

# Effect of Job Rotation on Urogenital Symptoms in Working Women of Perimenopausal Age

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## ABSTRACT

**Objective:** To analyze the impact of job rotation on urogenital symptoms experienced by working women of perimenopausal age.

**Methodology:** A cross-sectional study was conducted from June to August 2023 in Department of Gynaecology & Obstetrics at Pakistan Institute of Medical Sciences, Islamabad. Women aged between 40 - 55 years of perimenopausal range who employed in roles involving either rotational (shift work) or fixed (daytime) duties were included in the study after informed consent. All data regarding menopausal age, as well as potential general and urogenital factors relating to urine, sexual, and genital problems were recorded on the proforma. Descriptive and inferential statistics were used in SPSS version 22.0 to analyze the baseline and symptom data.

**Results:** A total of 322 women were included with mean age of 48.5, ranging from 42-51 years. Menstrual cycle disruption was experienced by 34.5% of women, while (24%) had delayed cycles. Other prevalent symptoms were dyspareunia at 11.0%, urinary problems at 8.0%, and loss of libido at 5.0%. A small percentage of responders also reported experiencing symptoms such as irritability, palpitations, drowsiness, and forgetfulness.

**Conclusion:** A significant number of working women have menstrual irregularities followed by a delayed cycle, urinary issues, and a decline in libido.

**Keywords:** Perimenopause, Urogenital, Women's health.

### Authors' Contribution:

Conception of the work idea, data collection, analysis and interpretation, drafting the manuscript, reviewing and final approval, accountable, Data collection, analysis and interpretation, writing the manuscript, reviewing and final approval, accountable

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## Introduction

Perimenopause is a pivotal time in a woman's life since it signals the beginning of the end of her reproductive years. As the female body progresses progressively from its reproductive prime to a subsequent phase, it goes through a complex and nuanced stage characterized by dynamic hormonal alterations and biological modifications.<sup>1</sup> The perimenopausal era, which includes the physical and emotional transitions

associated with it, is a unique part of a woman's reproductive life cycle.<sup>2</sup>

Menopause is crucial because it affects more than just the end of periods; it can also have a profound impact on a woman's mental and physical well-being. Researchers have found an association between the age of menopause and the onset of health problems like cardiovascular disease and bone loss in the elderly.<sup>3</sup> The complex interaction between hormonal changes and health outcomes is highlighted by the



possibility that an earlier start of menopause is linked to an increased risk of various illnesses. The severity and duration of vasomotor, psychological, and urogenital symptoms of perimenopause can be affected by the timing of this biological event. A deeper understanding of women's health can be gained from accounting for the impact of age at natural menopause, and this recognition highlights the need for healthcare initiatives that are individually tailored to the unique experiences of women going through this transition.<sup>4</sup>

The fullness of perimenopausal experiences is impacted by urogenital disorders, which include alterations in urinary function and pelvic health. Hormonal shifts have a complex relationship with intimate health, and as a result, sexual difficulties, including low libido and sexual discomfort, become more prevalent. The transition towards reproductive cessation might be observed through menstrual irregularities, such as shifts in flow patterns and cycle length. Comprehensive healthcare plans that address the unique issues faced by women during this transitional life stage can only be implemented if the wide range of perimenopausal symptoms is considered.<sup>5</sup>

The perimenopausal era is a pivotal time in a woman's life because it marks the beginning of the end of her reproductive years. Hormonal shifts significantly shape a woman's physical and emotional development, adding complexity to this journey. An important landmark in this timeline is a woman's age at natural menopause, which affects her risk of developing cardiovascular disease and osteoporosis.<sup>6</sup> During the perimenopausal environment, a wide variety of symptoms occurs, comprising vasomotor experiences like hot flashes, psychological shifts such as mood swings, changes in skin health, urogenital transformations, sexual issues, and menstrual irregularities. This research aims to learn more about the urogenital and other symptoms experienced by women during this transitional period, and how work responsibilities may play a role.<sup>7</sup> The study's overarching goal is to improve our understanding of the perimenopausal experience for working women by shedding light on how the workplace and menopause interact. The purpose of this study was to analyze the impact of job rotation on urogenital and other symptoms experienced by working women in the perimenopausal years.<sup>8</sup>

## Methodology

A cross-sectional study was conducted from June to August 2023 at the Department of Obstetrics and Gynaecology, Pakistan Institute of Medical Sciences, Islamabad. A sample size of 322 was calculated with a 95% confidence level, an alpha of 5%, and an expected proportion of 30% of participants experiencing monthly irregularities.<sup>9</sup>

### Inclusion Criteria:

1. Women aged 40 to 55 years, falling within the perimenopausal age range.
2. Currently employed in roles involving either rotational (shift work) or fixed (daytime) duties.
3. Able to provide informed consent and complete the self-administered questionnaire independently.
4. Experiencing perimenopausal symptoms, as identified through initial screening questions.

### Exclusion Criteria:

1. Women who have undergone hysterectomy or oophorectomy, as these procedures can impact urogenital symptoms independently of perimenopause.
2. Participants with known urogenital or pelvic disorders unrelated to perimenopause, such as urinary tract infections or pelvic organ prolapse.
3. Individuals with chronic conditions, such as diabetes or neurological disorders, that may affect urogenital health.
4. Participants were recruited from various workplaces that included both rotational (shift-based) and fixed-schedule roles after taking informed consent. Initial screening was conducted to ensure participants met all inclusion and exclusion criteria. Consent forms and study information sheets were provided to all eligible participants to explain the study's protocols. Data was collected through a structured, self-administered questionnaire distributed to participants. Urogenital symptoms were assessed using a validated symptom checklist, covering issues such as urinary urgency, frequency, incontinence, vaginal dryness, and other discomforts. Participants were asked to rate the frequency and severity of each symptom,

providing a quantitative measure. Additional questions were included to capture potential confounding factors such as sleep quality and perceived stress levels, which may be influenced by work schedule and contribute to urogenital symptoms.

- Both descriptive and inferential statistics were used in the SPSS 22.0 data analysis. The study population's baseline characteristics were summarized using descriptive statistics to provide a holistic perspective of important demographic factors. However, inferential statistics were employed to investigate possible causes and explanations for observed phenomena, with special attention paid to the role of symptomatic factors in the development of urogenital symptoms and other important parameters.

## Results

A total of 322 women participated in the study with a mean age of 48.5±3.8 years (range 42 - 51 years), of these 196 had fixed duties, while 126 were doing rotational duties. Out of 322, 262 (81.3%) women suffered with urogenital symptoms. (Table 1)

Prevalence of urogenital symptoms with work rotation and symptom severity comparison was shown in table 2 and 3 respectively.

Symptoms	Number	%
Menstrual Disturbance	111	34.5
Delayed Cycles	79	24.5
Dyspareunia	34	10.5
Urinary Complaints	27	8.38
Loss of libido	17	5.27

Symptom	Rotational Duty Group (%)	Fixed Schedule Group (%)
Any Urogenital Symptom	68	45
Urinary Urgency	42	28
Incontinence	36	23

Symptoms	Mean Severity Score (Rotational Duty)	Mean Severity Score (Fixed Schedule)	p-value
Overall Urogenital Symptoms	3.2	2.1	< 0.05
Urinary Frequency	2.8	1.9	< 0.05
Vaginal Dryness	2.6	1.7	< 0.05

## Discussion

Urogenital symptoms are common, affecting between 40% and 90% of menopausal women. Findings of this study also showed the similar evidence that majority (81.3%) of the working women suffered with urogenital symptoms during perimenopausal age. Similarly, the mean age of the women was 48.5±3.8 years, which is consistent with the typical age range for perimenopause. A comparable mean age was found in the cohort of perimenopausal women studied by Bustami et al,<sup>10</sup> illustrating the stability in the age profile of women going through this transition. However, the age distributions won't always look the same from one population to the next or even from one region to another.

This study spans a pivotal perimenopausal age range, from 42 to 51 years old. This agrees with the results from a study whose sample had a similar age distribution.<sup>11</sup> Such concordance in age ranges lends credibility to our findings and may indicate that perimenopausal women's perspectives on rotating shifts are universal.

Recently, Riach K et al highlighted the significance of capturing a broad age range to understand the variety of perimenopausal experiences, and this is supported by the diverse age representation within our sample.<sup>12</sup> Our findings can be applied to a wide range of people because we included people of all ages in our analysis of how shift rotations affect urogenital and other symptoms.

This rate of menstrual disturbance is consistent with findings from another study that found a similar proportion of perimenopausal women to be affected by irregular periods.<sup>13</sup> This uniformity bolsters the generalizability of our findings and provides further evidence that the effect of rotating shifts on menstrual abnormalities is a

common occurrence among women approaching menopause.

Similar to the findings of Santoro et al, our results show that a sizeable proportion of women go through the perimenopausal transition with delayed menstrual cycles.<sup>14</sup> This common experience lends credence to the theory that delayed cycles are a symptom frequently experienced by perimenopausal women, especially those with demanding careers.

Our study's identification of dyspareunia fits with the findings of a study that emphasized the discomfort during intercourse is a prominent concern among perimenopausal women.<sup>15</sup> This common finding shows the need for interventions targeting women's urogenital health as part of broader efforts to improve the lives of women in the perimenopausal transition.

Consistent with the findings of another study, we found that perimenopausal women frequently experienced urinary problems.<sup>16</sup> This finding implies that perimenopausal women have persistent concerns about disturbances in their urinary health, regardless of the study.

The proportion reporting a decline in libido is consistent with those of research which highlights the importance of addressing difficulties in sexual desire throughout the perimenopausal period.<sup>17</sup> This common understanding lends credence to the argument that sexual health is more difficult to sustain for women with rotating shifts.

The observed variety in urogenital symptoms within this study group is comparable with the evidence which underlines the heterogeneity of perimenopausal experiences.<sup>18</sup> This variety highlights the necessity for individualised healthcare interventions that take into account the myriad pressures women experience throughout perimenopause and the workplace. Overall, these comparisons with more recent studies reinforce the reliability of our findings and provide richness to our comprehension of the urogenital health

picture in perimenopausal women who perform rotating shifts.

Our findings highlight an important feature of perimenopause for women in shift work, with the recognition of vague symptoms. Despite the lack of data on the frequency of these signs, including them is critical to understanding the complexity of the health issues that working women of this age face. This strategy aligns with the findings of a research, which stress the need to consider a wide range of symptoms to fully capture the impact of the perimenopausal transition.<sup>19</sup>

The perimenopausal journey is highly individualized and that women's health experiences are influenced by a wide range of circumstances, including their place of employment. Our results are consistent with those of Ackerman et al, which argues that perimenopausal symptoms may include more than just the well-documented urogenital issues.<sup>19</sup> This consensus supports the notion that perimenopausal health results from a nuanced interaction of physiological, psychological, and social components.

Our study's findings provide important new information about the incidence of urogenital complaints among women in the perimenopausal years who work rotating shifts. Our research adds to the existing body of knowledge on perimenopausal health by recognizing the importance of considering the whole range of symptoms experienced by women during this time of transition. As a result of these discoveries, researchers and healthcare providers will be better able to tailor their efforts to the unique needs of perimenopausal women with shift work.

## Conclusion

The menstrual disturbance was the most reported urogenital symptom, affecting 34.5% of people, with an enormous minority suffering delayed menstrual cycles (24.6%). Dyspareunia (11.0%), urinary problems (8.0%), and libido loss (5.0%)

were also noteworthy symptoms. Recognizing vague symptoms in this study further demonstrates the nuanced and unique character of perimenopause for women in shift work. Incorporating these unclassified symptoms into the analysis helps to provide a more complete picture of the health issues working women face at this pivotal time of change.

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