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Expert Opinion Article

Determining The Risk Factors of Post-Menopausal Bleeding: A Cross-Sectional Study

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Abstract

Introduction: Post-menopausal bleeding (PMB) is a significant clinical symptom that warrants thorough evaluation due to its potential association with malignancies. This study aims to assess the socio-demographic, reproductive, and medical risk factors linked to PMB among post-menopausal women attending a tertiary care hospital in Chennai, India.

Methodology: A cross-sectional study was conducted among 50 post-menopausal women aged over 50 years. Data were collected using structured interviews and medical records. Parameters such as age, BMI, education, employment, parity, menstrual hygiene, chronic conditions, reproductive infections, and Pap smear screening history were analyzed.

Results: The majority of participants (50%) were aged 50–59 years, with 64% being literate. A significant proportion (46%) were overweight or obese, and 60% had Type 2 Diabetes Mellitus. High parity (≥4 full-term pregnancies) was observed in 80% of participants. A concerning 60% reported frequent reproductive infections, and only 60% had undergone Pap smear screening. PMB occurrence was highest within the first-year post-menopause, with 40% reporting a family history of the condition.

Conclusion: This study highlights obesity, metabolic disorders, high parity, and inadequate screening as key risk factors for PMB. The findings underscore the need for targeted awareness programs, improved healthcare accessibility, and enhanced screening efforts to facilitate early detection and management. Future research should explore longitudinal data to better understand PMB's etiology and prevention strategies.

Keywords: Post-menopausal bleeding, risk factors, screening, obesity, metabolic disorders.

Introduction

Postmenopausal bleeding (PMB) is characterized as "*any bleeding from the genital tract occurring after one year of amenorrhea in a woman not undergoing Hormone Replacement Therapy (HRT)*." [1] Women with postmenopausal bleeding (PMB) have a 10% probability of significant pathology and are susceptible to genital malignancies, including cervical, endometrial, vaginal, ovarian, and vulvar cancers. [2, 3, 4, 5] The possibility of an underlying cancer renders PMB a perilous sickness that requires an exhaustive clinical evaluation, despite its common association with benign ailments. Studies have shown that early detection of endometrial and cervical cancer reduces mortality and enhances the cure rate. [6] Regrettably, there are yet no dependable screening techniques for the early identification of endometrial cancer, like to those available for cervical cancer. [7] PMB is the primary discernible symptom in almost all instances of endometrial cancer, leading women to seek medical evaluation and facilitate early diagnosis of the illness. [8] Consequently, recognizing PMB in a community context provides an opportunity to detect these women prior to the advancement of their malignancies.

India accounts for one-fourth of the global incidence of cervical cancer, the fourth most prevalent malignancy worldwide. The five-year survival rate for cervical cancer is just 50%, and more than 70% of women diagnosed with the illness present at an advanced stage upon hospital admission. Research conducted across various Indian states indicated a low adoption of cervical cancer screening services, despite the presence of effective screening tests and governmental initiatives aimed at promoting opportunistic cervical cancer screening through state-level programs and the National Programme for the Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke. [10, 11]

Consequently, examining the factors contributing to its limited acceptance might facilitate improvements in the program and increase the survival rate for cervical cancer patients. Limited hospital-based research has been undertaken in India to identify the risk factors associated with PMB. Therefore, the current research is designed with the purpose of identifying the risk factors related with PMB bleeding among women attending a tertiary care center.

Methodology

A hospital based cross-sectional study was conducted among 50 post-menopausal women aged >50 years attending a tertiary care hospital in Chennai, India for a period of three months. All postmenopausal women >50 years of age with complaint of post-menopausal bleeding were included in this study. The exclusion criteria were known case of cervical, ovarian malignancy, hormone replacement therapy, coagulation or haematogical abnormalities and participants on anti-coagulant/ immunosuppressants or anti-cancerous medications. The sampling technique adopted was consecutive sampling. The research was commenced after approval from the institutional ethics committee permission. Participants were told about the purpose of the study before to the interview, and their signed informed consent was acquired.

Sample size was calculated based on the prevalence of 1.8% for post-menopausal bleeding according to the study conducted by Sindhuri R et al [12], at a confidence interval of 95% and absolute precision of 4%, the required sample size works out to be 42, which was rounded off to 50.

Menopause is defined by the World Health Organization as the permanent cessation of menstruation resulting from the loss of ovarian follicular activity. Postmenopausal bleeding (PMB) is defined as any bleeding that occurs from the genital tract after one year of amenorrhea in a woman who is not receiving Hormone Replacement Therapy. Abnormal uterine bleeding (AUB) is defined as the bleeding pattern that differs in frequency, duration and amount from a pattern observed during a normal menstrual cycle or after menopause.

Information regarding socio-demographic profile (age, education, occupation, and BMI), personal details (parity, duration of menopause, menopausal age, comorbidity, contraceptive usage etc) and details regarding post-menopausal bleeding (family history, frequency of bleeding, previous episodes of bleeding, place of treatment and screening).

Statistical Analysis: The data collected was entered into Microsoft Excel 2019 spreadsheet, followed by analysis using SPSS version 26 (Statistical package for social science) Windows, Version 26.0. (IBM Corp. Released 2019. IBM SPSS Statistics for Armonk, NY, USA). All variables were represented in frequency and percentages. Charts and graphs were used when necessary

Results

The study analysed 50 post-menopausal women aged over 50 years who attended a tertiary care hospital in Chennai, India. The findings are summarized below.

Socio-Demographic Factors

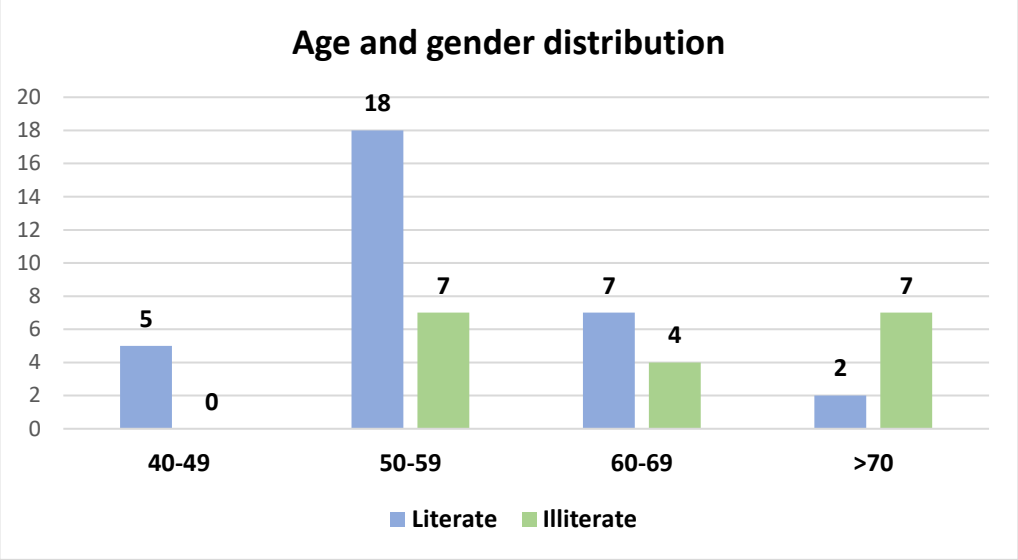
The majority of participants (50%) were in the 50–59 age group, followed by 60–69 years (22%), and over 70 years (18%). Educational status varied, with 32 participants (64%) being literate and 18 (36%) illiterates. Most participants (72%) were from urban areas, while 28% resided in rural locations. Regarding employment, 42 (84%) were unemployed, and only 8 (16%) were employed.

BMI distribution showed that 15 participants (30%) were underweight (<18.5), 12 (24%) had normal BMI (18.5–24.9), 15 (30%) were overweight (25–30), and 8 (16%) were classified as obese (>30).

Table 1: Socio-demographic factors

Variables		Frequency	Percentage
Age	40-49	5	10
	50-59	25	50
	60-69	11	22
	>70	9	18
Education	Literate	32	64
	Illiterate	18	36
Locality	Rural	14	72
	Urban	36	28
Occupation	Employed	8	16
	Unemployed	42	84
BMI	<18.5	15	30
	18.5-24.9	12	24
	25-30	15	30
	>30	8	16

Figure 1: Age and gender distribution



Personal Details

The duration of menopause varied, with 30 participants (60%) experiencing menopause for one year, while 10 each (20%) reported durations of two, three, or four years. A higher proportion (70%) had menopause onset before 50 years of age.

Regarding chronic comorbidities, 30 (60%) had Type 2 Diabetes Mellitus (T2DM), 20 (40%) had hypertension, and 2 (4%) reported other conditions.

Parity analysis indicated that 40% had five full-term pregnancies (P5L5), 40% had four (P4L4), and 20% had three (P3L3). Menstrual hygiene grading showed that 80% had good hygiene, whereas 20% had poor hygiene.

Reproductive tract infections were prevalent, with 30 participants (60%) experiencing more than ten episodes, 12 (24%) having 1–10 episodes, and 8 (16%) reporting no episodes.

Table 2: Personal details

Variables		Frequency	Percentage
Duration of menopause (in years)	1	20	40
	2	10	20
	3	10	20
	4	10	20
Menopausal age	<50	35	80
	>50	15	20
Chronic comorbidity	T2DM	30	60
	Hypertension	20	40
Parity	P5L5	20	40
	P4L4	20	40
	P3L3	10	20
Menstrual hygiene grading	Good	40	80
	Poor	10	20
Reproductive tract infection	No episodes	8	16
	1-10 episodes	12	24
	>10 episodes	30	60

Post-Menopausal Bleeding

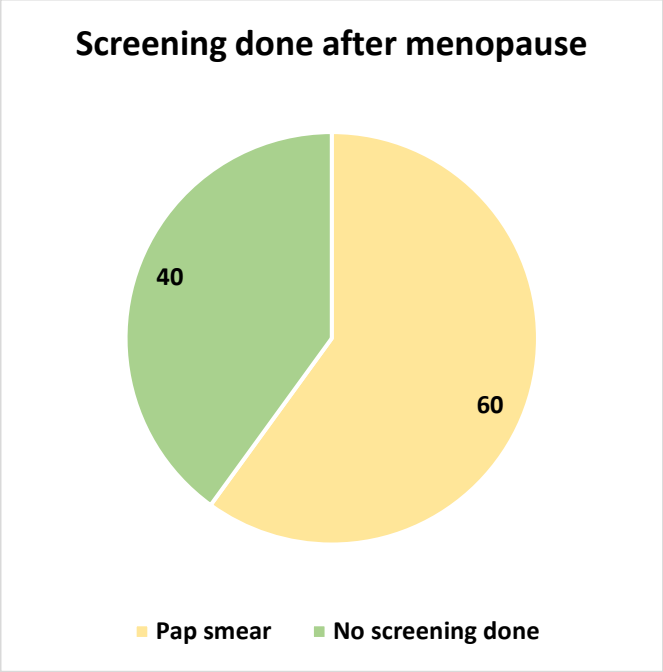
A family history of PMB was present in 20 (40%) participants, while 30 (60%) had no such history. Bleeding frequency varied, with 10 participants (20%) experiencing weekly episodes, 20 (40%) reporting monthly episodes, and 30 (60%) experiencing bleeding every three months. The last episode of PMB occurred within the last month for 13 participants (26%), between 1–6 months for 25 (50%), between 6–12 months for 10 (20%), and over a year ago for 2 (4%).

Pap smear screening after menopause was performed in 30 (60%) participants, whereas 20 (40%) had not undergone any screening.

Table 3: Post-menopausal bleeding

Variables		Frequency	Percentage
Family history	Present	20	40
	Absent	30	60
Frequency of bleeding	Weekly	10	20
	Monthly	20	40
	3 monthly	30	60
Last episode of PMB	Last month	13	26
	1-6 months	25	50
	6-12 months	10	20
	>1 year	2	4
Screening done after menopause	Pap smear	30	60
	No screening done	20	40

Figure 2: Screening done after menopause



Discussion

The findings of this study highlight important risk factors associated with PMB and provide insights into potential preventive measures.

Demographic and Lifestyle Factors

Age, BMI, and education level appear to influence PMB risk. A substantial proportion of participants (50%) belonged to the 50–59 age group, consistent with previous studies showing a higher prevalence of PMB in early postmenopausal years [12]. Obesity was a notable risk factor, with 46% of participants classified as overweight or obese, reinforcing previous research linking obesity to endometrial pathology [13].

Education level and employment status also played roles, as a significant number of illiterate and unemployed women reported PMB, which may indicate lower awareness and healthcare access [14].

Comorbidities and Reproductive Health

T2DM (60%) and hypertension (40%) were prevalent among participants, aligning with existing research indicating that metabolic disorders contribute to endometrial abnormalities [15]. Furthermore, 60% of participants had more than ten episodes of reproductive tract infections, suggesting that recurrent infections might increase susceptibility to PMB [16].

Menstrual hygiene was generally good (80% of participants), but the presence of infections in a significant proportion highlights the need for improved awareness regarding genital health. Additionally, parity rates indicated that high parity (four or more full-term pregnancies) might be associated with PMB, as 80% of participants fell within this category [17].

Screening and Diagnosis

Despite the known benefits of early screening, only 60% of participants had undergone Pap smear

testing, underscoring gaps in cervical cancer screening uptake. This aligns with prior research suggesting low adoption rates in India despite government initiatives [18]. The study emphasizes the need for increased awareness and accessibility of screening programs.

Implications for Clinical Practice

Given that PMB is a warning sign of potential malignancies, increased efforts should be made to educate women on the importance of early screening. Health policies should focus on improving awareness among illiterate and unemployed populations, while targeted interventions for those with metabolic disorders may reduce PMB risk.

Conclusion

This study provides valuable insights into the risk factors associated with post-menopausal bleeding among women in a tertiary care setting in India. Key findings highlight the role of obesity, metabolic disorders, high parity, and inadequate screening as contributing factors. The study underscores the necessity of enhanced awareness programs, improved access to screening services, and targeted interventions to address metabolic risk factors. Future research with larger sample sizes and longitudinal studies can provide further clarity on PMB's underlying causes and effective prevention strategies.

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