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Psychiatric Admissions and the Menstrual Cycle - Is there a Relationship?

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Abstract

This study was conducted to establish a relationship between acute psychiatric admissions and phases of the menstrual cycle. 134 women admitted to a psychiatric hospital over 3 months were studied. A slight non significant increased rate of admissions was noted in the premenstrual, ovulatory and immediate post-menstrual phases. A distinct decrease in admissions during the menstrual period and during the early luteal phase was also noted. Menstrual cycle phase did not have a significant relationship with the elective or emergency nature of psychiatric admissions.

Key words -

Emergency psychiatric admissions,
Menstrual phase,
Pre-menstrual period

Popular folklore and the scientific literature have maintained that many important behaviours of women are affected by the menstrual cycle [1]. Many researchers have studied the incidence of antisocial behaviours, accidents and psychiatric crisis in relation to the menstruation specifically to the paramenstruum [2], [3], [4], [5], [6].

Frank [2] was the first investigator to document the Pre-menstrual exacerbation of psychiatric symptomatology. An increased incidence of acute psychiatric hospitalization, hospitalization for depression, schizophrenia and suicide attempts, during the Pre-menstrual and menstrual phase of the cycle has been observed [3], [4], [5]. An increased frequency of relapse in manic and schizophrenic patients has also been reported to occur during these phases [6].

Dalton [3] in 1959 reported that 46% of all admissions occurred during the Pre-menstrual and menstrual phase. Glass et al [7] found more non-psychotic women in the Pre-menstrual group and further reported that in the Pre-menstrual phase of the cycle, a nonpsychotic patient was three times more likely to have made a suicide attempt than a psychotic. Abramowitz [8] reported that depressed women showed a higher frequency of admission to a psychiatric facility on two particular paramenstrual days, i.e., the day before the onset of the menstrual flow and the first day of the menstrual flow, but the schizophrenic women did not show the same tendency.

A few critics [9], [10] have tended to dismiss findings of elevated admission frequency for psychiatric crisis during the paramenstruum, claiming that these findings merely indicate that women (and those diagnosing them) are influenced by sociocultural expectations concerning how women 'should' behave or feel at different phases of the menstrual cycle and

this was substantiated by O'Neil [10] who, on comparing the women attending psychiatric clinics with normal controls concluded that the four phases of the menstrual cycle did not show corresponding changes in the average severity of depression, anxiety of psychological distress.

It is evident from the literature review that popular beliefs, the researcher's view point and a number of socio-cultural variables have influenced findings in this area of research. Putative evidence points towards a relationship between menstrual cycle phase and acute psychiatric admissions and it was with an aim of studying this probable relationship that the present study was taken up. It was aimed to discern a relationship, if any, between acute psychiatric admissions and certain 'vulnerable' phases of the menstrual cycle namely the late luteal, ovulatory and Pre-menstrual phases.

Methods

The study was conducted by the research item of a NIMHANS project from the Department of Psychiatry, National Institute of Mental Health & Neuro Sciences, Bangalore .

It included 134 consecutive women admitted during the 3 months period of the study. Each patient was seen either on the day of admission or on the second day. Information regarding the age, marital status, parity, use of oral contraceptives or other hormonal preparations was taken. Details of menstrual history (like regularity and the date of last menstrual period and past history of Pre-menstrual problems) were recorded. Diagnoses as per ICD-9 were obtained from the patient's records. Date of admission, type of admission (elective or emergency) and details of the psychiatric illness (new episode or exacerbation) and medical illness, if any, were also noted. An elective admission was defined as one which was preplanned, made by appointment, usually for diagnostic or research purposes and not because the patient was unmanageable at home or acutely distressed. Emergency admissions were those where the patients were in crisis, were unmanageable at home and needed urgent therapeutic intervention.

A total of 134 women were included in the study and grouped based on the menstrual cycle information and the type of admission. Women with 'irregular periods' (defined as cycle length less than 21 days or more than 35 days) were excluded since their menstrual phase could not be ascertained with certainity.

The cycle phase of each woman was divided into:
(i) Pre-menstrual (5 days prior to onset),
(ii) Menstrual (days of flow)
(iii) immediate postmenstrual (5 days after stopping of flow) and
(iv) Intermenstrual.

Phase of the cycle for each woman was correlated with the date of admission. An attempt was made to find a relationship between the menstrual cycle phase and the following variables:
(i) Emergency admission
(ii) Elective or planned admissions
(iii) Nature of psychiatric illness and
(iv) Recurrence of already existing psychiatric problem vis-a-vis a new episode.

Results

From the total sample of 134 women, 47 were excluded because of a number of reasons [Post menopausal (15), Prepubertal (01) postpartum (10), lactation amenorrhoea (03), LMP not sure (14), irregular periods (04)]. None were excluded because of intake of oral contraceptives or any other hormone treatment.

The women in the study group were in the age range of 16-45 yrs. 43 (49%) were below 25 yrs, 32(31%) between 26-35 yrs and 12(14%) between 36-45 yrs.

The study group had 54 women admitted on an emergency basis and 33 as electives. The two groups were found to be comparable with regard to age and psychiatric diagnosis (Table I). In the acute admission group. 18 women (33%) were in the Pre-menstrual phase, 11 (20%) in the immediate post menstrual phase and 25 (46%) in the intermenstrual phase at the time of admission. In the elective admission group 19 (58%) were admitted intermenstrually, 7 (21%) premenstrually,6 (18%) in the immediate post menstrual phase and only 1 (3%) in the menstrual phase. The two groups were not statistically different from each other in their relationships with menstrual cycle phase.

Table I - Psychiatric diagnosis, admissions and menstrual phase

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(a) Premenstrual period, (b) Menstrual period, (c) Immediate post menstrual period (d) Intermenstrual period

No significant difference in the rate of admission in the different phases of menstruation were noted in the study group. However, a trend towards increased rate of admission in the Pre-menstrual phase was seen which did not reach statistical significance. To elucidate this further, a graph was plotted to relate days of the menstrual period with the number of patients admitted (Figure 1). The graph shows increased number of patients being admitted in the late luteal and the immediate post menstrual phases with very few being admitted during the menstrual phase. In addition a small increase in the rate of admission is seen in the ovulatory phase. This was true both for acute and elective admissions, however there was a reversal of trends in these two vulnerable phases, in that a higher number of emergency admissions were found in the paramenstrum while elective admissions packed higher during the intermenstrual phase. This difference was however again not statistically significant.

Admissions and menstrual phases

Relating the recurrence / exacerbation dimension with the cycle phase it was found that among the 87 women studied 68 (78%) had fresh or a new episode and 17 (19%) had exacerbation of chronic psychosis. The other two could not be categorised. In the new / fresh episode group, 33 (49%) were admitted intermenstrually, 19 (28%) premenstrually and 16 (23%) in the immediate postmenstruum. The figures for the group with exacerbation of a chronic illness were 10 (59%), 5 (29%) and 2 (12%) respectively (Table II) indicating a relatively higher number of fresh episodes presenting in the postmenstruum as compared to exacerbation of already existing psychosis (P-value NS).

Table II - Menstrual phase and reason for emergency admission

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Disussion

Our study was aimed at establishing the relevance of the ptative relationship between the menstrual cycle and psychiatric admissions. A trend towards increased rate of admissions in the pre-menstrual phase was seen which did not reach statistical significance. Majority of the studies from the West have reported higher rate of psychiatric emergencies in the Pre-menstrual [3], [7], [11], paramenstrual [4], [8] and the menstrual phase [5].

The difference in the psychiatric admission rate in the different diagnostic subgroups was also not significant in the present study. Similar lack of significant association between the menstrual phases and psychiatric diagnosis has been reported by Luggin et al [13]. Dalton [3] reported increased admission rates for both depressives and schizophrenics. However, Abramowitz et al showed a higher frequency of admittance on the day before and the first day of menstrual flow for depressed women but reported no such tendency for schizophrenics. An increased frequency of relapse in manic and schizophrenic patients has also been reported to occur in pre and menstrual phase by Ota et al [6]. There was no case of attempted suicide in our sample. Earlier studies have found higher rates of suicide and attempted suicides in the perimenstrual phase [3] and the Pre-menstrual phase. Cases of suicide probably attend a general hospital emergency department rather than a psychiatric hospital like ours.

Very low rates of admission in the menstrual phase was noted in both the elective and acute admission groups (3% and 0% respectively). O'Neil et al [10] have reported that menstruation is considered as expulsion of Bad Blood and that women could feel cleansed and revitalized after the onset of menstruation. This low incidence might relate to cultural views regarding menstruation being an unclean/impure event and thus delaying admission for religious and social reasons.

Theories explaining the increased rate of psychiatric admissions in the Pre-menstrual phase are many. Abramowitz et al [1] reviewing the literature have suggested an explanation. It is known the oestrogen levels are very low in the paramenstrual days. Low levels of oestrogen are known to coincide with high levels of monoamine oxidase which in turn may result in catecholamine depletion. Such depletion may precipitate a depressive episode for predisposed persons. This view is consistent with findings that MAO inhibitors alleviate symptoms of at least certain types of depressed patients and of women experiencing pre-menstrual depression. Two other factors are reported to increase the admission during the perimenstruum. Poor drug compliance due to attendant physical discomfort may precipitate a relapse in psychiatric patients already on treatment. In addition drug levels such as those of antidepressants and specially lithium are known to fluctuate due to water and salt retention and other hormonal fluctuations [13]. This might also account for acute exacerbation of already existing psychosis though it cannot explain the occurrence of a fresh episode in psychiatrically well subjects.

Possible reasons for varying results in our study i.e. absence of significant relationship to the perimenstruum in contrast to the positive associations found in the western literature might be twofold. Firstly, the time of admission might not necessarily coincide with maximum disturbance in behaviour or even with onset of psychiatric illness. In India, because of a number of socio cultural and demographic reasons admissions might be deferred to a later date. Thus negating the acuteness of admission and the premise that the day of admission indicates the maximal severity of abnormal behaviour. Secondly, is the controversial concept of accuracy of self estimation of location in the menstrual cycle of women undergoing a psychiatric crisis [14]. Barker and Abramowitz [14] in the elaborate study have raised severe doubts on the accuracy of self reports of psychiatrically ill women

regarding their menstrual cycle phase and have emphasized that this might reflect a response bias by women who are too upset / confused to know where they are in the menstrual cycle. However when detailed analysis were carried out by the same group of workers with prospective assessment, no gross discrepancies were found on the speculated dates and actual dates of the menstruum. Despite this reassurance from the authors [14], the fact remains that self reports may be unreliable and might account for the variation in results found between different groups of workers regarding psychiatric emergencies and menstrual cycle phase.

In conclusion, it appears that menstrual cycle phase does not have a significant relationship with psychiatric admissions either elective or emergency. However, several interesting trends emerge, with there being peaks in the premenstrual, ovulatory and immediate postmenstrual phases. There is a distinct decrease in admissions during the menstrual period and during the early luteal phase. These findings are in accordance with those of Barker and Abramowitz [14] who undertook a reanalysis of all earlier data in this area and found increased admissions in the pre-menstrual and the ovulatory phases. Our study differs in not finding a menstrual peak and also in finding a higher rate postmenstrually. This can be explained on various factors cited above mainly with regard to socio-cultural issues and admission strategies. It remains to be seen whether timing the onset of psychosis with menstrual cycle phase will elucidate more reliable findings rather than relating it to emergency or elective admissions.

1.Abramowitz E, Baker A H & Fleischer S, Onset of depressive psychiatric crisis and the menstrual cycle
American Journal of Psychiatry Page: 139: 475-478, 1982

2.Frank R T, The hormonal causes of Pre-menstrual tension
Archives of Neurology & Psychiatry Page: 26: 1053-1057, 1931

3.Dalton K, Menstruation and acute psychiatric illness
British Medical Journal Page: 1: 148-149, 1959

4.Kramp J L, Studies on the premenstrual syndrome in relation to psychiatry
Acta Psychiatrica Scandinavica Page: Supplement, 203: 261-267, 1968

5.Jacobs T & Charles E, Correlation of psychiatric symptomatology in an outpatient population
American Journal of Psychiatry Page: 126: 1504-1508, 1976

6.Ota Y, Mukai T & Gotade K, Study on the relationship between psychiatric symptoms and sexual cycle
Folia Psychiat Neurol. Jap Page: 8: 207-217, 1954

7.Glass G, Heninger G, Lansky M & Talan K, Psychiatric emergency related to the menstrual cycle
American Journal of Psychiatry Page: 128: 705-711, 1091

8.Parlee M B, The Pre-menstrual syndrome
Psychological Bulletin Page: 80: 454-465, 1973

9.Sommers B, The effect of menstruation on cognitive and perceptual motor behaviors: a review
Psychosomatic Medicine Page: 35: 515-534, 1973

10.O'Neil M K, Lancee W I, Freeman S J J, Fluctuations in mood and psychological distress during the menstrual cycle
Canadian Journal of Psychiatry Page: 29: 373-378, 1984

11.Janowski D S, Gorney R, Castelnuovo-Tedesco P & Stone C, Premenstrual-menstrual illness in psychiatric hospital admission rate
American Journal of Obstetrics & Gynaecology Page: 103: 189-191, 1969

12.Luggin R, Bernsted L & Peterson B, Acute psychiatric admission related to the menstrual cycle
Acta Psychiatrica Scandinavica Page: 69: 461-465, 1984

13.Chambarlein S, Hahn P M, Casson P & Reid R, Effect of menstrual cycle phase and oral contraceptive use on serum lithium levels after a loading dose of lithium in normal women
American Journal of Psychiatry Page: 147: 907-909, 1990
14.Baker A H & Abramowitz E, How accurate are self-estimates of location in the menstrual cycle? Some evidence from women in psychiatric crises
Pharmacopsychoecologica Page: 1: 43-55, 1988