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Frequency of Depression in Females with Heavy Menstrual Bleeding and Its Impact on Their Quality of Life

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ABSTRACT

Objective: To determine the frequency of depression in females with heavy menstrual bleeding (HMB) and its impact on their quality of life (QoL). **Study Design:** Cross-sectional study. **Place and Duration of Study:** Department of Obstetrics and Gynecology, Jinnah Postgraduate Medical Centre (JPMC), Karachi, over a period of four months from March, 2025 to June, 2025. **Methodology:** Ninety-five women aged 18–45 years with HMB were enrolled through non-probability consecutive sampling. HMB was diagnosed based on clinical criteria including bleeding for more than 7 days, pad change every 2 hours, and presence of clots. Depression was assessed using the Patient Health Questionnaire-9 (PHQ-9), and QOL was evaluated using the PERIOD-QOL scale. Depression was stratified by age, BMI, duration of HMB, employment, and marital status. Statistical analysis was performed using SPSS version 20. **Results:** Depression was found in 47 (49.5%) patients. Among them, 22 (23.2%) had mild, 16 (16.8%) moderate, and 9 (9.5%) severe depression. The mean PHQ-9 score in depressed patients was 10.3 ± 4.2. The mean PERIOD-QOL score was significantly lower in depressed individuals (21.6 ± 6.5) compared to non-depressed participants (34.2 ± 5.8), with $p < 0.001$. Depression was significantly associated with higher BMI ($p = 0.03$) and longer duration of HMB ($p = 0.01$). **Conclusion:** Depression is highly prevalent among females with heavy menstrual bleeding and is significantly associated with poorer quality of life. Routine screening for depression and multidisciplinary management in gynecological care is essential for improving patient outcomes.

INTRODUCTION

Heavy menstrual bleeding (HMB), formerly known as menorrhagia, is among the most prevalent gynaecologic complaints in women of reproductive age and is an important cause of physical, social, and psychological morbidity. It is defined as abnormal menstrual bleeding, with heavy menstrual blood loss (greater than 80 mL per cycle) and/or prolonged menstruation (more than 7 days), resulting in anaemia and impaired quality of life[1]. International studies describe the incidence of HMB to be 20–40% in menstruating women[2], [3]. In Pakistan, the burden seems to be equally high because of late diagnosis and inadequate accessibility to specialized treatment[4].

The discomfort HMB brings with it is more than also psychological. The linkage between HMB and mental disorders, particularly depression, has been increasingly emphasized by research. Women with HMB commonly complain of feeling irritable, lower mood, difficulty concentrating, and social withdrawal[5]. A study on HMB adolescents found that more than 50% had clinically severe depression[6]. Another study in adult women reported a rate of 40% of depression in women with heavy or abnormal uterine bleeding[7]. These results suggest the cham for routine mental health evaluation in those with menstrual irregularities.

In addition, women with HMB have poorer quality of life (QOL). Validated instruments such as the PERIOD-QOL and SF-36 have demonstrated that lower scores in the areas of physical and mental health have been reported in women with HMB[8],[9]. This duality of pain is frequently unrecognized in a busy practice.

Although known to be associated, HMB, depression, and poor QOL, there is scant local literature regarding the correlation between HMB and depression and QOL on Pakistani women. The majority of the available literature is based on Western or East Asian population with only a handful of studies being done in the South Asian region [4,10]. The objective of this study is to estimate the prevalence of "depression" and its association with the quality of life in HMB women visiting a tertiary care center in Karachi, and to fill the regional knowledge void and aid the implementation of integrated management.

METHODOLOGY

This cross-sectional was carried out at Department of Obstetrics and Gynaecology, Jinnah Postgraduate Medical Centre (JPMC) Karachi, from March 2025 to June, 2025. The required sample size was calculated using the nonprobability consecutive sampling method and 95 patients were selected. The sample size was determined using WHO's sample size calculator assuming that anticipated frequency of depression in females with heavy menstrual bleeding would appear as 19.5%, accuracy 95% (CI; p = 0.05) and precision 8%.

Eligibility criteria included women aged 18 to 45 years presenting with heavy menstrual bleeding, defined as menstrual duration of \>7 days, requiring pad change more often than every two hours or passing large clots according to a consultant obstetrician. Exclusion criteria were women who had history of known of gynaecological surgery, uterine malignancy and bleeding disorders and were using anticoagulant and anti-depression medicine, and diagnosis for depression which are already present as seen in their medical records.

Written informed consent was obtained from all eligible participants, and their demographic and clinical data were collected from a standardized questionnaire, including age, gravida, para, height, weight, body mass index (BMI), the time of the heavy menstrual bleeding (HMB), occupation (student, unemployment and employment) and marital status. Depression was evaluated with PHQ-9 (score ≥5 were defined as reported depression). According to a PHQ-9 score depression severity was graded as mild (5–9), moderate (10–14) and severe (≥15). Quality of life was measured using the PERIOD-QOL questionnaire, a validated 10 item scale with maximum score of 50, with higher scores indicative of better quality of life.

All patients diagnosed with depression were referred to the psychiatrist for further assessment and the suitable course of treatment. Patients also had appropriate treatment for HMB prescribed by the consultant obstetrician. Anonymity and confidentiality were strictly preserved throughout the whole study. Statistical Package for the Social Sciences version 20 was used to analyze data. Continuous variables including age, BMI, and scores of PHQ-9 and PERIOD-QOL were reported as mean ± standard deviation. Categorical variables, such as severity of depression, employment, and marital status, were described as frequency with percentage. Effect modification was evaluated by testing using post stratification chi-square or Fisher's exact for statistical significance at 0.05 p-value.

RESULTS

We analyzed 95 women between 18 and 45 years with heavy menstrual bleeding. The average age of study participants was 31.6 ± 6.4 years, average body mass index (BMI) was 27.8 ± 3.9 kg/m^2, and average duration of HMB was 11.2 ± 5.6 months. Many of these women were multiparous. Regarding socio-demographic characteristics, 57.9% of respondents were married and 42.1% single, 38.9% employed, 31.6% unemployed and 29.5% were students (Table 1).

Of the entire sample, 47 patients showed depression, corresponding to an incidence of 49.5%. Within them, 22 (23.2%) was found to have mild depression, 16 (16.8%) moderate and 9 (9.5%) severe depression. The rest, 48 (50.5%), reported no depressive symptoms (Table 2). This distribution is also shown graphically in Fig. 1.

On the depression scale (PHQ-9), those with depression had a mean score of 10.3 (± 4.2), which was 2.8 (± 1.6) higher (table 2). Similarly, QOL, according to the PERIOD-QOL scale, was significantly worse in patients with depression (mean score: 21.6 ± 6.5) compared to those without depression (mean score: 34.2 ± 5.8), with p 0.05).

Similar evidence exists for an association between HMB and depression with the quality of life reduced significantly. The findings highlight the significance of regular psychological evaluation and early intervention in women experiencing HMB.

Table 1

Baseline Characteristics of Study Participants

Variable	Mean ± SD
Age (years)	31.6 ± 6.4
BMI (kg/m^2)	27.8 ± 3.9
Duration of HMB (months)	11.2 ± 5.6

Table 2

Severity of Depression among Participants

Depression Severity	Frequency (n=95)	Percentage
No Depression	48	50.5%
Mild	22	23.2%
Moderate	16	16.8%
Severe	9	9.5%

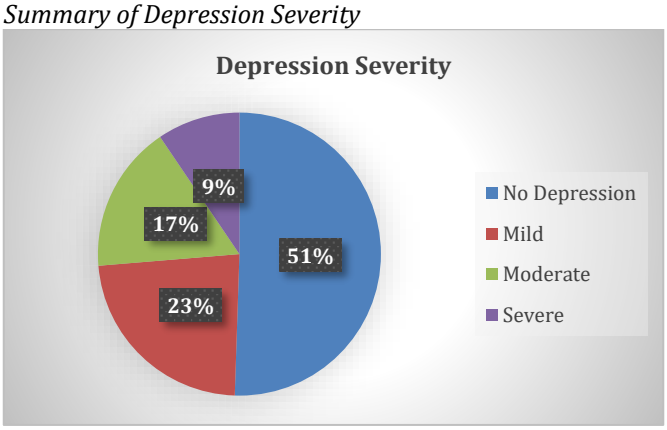
Table 3

Comparison of PHQ-9 and PERIOD-QOL Scores

Group	Mean PHQ-9 Score	Mean PERIOD-QOL Score
With Depression	10.3 ± 4.2	21.6 ± 6.5
Without Depression	2.8 ± 1.6	34.2 ± 5.8

Figure 1

Summary of Depression Severity



DISCUSSION

The purpose of this study was to determine the prevalence of depression in women with heavy menstrual bleeding (HMB) and its effect on QOL. In our series, 49.5% of women with HMB had depression of variable intensity from mild to severe. This rate is similar to another published study, Weyand et al, who reported 50.9% of teenagers with HMB screened positive for clinically significant depression based on the PHQ-9[1]. Similarly,

McGrath et al. documented a depression incidence of 40.1% in women with AUB[2].

We further noted reduction in QOL in women with HMB who were also depressed with significantly lower PERIOD-QOL scores compared to non-depressed participants. This is consistent with the finding recently found by Lancastle et al., in which the PERIOD-QOL was found to have good construct validity and that in women with HMB, quality of life was significantly affected[4]. A school-based study in Malaysia also reported strong negative effects of HMB on physical health, emotional state, and academic performance among adolescent females[5].

In our study, we also found that depression had a significant correlation with greater BMI and longer duration of HMB. This is consistent with the results of Mariappen et al. who highlighted a significant association between obesity, emotional distress, and menstrual problems among adolescents[3]. Although our findings and sociodemographic factors from our local society have shown no strong statistical effect of depression with marital status and employment status, we cannot rule out the attenuation or mediation of sociocultural variables.

It should be noted that some previous work (e.g., Lee et al. in Korean women, where depression was less frequently reported (19.5%) amongst women with AUB[6]. These discrepancies could be due to differences in population, culture, and methodology. Our research contributes to the scarce South Asian literature, with this rare data on Pakistani women, emphasizing routine mental health screening in a gynaecology practice.

This study was, however, one of the few regional studies to attempt to quantify the emotional and quality-of-life impact of HMB which used validated scales[11] despite being single-centre and based on self-reported questionnaires. These results highlight the need for a multifaceted strategy that combines mental health screening and counselling as part of regular gynaecologic care. Reasonable treatment of depression after appropriate psychiatric evaluation and referral for women with HMB[12] can improve not only the psychological wellbeing but also medication compliance and general well-being.

CONCLUSION

This study highlights a significant association between heavy menstrual bleeding (HMB) and depression among women of reproductive age, with nearly half of the participants experiencing depressive symptoms. Additionally, those with depression reported substantially lower quality of life scores, emphasizing the psychological burden of HMB. The findings underscore the importance of integrating routine mental health screening into gynecological assessments. Early identification and multidisciplinary management—including psychiatric referral and appropriate treatment of HMB—can greatly improve both emotional well-being and overall health outcomes in affected women. Further large-scale studies are recommended to validate these findings across broader populations.

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