



The impact of premenstrual syndrome, premenstrual dysphoric disorder, and coping with premenstrual symptoms on work-life

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■ MAIN POINTS

- Women with negative income have higher prevalence of PMS.
- Women who take time off from work due to PMS can better adjust their energy levels.
- The worse the working conditions, the more severe the premenstrual symptoms.
- Healthcare providers should screen all women for PMS.
- Health policy should provide group education on PMS and PMDD for hospitals and workplaces.

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■ ABSTRACT

Aim: This study investigated the impact of premenstrual syndrome (PMS), premenstrual dysphoric disorder (PMDD), and coping strategies for premenstrual symptoms on work life.

Materials and Methods: This study had a cross-sectional design. The sample consisted of 466 women with premenstrual symptoms. Data were collected online using the Premenstrual Symptoms Screening Tool and the Premenstrual Coping Measure.

Results: The prevalences of PMS and PMDD were 19.5% and 31.1%, respectively. Participants coped moderately well with premenstrual symptoms. Participants with higher incomes had significantly lower rates of PMS and PMDD than other participants. Employed women who did not take time off from work to cope with premenstrual symptoms, and who wanted the legal right to do so, were more likely to have severe premenstrual symptoms, PMS, and PMDD. Women experiencing PMDD who were unable to cope with premenstrual symptoms because they were unable to “communicate” and “adjust energy” experienced negative impacts on their work efficiency, productivity, and relationships with coworkers. A negative correlation was observed between working time per day and the “adjusting energy” subscale scores.

Conclusion: Women should be screened for premenstrual symptoms that affect work life. Policymakers should develop legislation to address premenstrual symptoms.

Keywords: Coping, Premenstrual syndrome, Premenstrual dysphoric disorder, Work life, Women's health

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■ INTRODUCTION

Most non-pregnant women of reproductive age menstruate every month [1]. However, most women experience emotional and physical symptoms during the luteal phase of the menstrual cycle (days 14-28) that negatively affect their quality of life. These symptoms include food cravings, bloating, weight gain, breast tenderness, gastrointestinal symptoms, skin problems, headache, fatigue, insomnia, changes in sexual desire, irritability, angry outbursts, crying spells, anxiety, and poor concentration [2]. A woman has premenstrual syndrome (PMS) if she has symptoms that 1- happen five days before her period, 2- occur for at least three menstrual cycles in a row, 3- end within four days after her period starts, and 4- keep her from enjoying or doing some of her normal activities [3]. In addition to these criteria, 5- if she has at least one of

five or more cognitive-affective symptoms associated with distress, and 6- if premenstrual symptoms negatively affect social or work life, this is defined as premenstrual dysphoric disorder (PMDD) by the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5) [4].

Nine out of ten women of reproductive age experience premenstrual symptoms. The prevalence of PMS is 20-40%, while that of PMDD is 2-8% [5]. One in ten women in France has PMS (12%), while almost all women in Iran have it (98%) [6]. The prevalence of PMS in Turkey is 52.2% [7].

We, as healthcare professionals, need to educate women about coping strategies for PMS because they experience premenstrual symptoms for a significant part of their lives. We first need to raise their awareness of PMS to help them cope with it. Healthcare professionals teach women how to engage in

PMS-specific self-screening and self-care practices (lifestyle changes, such as regular exercise, adequate and quality sleep, dietary modification, coping with stress, etc.) and refer them to non-pharmacological (cognitive behavioral therapy, complementary and alternative therapies) and pharmacological treatments [3, 8-10]. However, most women do not seek assistance in coping with PMS because they believe premenstrual symptoms are typical.

Most women in their late twenties to their mid-forties actively participate in working life. However, that is when PMS is most common [9-11]. It is known that women who work under high pressure and competition are more likely to experience PMS [12,13]. Women with PMS are more likely to experience reduced productivity, poor performance, and increased absenteeism. Reduced productivity during the premenstrual period is the most apparent labor loss [12,14].

It is essential to investigate the impact of PMS on work-life for two main reasons. First, the prevalence of PMS among women is relatively high. Second, more and more women are actively participating in the labor force [15]. Although there is a large body of research on the relationship between PMS and quality of life, researchers have not investigated the impact of coping with PMS on work life. Therefore, this study investigated the impact of PMS, PMDD, and coping with premenstrual symptoms on work-life.

Research questions

- Q1.** How do PMS and PMDD affect women's work lives?
- Q2.** How does coping with premenstrual symptoms affect women's work life?

Variables of research

Dependent variables: Severity of premenstrual symptoms (PMS/PMDD) and coping with premenstrual symptoms.

Independent variables: Demographic characteristics (e.g., age, education level, economic status, income) and work-related characteristics (e.g., employed (working with income), working sector, taking time off work due to PMS, and the impact of PMS on work efficiency or productivity and relationships with coworkers).

MATERIALS AND METHODS

The study was approved by the Karamanoglu Mehmetbey University Non-Interventional Clinical Research Ethics Committee (Decision No: 02-2022/12, Date: 30.03.2022). The study was conducted in accordance with the ethical principles set forth in the World Medical Association's Declaration of Helsinki. Participation was voluntary. Written informed consent was obtained from those who agreed to participate.

Research design and sampling

This cross-sectional study was conducted in Turkey from April 1 to July 30, 2022. The study used the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist [16]. The sample size was calculated using the formula "the sample size from an unknown population" [$n = t^2 \cdot p \cdot q / d^2$] [17], based on the prevalence of PMS [52%] reported by Erbil and Yücesoy [7]. The results indicate that a sample of 352 would be large enough to detect significant differences. The final sample consisted of 466 women. Participants were recruited using the snowball sampling method. However, data collection continued beyond this number to compensate for potentially incomplete responses and enhance the statistical power of subgroup analyses. Consequently, the final sample consisted of 466 women.

Criteria for inclusion and exclusion

The eligibility criteria were as follows: 1. Being between 18 and 49 years of age (in the reproductive period), 2. Having premenstrual symptoms (marking at least one of the first 14 items of the Premenstrual Symptoms Screening Tool), 3. Having regular menstrual periods every 21 to 35 days [1], 4. Having no pregnancy or lactation in the past 12 months, 5. Not being on hormonal contraceptives, 6 Not undergoing medical treatment for chronic disease, 7. Not having mental health problems (anxiety disorder, depression, severe psychosocial problems, etc.), and 8. Volunteering.

In the society where the research was conducted, a worker is defined as "a real person who works on the basis of an employment contract," and a civil servant is defined as "a person who is assigned to perform primary and permanent public services carried out by the state and other public legal entities in accordance with the principles of general administration" [18,19].

Procedure

Participants meeting the inclusion criteria were selected through snowball sampling because of its convenience, targeted reach, and purposive nature. We reached women across Turkey via social media platforms (WhatsApp, Twitter, Instagram, Facebook, Pinterest, and Snapchat). Data were collected online using "Google Forms" from women who met all the inclusion criteria for the study. The inclusion and exclusion criteria were explained in the voluntary consent form, which was included at the beginning of the data collection forms. Women who did not meet the criteria were instructed not to complete the forms. Women who did not meet the criteria were warned not to complete the forms. Snowball sampling was employed due to the absence of a comprehensive sampling frame for women experiencing varying levels of premenstrual symptoms across Turkey and the sensitive and personal nature of the study topic. This approach facilitated access to eligible participants who might otherwise be difficult to reach through probability-based sampling methods, particularly in an online data collection context.

Data collection tool

The researchers prepared the Inclusion Criteria Questionnaire. The form contained questions regarding the study's inclusion and exclusion criteria and was used to identify women eligible for participation. Participants who answered yes to all of the study's inclusion criteria and no to all of the exclusion criteria were instructed to complete the remaining data collection forms. Those who gave different answers were instructed not to continue participating in the study.

The Individual Information Form (IIF) was prepared by the researchers [12,20-23]. It consisted of 14 items covering women's sociodemographic and work-life characteristics.

The Premenstrual Symptoms Screening Tool (PSST) was developed by Steiner, Macdougall, and Brown to identify premenstrual symptoms, PMS, and PMDD [24]. The tool consists of 22 items: 14 four-point Likert-type items on premenstrual symptoms; 5 four-point Likert-type items on (1) work efficiency or productivity, (2) relationships with coworkers, (3) relationships with family, (4) social life activities, and (5) home responsibilities; and 3 items that can be answered "Yes" or "No," which are not included in the calculation used for the diagnosis of PMS and PMDD, which determines the severity of premenstrual symptoms and the extent to which they affect life. It was adapted to Turkish by Özdel et al. The Turkish version has a Cronbach's alpha of 0.92 [25], which was 0.91 in the present study.

The Premenstrual Coping Measure (PMCM) was developed by Read et al. [26] and adapted into Turkish by Abay and Kaplan [27]. The measure consists of 27 items rated on a five-point Likert-type scale (ranging from "doesn't apply to me" to "almost always applies to me"). The total score is not considered in the evaluation. Higher subscale scores indicate less severe premenstrual symptoms and coping behaviors. The instrument comprises five subscales assessing methods of coping with premenstrual symptoms: "avoiding harm," "awareness and acceptance of premenstrual change," "adjusting energy," "self-care," and "communicating." Subscales of the Turkish version have Cronbach's alpha values of 0.88, 0.89, 0.75, 0.83, and 0.86, respectively [27]. In the present study, the subscales "avoiding harm," "awareness and acceptance of premenstrual change," "adjusting energy," "self-care," and "communicating" had Cronbach's alpha values of 0.89, 0.87, 0.77, 0.85, and 0.89, respectively.

Statistical analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS, IBM, version 22, Chicago, IL, USA) with a significance level of 0.05. Number (n), percentage (%), mean, and standard deviation (SD) were used for descriptive statistics. The Kolmogorov-Smirnov test was used to assess normality. The data were analyzed using independent-samples t-tests, one-way analyses of variance (ANOVAs), Chi-square tests, and Pearson's correlation coefficients. The Bonferroni-

corrected dependent-groups t-test was used for post hoc comparisons.

RESULTS

Sociodemographic and work-life characteristics

The sample consisted of 466 Turkish women. Participants had a mean age of 30.23 ± 8.021 years (min = 18, max = 53). More than half of the participants had bachelor's degrees (60.1%). Less than half of the participants were married (43.6%). More than a quarter of the participants had children (32.8%). More than half of the participants were employed (58.4%). 22.1% of the participants worked in shifts (9.10 ± 5.587 hours). Most employed participants reported that they did not take time off from work to cope with premenstrual symptoms (81.6%) and that they wanted legal rights to take such time off (78.7%). Other sociodemographic and work-life characteristics are presented in Table 1.

PMS/PMDD and coping with premenstrual symptoms

Table 2 shows the prevalence, severity, and effects of premenstrual symptoms (PMS/PMDD). Nearly half of the participants (49.4%) had premenstrual symptoms. One in five participants (19.5%) had moderate to severe PMS, while three in ten (31.1%) had PMDD. 42.9% of participants had severe physical premenstrual symptoms. A quarter of participants reported that premenstrual symptoms severely affected their work efficiency or productivity (24.2%). Participants coped moderately with premenstrual symptoms. The PMCM subscale scores are included in Table 2.

Work-life characteristics and PMS/PMDD

Participants with higher income had significantly lower rates of premenstrual symptoms, PMS, and PMDD than participants with lower income ($p < .05$). Those who did not take time off work to cope with premenstrual symptoms were more likely to have severe premenstrual symptoms, including PMS and PMDD, than those who did. In addition, among employed women, those who requested legal leave to cope with premenstrual symptoms were more likely to have severe symptoms, PMS, and PMDD than those who did not request leave ($p < .05$). Moreover, as the severity of premenstrual symptoms' effects on work efficiency or productivity increased, the prevalence of PMDD increased ($p < .05$). The prevalence of PMDD was higher among those who experienced moderate effects of premenstrual symptoms on relationships with coworkers ($p < .05$) (Table 3).

Work-life characteristics and coping with premenstrual symptoms

Economic status affected participants' PMCM "communicating" subscale scores ($F = 4.773$, $p = .009$). The post hoc analysis showed that participants with lower incomes had significantly poorer communication scores on the PMCM than those with higher incomes. Employed participants had a

Table 1. Distribution of women by sociodemographic and work life characteristics (n=466).

Characteristics	n	%
Age, mean (SD), years	30.23 (8.021)	
Education		
High school	48	10.3
Bachelor's degrees	280	60.1
Postgraduate education	138	29.6
Marital status		
Married	203	43.6
Single	263	56.4
Having children		
Yes	153	32.8
No	313	67.2
Family type		
Nuclear family	411	88.2
Extended family	36	7.7
Other	19	4.1
Economic status		
Lower income	121	26.0
Middle income	278	59.7
Higher income	67	14.4
Employed (working with income)		
Yes	272	58.4
No	194	41.6
Working sector ^a		
Government	187	68.8
Private	85	31.3
Type of work ^a		
Daytime work	197	72.4
Shift / on-duty work	60	22.1
Home-office	15	5.5
Working time, mean (SD), hours/day	9.10 (5.587)	
Take time off from work to cope with premenstrual symptoms ^a		
Yes	50	18.4
No	222	81.6
Want to have legal rights to take time off to cope with premenstrual symptoms ^a		
Yes	214	78.7
No / not necessary	58	21.3

SD: Standard deviation, n: number, %: percentage. ^a Since the evaluation was made on working women (n=272), the n value was not evaluated over 100%.

significantly higher PMCM “communicating” subscale score than their non-working with income counterparts ($t = 2.093$, $p = .038$) (Table 4).

A positive correlation was observed between working time per day and PMCM “awareness and acceptance of premenstrual change” subscale scores ($r = 0.118$, $p = .050$). Working time per day was negatively correlated with PMCM “adjusting energy” subscale scores ($r = -0.115$, $p = .049$) (Table 4).

Participants who took time off from work due to premenstrual symptoms had significantly higher PMCM “adjusting energy” subscale scores than those who did not ($t = 4.262$, $p = .000$). Participants who desired legal rights to take time off

to cope with premenstrual symptoms had significantly higher PMCM “adjusting energy” ($t = 4.001$, $p = .000$) and “self-care” ($t = 2.007$, $p = .046$) subscale scores than those who did not (Table 4).

PMCM subscale scores for “awareness and acceptance of premenstrual change,” “communicating,” and “adjusting energy” differed significantly according to the extent to which work efficiency or productivity was affected by premenstrual symptoms ($F = 7.692$, $p = .000$; $F = 4.253$, $p = .006$; $F = 24.193$, $p = .000$, respectively). Post hoc analyses revealed that participants whose work efficiency or productivity was moderately or severely affected by premenstrual symptoms

Table 2. Distribution of women by results of the PSST and the PMCM subscale scores (n=466).

PSST results	n				%
Premenstrual symptoms	230				49.4
Moderate/severe PMS	91				19.5
PMDD	145				31.1
Premenstrual symptoms	Not at all n (%)	Mild n (%)	Moderate n (%)	Severe n (%)	
Anger/irritability	13 (2.8)	95 (20.4)	214 (45.9)	144 (30.9)	
Anxiety/tension	17 (3.6)	119 (25.5)	209 (44.8)	121 (26.0)	
Tearful/increased sensitivity to rejection	54 (11.6)	80 (17.2)	176 (37.8)	156 (33.5)	
Depressed mood/hopelessness	46 (9.9)	92 (19.7)	184 (39.5)	144 (30.9)	
Decreased interest in work activities	58 (12.4)	116 (24.9)	201 (43.1)	91 (19.5)	
Decreased interest in home activities	58 (12.4)	116 (24.9)	201 (43.1)	91 (19.5)	
Decreased interest in social activities	62 (13.3)	107 (23.0)	209 (44.8)	88 (18.9)	
Difficulty concentrating	90 (19.3)	126 (27.0)	166 (35.6)	84 (18.0)	
Fatigue/lack of energy	24 (5.2)	85 (18.2)	172 (36.9)	185 (39.7)	
Overeating/food cravings	57 (12.2)	101 (21.7)	143 (30.7)	165 (35.4)	
Insomnia	199 (42.7)	102 (21.9)	123 (26.4)	42 (9.0)	
Hypersomnia (needing more sleep)	129 (27.7)	105 (22.5)	128 (27.5)	104 (22.3)	
Feeling overwhelmed or out of control	88 (18.9)	110 (23.6)	140 (30.0)	128 (27.5)	
Physical symptoms: breast tenderness, headaches, joint/muscle pain, bloating, weight gain	22 (4.7)	67 (14.4)	177 (38.0)	200 (42.9)	
Effects of premenstrual symptoms	Not at all n (%)	Mild n (%)	Moderate n (%)	Severe n (%)	
Work efficiency or productivity	37 (7.9)	115 (24.7)	201 (43.1)	113 (24.2)	
Relationships with coworkers	91 (19.5)	133 (28.5)	189 (40.6)	53 (11.4)	
Relationships with family	52 (11.1)	137 (29.4)	189 (40.6)	88 (18.9)	
Social life activities	40 (8.6)	145 (31.1)	176 (37.8)	105 (22.5)	
Home responsibilities	48 (10.3)	126 (27.0)	183 (39.3)	109 (23.4)	
PMCM subscales (Coping with premenstrual symptoms)	Mean ± SD (min-max)				
Avoiding harm	21.36 ± 6.098 (7-35)				
Awareness and acceptance of premenstrual change	35.61 ± 5.662 (11-45)				
Adjusting energy	9.13 ± 2.979 (3-15)				
Self-care	13.72 ± 3.660 (4-20)				
Communicating	12.01 ± 4.106 (4-20)				

PSST: Premenstrual Symptoms Screening Tool, PMS: Premenstrual Syndrome, PMDD: Premenstrual Dysphoric Disorder, PMCM: Premenstrual Coping Measure, n: number, %: percentage, SD: Standard deviation.

had significantly lower scores on the PMCM “awareness and acceptance of premenstrual change” and “communicating” subscales and significantly higher scores on the “adjusting energy” subscale, compared with those reporting no or mild impact. PMCM “adjusting energy” ($F = 19.789$, $p = .000$) and “communicating” ($F = 3.354$, $p = .019$) subscale scores differed significantly depending on the extent to which relationships with coworkers were affected by premenstrual symptoms. When the level of impact of premenstrual symptoms on relationships with coworkers (not at all, mild, moderate, and severe) was considered, post hoc analyses indicated that the no-impact group differed significantly from all other groups, and that the mild- and moderate-impact groups each differed significantly from the no-impact and severe-impact groups in terms of PMCM “adjusting energy” and “communicating” subscale scores (Table 4).

■ DISCUSSION

This study focused on women with premenstrual symptoms and investigated how they experienced PMS or PMDD and coped with these symptoms in the workplace. Several stud-

ies show that women with premenstrual symptoms are more likely to suffer from low productivity, poor work quality and performance, and high rates of absenteeism [21,28,29]. PMS causes impaired workplace functioning in at least 3-8% of women of reproductive age [30]. Women with PMS experience high rates of absenteeism and low productivity [14,31]. PMS also causes some women to experience high sensitivity to external stress and emotions [26]. Moreover, work-related stress exacerbates premenstrual symptoms [21,32]. Our results showed that nine in ten women with premenstrual symptoms — and almost all women with PMS and PMDD — experienced reduced work efficiency or productivity. The Results also showed that harsh working conditions affected their experience of PMS or PMDD. In other words, work-related stress exacerbates premenstrual symptoms and vice versa. Therefore, we should teach women strategies to cope with premenstrual symptoms to break the vicious cycle. Thus, employers can also avoid the average economic loss (USD 4,333 per person per year) caused by PMS [28].

Our results showed that students and healthcare profession-

Table 3. Distribution of women's work life characteristics by premenstrual symptoms, PMS, PMDD experience (n=466).

Characteristics	Premenstrual symptoms n (%)	Moderate/severe PMS n (%)	PMDD n (%)	Analysis
Education				
High school	33 (14.3)	6 (6.6)	9 (6.2)	X ² = 8.441 p = .077
Bachelor's degrees	129 (56.1)	58 (63.7)	93 (64.1)	
Postgraduate education	68 (29.6)	27 (29.7)	43 (29.7)	
Economic status				
Lower income	44 (9.1)	28 (30.8)	49 (33.8)	X ² = 11.920 p = .018*
Middle income	147 (63.9)	52 (57.1)	79 (54.5)	
Higher income	39 (17.0)	11 (12.1)	17 (11.7)	
Employed (working with income)				
Yes	143 (62.2)	48 (52.7)	81 (55.9)	X ² = 2.929 p = .231
No	87 (37.8)	43 (47.3)	64 (44.1)	
Working sector ^a				
Government	95 (66.4)	35 (72.9)	57 (70.4)	X ² = 0.844 p = .656
Private	48 (33.6)	13 (27.1)	24 (29.6)	
Type of work ^a				
Daytime work	103 (72.0)	33 (68.8)	61 (75.3)	X ² = 2.059 p = .725
Shift / on-duty work	30 (21.0)	13 (27.1)	17 (21.0)	
Home-office	10 (7.0)	2 (4.2)	3 (3.7)	
Take time off from work to cope with premenstrual symptoms ^a				
Yes	16 (11.2)	6 (12.5)	28 (34.6)	X ² = 20.183 p = .000*
No	127 (88.8)	42 (87.5)	53 (65.4)	
Want to have legal rights to take time off to cope with premenstrual symptoms ^a				
Yes	100 (69.9)	40 (83.3)	74 (91.4)	X ² = 14.906 p = .001*
No / not necessary	43 (30.1)	8 (16.7)	7 (8.6)	
Effects of premenstrual symptoms on work efficiency or productivity				
Not at all	35 (15.2)	1 (1.1)	1 (0.7)	X ² = 248.996 p = .000*
Mild	99 (43.0)	15 (16.5)	1 (0.7)	
Moderate	74 (32.2)	72 (79.1)	55 (37.9)	
Severe	22 (9.6)	3 (3.3)	88 (60.7)	
Effects of premenstrual symptoms on relationships with coworkers				
Not at all	80 (34.8)	6 (6.6)	5 (3.4)	X ² = 162.871 p = .000*
Mild	84 (36.5)	30 (33.0)	19 (13.1)	
Moderate	57 (24.8)	54 (59.3)	78 (53.8)	
Severe	9 (3.9)	1 (1.1)	43 (29.7)	

PMS: Premenstrual Syndrome, PMDD: Premenstrual Dysphoric Disorder, n: number, %: percentage, χ^2 : Chi-square test. a n = 272 (Employed women), * $p < 0.05$.

als had higher rates of premenstrual symptoms (PMS) and PMDD than other groups. Students exhibit a high prevalence of premenstrual symptoms due to various factors. First, they reside in dormitories, separate from their families. Second, they experience high stress due to their exams and have difficulty managing it. Healthcare professionals have a high rate of premenstrual symptoms, probably because they have been working day and night under stress since the onset of the pandemic [33]. For example, nurses with PMS experience more work-related stress, and PMS reduces the quality of their work life [34]. Our results pointed to a negative corre-

lation between working time per day and "adjusting energy," suggesting that women who work longer hours have more difficulty adjusting their energy, which is necessary to cope with premenstrual symptoms. Participants who were workers had the lowest "self-care" subscale score. This may not be surprising because workers labor under conditions as harsh as those experienced by nurses in Turkey.

The severity of premenstrual symptoms was associated with several work outcomes, such as work efficiency or productivity, relationships with colleagues, taking time off from work, and asserting legal rights to take time off to cope with pre-

Table 4. The relationship between women's work life characteristics and the PMCM subscale scores (n=466).

Work life characteristics		PMCM subscales				
		Avoiding harm Mean $\pm$ SD	Awareness and acceptance of premenstrual change Mean $\pm$ SD	Adjusting energy Mean $\pm$ SD	Self-care Mean $\pm$ SD	Communicating Mean $\pm$ SD
Economic status	Lower income	21.18 $\pm$ 6.075	34.76 $\pm$ 5.381	9.45 $\pm$ 2.820	13.84 $\pm$ 3.580	11.12 $\pm$ 3.918
	Middle income	21.51 $\pm$ 6.049	35.73 $\pm$ 5.761	9.04 $\pm$ 3.009	13.77 $\pm$ 3.510	12.19 $\pm$ 4.098
	Higher income	21.09 $\pm$ 6.414	36.61 $\pm$ 5.616	8.93 $\pm$ 3.130	13.31 $\pm$ 4.380	12.90 $\pm$ 4.240
Analysis		F = 0.198, p = .821	F = 2.494, p = .084	F = 0.994, p = .371	F = 0.503, p = .605	F = 4.773, p = .009*
Working sector	Government agency	21.81 $\pm$ 6.128	35.71 $\pm$ 5.723	9.17 $\pm$ 3.164	13.69 $\pm$ 3.713	12.62 $\pm$ 3.957
	Private sector	21.11 $\pm$ 6.069	35.91 $\pm$ 5.713	9.01 $\pm$ 2.876	13.07 $\pm$ 3.634	11.79 $\pm$ 4.290
Analysis		t = 0.888, p = .379	t = -0.267, p = .789	t = 0.397, p = .692	t = 1.294, p = .198	t = 1.518, p = .131
Type of work	Daytime work	21.61 $\pm$ 6.397	35.82 $\pm$ 5.881	9.07 $\pm$ 3.179	13.31 $\pm$ 3.774	12.28 $\pm$ 4.195
	Shift / on-duty work	21.30 $\pm$ 5.524	35.80 $\pm$ 5.364	9.15 $\pm$ 2.686	14.07 $\pm$ 3.546	12.63 $\pm$ 3.849
	Home-office	22.53 $\pm$ 4.373	35.00 $\pm$ 5.000	9.60 $\pm$ 3.247	13.67 $\pm$ 3.109	12.33 $\pm$ 3.478
Analysis		F = 0.246, p = .782	F = 0.143, p = .867	F = 0.210, p = .811	F = 0.983, p = .376	F = 0.173, p = .841
Employed (working with income)	Yes	21.59 $\pm$ 6.107	35.77 $\pm$ 5.710	9.12 $\pm$ 3.072	13.50 $\pm$ 3.693	12.36 $\pm$ 4.074
	No	21.04 $\pm$ 6.087	35.38 $\pm$ 5.601	9.15 $\pm$ 2.850	14.04 $\pm$ 3.600	11.53 $\pm$ 4.111
Analysis		t = 0.961, p = .337	t = 0.729, p = .466	t = -0.134, p = .894	t = -1.57, p = .115	t = 2.168, p = .031*
Working time, mean (SD), hours/day		r = 0.020, p = .740	r = 0.118, p = .050*	r = -0.115, p = .049*	r = -0.079, p = .192	r = 0.034, p = .572
Analysis						
Take time off from work to cope with premenstrual symptoms	Yes	21.42 $\pm$ 6.091	35.12 $\pm$ 5.546	10.74 $\pm$ 2.891	13.84 $\pm$ 3.814	11.98 $\pm$ 4.740
	No	21.63 $\pm$ 6.124	35.91 $\pm$ 5.749	8.75 $\pm$ 2.999	13.42 $\pm$ 3.670	12.45 $\pm$ 3.916
Analysis		t = -0.220, p = .826	t = -0.888, p = .375	t = 4.262, p = .000*	t = 0.728, p = .467	t = -0.730, p = .466
Want to have legal rights to take time off to cope with premenstrual symptoms	Yes	21.72 $\pm$ 6.026	35.66 $\pm$ 5.652	9.50 $\pm$ 2.910	13.73 $\pm$ 3.587	12.36 $\pm$ 4.135
	No	21.12 $\pm$ 6.429	36.17 $\pm$ 5.953	7.72 $\pm$ 3.276	12.64 $\pm$ 3.977	12.34 $\pm$ 3.878
Analysis		t = 0.662, p = .509	t = -0.607, p = .544	t = 4.001, p = .000*	t = 2.007, p = .046*	t = 0.033, p = .974
Effects of premenstrual symptoms in work efficiency or productivity	Not at all	19.59 $\pm$ 7.998	37.46 $\pm$ 5.362	6.81 $\pm$ 3.324	13.14 $\pm$ 4.104	13.62 $\pm$ 4.172
	Mild	21.63 $\pm$ 5.654	37.35 $\pm$ 4.854	8.14 $\pm$ 2.721	13.83 $\pm$ 3.747	12.70 $\pm$ 3.885
	Moderate	21.81 $\pm$ 5.742	34.84 $\pm$ 5.968	9.31 $\pm$ 2.654	13.59 $\pm$ 3.658	11.61 $\pm$ 4.040
	Severe	20.88 $\pm$ 6.382	34.60 $\pm$ 5.472	10.59 $\pm$ 2.859	14.04 $\pm$ 3.429	11.51 $\pm$ 4.245
Analysis		F = 1.715, p = .163	F = 7.692, p = .000*	F = 24.193, p = .000*	F = 0.730, p = .535	F = 4.253, p = .006*
Effects of premenstrual symptoms in relationships with coworkers	Not at all	20.91 $\pm$ 7.017	37.00 $\pm$ 5.461	7.27 $\pm$ 3.030	13.54 $\pm$ 3.953	12.92 $\pm$ 4.078
	Mild	21.70 $\pm$ 5.018	35.57 $\pm$ 5.220	9.09 $\pm$ 2.633	13.57 $\pm$ 3.534	12.23 $\pm$ 3.933
	Moderate	21.69 $\pm$ 6.074	35.13 $\pm$ 6.024	9.67 $\pm$ 2.756	13.76 $\pm$ 3.670	11.75 $\pm$ 4.100
	Severe	20.11 $\pm$ 6.885	35.00 $\pm$ 5.488	10.51 $\pm$ 3.061	14.26 $\pm$ 3.454	10.85 $\pm$ 4.330
Analysis		F = 1.229, p = .299	F = 2.508, p = .580	F = 19.789, p = .000*	F = 0.545, p = .652	F = 3.354, p = .019*

PMCM: The Premenstrual Coping Measure, SD: Standard deviation, F: One way analysis of variance (ANOVA), t: Independent samples t-tests, r: Pearson's correlation coefficients, *p<0.05.

menstrual symptoms. Participants with premenstrual symptoms experienced mildly reduced work efficiency or productivity. Participants with PMS exhibited moderately low work efficiency (productivity). Participants with PMDD experi-

enced severely reduced work efficiency or productivity. Participants with premenstrual symptoms had mildly poor relationships with their coworkers, whereas those with PMS and PMDD had moderately poor ones. Borenstein et al. also

reported that women with PMS and PMDD suffered from poor productivity and impaired personal relationships [14]. Hardy and Hardie determined that women with premenstrual symptoms experienced difficulty concentrating, self-doubt, fatigue, social isolation, and outbursts of anger [21]. Since these symptoms cause absenteeism, women feel guilty and engage in over compensatory behaviors such as working longer hours and taking work home after the symptoms have disappeared. Women occupy a more disadvantaged position in working life. Women are considered ‘unstable and uncontrollable’ during menstruation, pregnancy, motherhood, and menopause [20].

Our results showed that although eight out of ten working participants wanted to be legally entitled to take time off to cope with premenstrual symptoms, only two out of ten took time off because of premenstrual symptoms. Research also shows that very few women take time off from work to cope with premenstrual symptoms, because they view the challenges these symptoms cause as personal issues and feel ashamed of them. They also fear that their managers (primarily men) might decline their demands or stigmatize them [12]. Our results showed that participants who took time off from work due to premenstrual symptoms reported higher energy levels than those who did not. However, our results showed that more than half of participants with PMDD did not take any time off from work. Hardy and Hardie reported that this cycle experienced every month by women who cannot cope with PMS causes them to leave the workforce and give up their careers voluntarily or involuntarily [21]. Therefore, employers, managers, policymakers, and health professionals must be cognizant of PMS. More importantly, women should be aware of premenstrual symptoms and believe they are manageable [26]. Wyatt et al. found that more than a quarter of women with PMS and PMDD considered premenstrual symptoms normal, as they believed them to be an inevitable part of being a woman [35]. Our results may support this situation and indicate that women who were unaware of premenstrual changes or who had difficulty accepting them experienced poorer work efficiency or productivity and more impaired relationships with coworkers.

Limitations

Women’s experience of PMS/PMDD was assessed by self-report using the PSST; a limitation of the study is that a clinical evaluation could not be performed. Moreover, the results are limited to Turkish women. The online nature of data collection and the use of snowball sampling may also have limited the generalizability of the results.

CONCLUSION

As a result, PMS and PMDD are major health problems that cause difficulties in occupational functioning. Harsh working conditions and stress exacerbate premenstrual symptoms,

making it harder for women to cope. Therefore, it is recommended that managers and employers learn more about women’s experiences of PMS and PMDD and provide support and resources to women in need. Turkish policymakers should enact legislation granting women legal leave to cope with premenstrual symptoms. Healthcare professionals should screen all women who present to a health center for premenstrual symptoms. Healthcare organizations and workplaces should offer group training programs on coping with PMS and PMDD. Future research should be conducted prospectively using qualitative methods and involving women, employers, and managers. The physical and psychological conditions of working environments for women with PMS/PMDD should be investigated.

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Informed Consent: Written informed consent was obtained from those who agreed to participate.

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