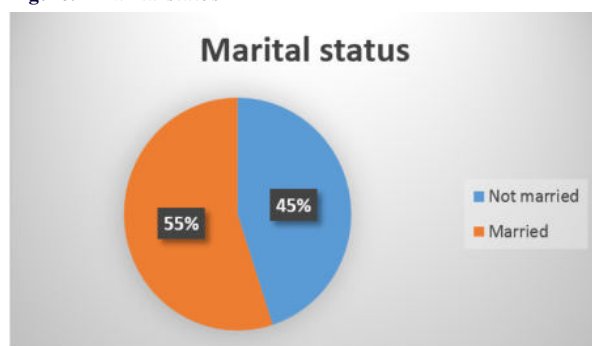
The questionnaire was sent to a total of 250 doctors and there was a total of 200 responses received. Data was collected using Google forms and then uploaded to a Microsoft Excel spreadsheet for analysis. Respondents were allowed to submit only once to prevent duplicity of responses. Microsoft Excel was used to analyze the data. The moderate reaction we received might be due to a variety of causes. Doctors have been bombarded with emails urging them to attend webinars and complete questionnaires, diluting their attention and reaction. Even the stress of Covid-19 responsibilities takes a toll on the majority of healthcare personnel. The link was open for 2 months.

Statistical analysis:

Descriptive statistics for the prevalence and quantitative variables were used. Relation between mental and menstrual health was determined using the chi-square test. P-value of less than 0.05 was considered statistically significant.

RESULTS:

About 45% of female participant in the present study were of age between 25 – 30 years and 30% between 30 – 35 years. [Figure: 1] 55% of them were married. [Figure: 2] 56.4% were from 3rd year, 30% were 2nd year and 13.6% were from 1st year of their postgraduate degree.

Figure: 1 Distribution of Age**Figure: 2 Marital status**

According to Table: 1, we found 75% respondents were having regular periods, all were having different quantity / duration of menstrual flow. 75% had Oligomenorrhea, 23% normal frequency and 2% had polymenorrhea.

Table: 1 Menstrual Health

Periods	Regular	75%
	Irregular	25%
Quantity/ Duration	Scanty flow <2 days	40%
	Excessive flow >7 days	15%
	Normal	45%
Frequency of periods	Veryfrequent- Polymenorrhoea	2%
	Normal	23%
	Oligomenorrhea	75%

The various causes of stress were evaluated and tabulated. In that 49.6% went through mental disturbance because of excessive work, 17% were depressed with family issues, 7 % taking care of children, 6 % exam stress, 5% had stress with fear of Covid and other health issues [Figure: 3] Stress distribution was evaluated by mental health scale.

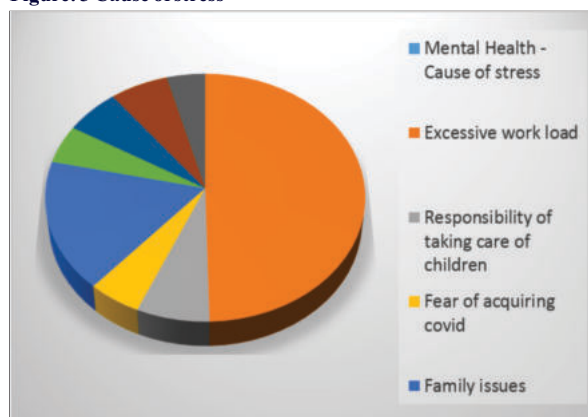
Figure: 3 Cause of stress

Table (2) shows that; there was a significant correlation between mental health and menstrual health, severity of bleeding and menstruation prevention ($P < 0.05$).

Table: 2 Association Between Mental And Menstrual Health During Covid Times

	Never	Almost never	some times	Fairly often	Very often	P value
Menstrual Health						
Dysmenorrhea	7	5	8	8	3	0.017
Past medical history	10	2	15	13	12	
Menstrual irregularity	3	6	30	12	4	
Excessive flow > 7 days	3	4	16	3	4	
Cause of Stress						
Excess of work	15	20	35	30	15	0.002
Family issues	5	18	20	7	5	
Fear of getting infected with Covid	2	1	18	13	11	
Fear of exams	5	2	15	10	8	

DISCUSSION:

Our research aimed to show how poor mental health affects the menstrual cycle in OBG - PGs. According to our data, 17% of people were stressed because of family problems. 5% were under stress due to a fear of Covid. Excessive labor caused mental disturbances in 49.6% of those surveyed, 13% were concerned about child care. According to a previous (study, a large number of participants suffer from psychological problems despite menstrual symptoms in premenstruation, during bleeding, and post menstruation periods (94%), with the lowest rate (40.8 %) in the post-menstruation phase. There was a strong link between anxiety and menstrual symptoms. [16]

Behar et al., [17] cross-sectional study of 256 medical students showed a significant link between premenstrual symptoms and anxiety, sadness, or stress. Another research in Chennai found that students with moderate menstrual symptoms reported higher levels of sadness (20%) than anxiety and stress (13.8% and 10.7%, respectively). Students with minor menstrual symptoms were more anxious (17.3%) than those suffering from sadness or stress (12.5%, 10.7%, respectively). [18] Premenstrual aggravation of anxiety

symptoms in women with a social anxiety disorder was observed by Van Veen et al. [19]

Global felt stress, averaged over the five days preceding menses, predicted premenstrual symptoms in a prospective study of women with various degrees of premenstrual indicators. Furthermore, premenstrual symptoms predicted perceived stress, indicating that stress and premenstrual symptoms have a similar connection. Many studies indicated that increases in stress scores were strongly and significantly linked with changes in the prevalence of PMS symptoms, as well as participants stating that stress exacerbated PMS symptoms. [20,21]

In terms of the impact of anxiety on menstrual cycle regularity and intensity of bleeding, our research found a strong link between anxiety and menstrual cycle length, severity of bleeding, and menstruation prevention. A previous study [22] found a statistically significant difference in the intensity of distress before, during, and after menstruation, with a $p = 0.000$ difference. At $p = 0.000$, there was a significant link between menstrual discomfort and depression, anxiety, and stress before, during, and after menstruation.

CONCLUSION:

The menstrual cycle is negatively affected by mental stress. There was association between anxiety and the length of the menstrual cycle, the intensity of bleeding, and the absence of menstruation. To improve women's quality of life, health practitioners should encourage them to practice excellent self-care, while also maintaining menstrual hygiene. The mental health during the menstrual cycle also needs to be maintained by doing activities that create a sense of calmness and relaxation.

REFERENCES:

1. Selye H. Stress and psychiatry. *American Journal of Psychiatry*. 1956 Nov;113(5):423-7.
2. Luecken LJ, Lemery KS. Early caregiving and physiological stress responses. *Clinical psychology review*. 2004 May 1;24(2):171-91.
3. Dzator J. Hard times and common mental health disorders in developing countries: insights from urban Ghana. *The journal of behavioral health services & research*. 2013 Jan;40(1):71-87.
4. Jha N, Bhadoria AS, Bahurupi Y, Gawande K, Jain B, Chaturvedi J, Kishore S. Psychosocial and stress-related risk factors for abnormal menstrual cycle pattern among adolescent girls: A case-control study. *Journal of Education and Health Promotion*. 2020;9.
5. Dhawan A, Hernole J. Effect of perceived pandemic stress and sleep variation on menstrual cycle occurrence, its severity and premenstrual syndrome: a cross sectional study. *Journal of Womens Health and Development*. 2020;3(4):437-45.
6. Raval CM, Panchal BN, Tiwari DS, Vala AU, Bhatt RB. Prevalence of premenstrual syndrome and premenstrual dysphoric disorder among college students of Bhavnagar, Gujarat. *Indian Journal of psychiatry*. 2016 Apr;58(2):164.
7. Dutta A, Sharma A. Prevalence of premenstrual syndrome and premenstrual dysphoric disorder in India: A systematic review and meta-analysis. *Health promotion perspectives*. 2021;11(2):161.
8. del Mar Fernández M, Regueira-Méndez C, Takkouche B. Psychological factors and premenstrual syndrome: A Spanish case-control study. *PloS one*. 2019 Mar 6;14(3):e0212557.
9. Foster R, Vaisberg M, Bachi AL, Dos Santos JD, de Paula Vieira R, Luna-Junior LA, Araújo MP, Parmigiano TR, Borges F, Di-Bella ZI. Premenstrual syndrome, inflammatory status, and mood states in soccer players. *Neuroimmunomodulation*. 2019;26(1):1-6.
10. Hashim MS, Obaideen AA, Jahrami HA, Radwan H, Hamad HJ, Owais AA, Alardah LG, Qiblawi S, Al-Yateem N. Premenstrual syndrome is associated with dietary and lifestyle behaviors among university students: A cross-sectional study from Sharjah, UAE. *Nutrients*. 2019 Aug;11(8):1939.
11. Durairaj A, Ramamurthi R. Prevalence, pattern and predictors of premenstrual syndrome (PMS) and premenstrual dysphoric disorder (PMDD) among college girls. *New Indian J OBGYN*. 2019;5(2):93-8.
12. Bratman GN, Hamilton JP, Daily GC. The impacts of nature experience on human cognitive function and mental health. *Annals of the New York academy of sciences*. 2012 Feb;1249(1):118-36.
13. World Health Organization. Rational use of personal protective equipment for coronavirus disease (COVID-19): interim guidance, 27 February 2020. World Health Organization; 2020.
14. Ahmad M, Rahman FN, Rahman MZ, Ali MZ, Ali M. Knowledge, Attitude and Practices Among Medical Students And Their Family Members Towards The COVID-19 Pandemic: An Online Based Cross-Sectional Study. *KYAMC Journal*. 2021 Feb 11;11(4):166-70.
15. Schoep ME, Nieboer TE, van der Zanden M, Braat DD, Nap AW. The impact of menstrual symptoms on everyday life: a survey among 42,879 women. *American journal of obstetrics and gynecology*. 2019 Jun 1;220(6):569-e1.
16. Alonso C, Coe CL. Disruptions of social relationships accentuate the association between emotional distress and menstrual pain in young women. *Health Psychology*. 2001 Nov;20(6):411.
17. Behera S, Cherian V, Rajoura OP, Bhasin SK. Perceptions and attitudes of postgraduate students towards thesis work in a medical college in Delhi. *J Compr Health* 2019;7:29-33.
18. Sharma N, Pramila M, Krishnamurthy A, Umashankar GK, Ahuja N. Knowledge, attitude, and practices in research among postgraduate students in dental institutions in Bengaluru city, India. *J Indian Assoc Public Health Dent* 2014;12:189.
19. Van Veen JF, Jonker BW, Van Vliet IM, Zitman FG. The effects of female reproductive hormones in generalized social anxiety disorder. *The International Journal of Psychiatry in Medicine*. 2009 Sep;39(3):283-95.
20. Gupta R, Malhotra A, Malhotra P. An observational study on awareness about medical

research among postgraduate students in a tertiary care teaching hospital in North India. *Int J Med Sci Public Health* 2018;7:859-63.

21. Giri PA, Bangal VB, Phalke DB. Knowledge, attitude and practices towards medical research amongst the postgraduate students of Pravara institute of medical sciences university of central India. *J Family Med Prim Care* 2014;3:22-4.
22. Fukushima K, Fukushima N, Sato H, Yokota J, Uchida K. Association between nutritional level, menstrual-related symptoms, and mental health in female medical students. *Plos one*. 2020 Jul 13;15(7):e0235909.