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Prevalence and Severity of Premenstrual Syndrome and Premenstrual Dysphoric Disorder among Physicians in Port Said City

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Abstract

Background: **Premenstrual Syndrome (PMS) is related to high absence rates of employees and school students, poor academic performance, and acute psychiatric problems, it is one of the factors that make women more susceptible than men to depression. Child disturbance and family violence in the families of patients with PMS were reported, so PMS may affect not only the individual but also her family and the community.** ***Aim:*** **To improve the quality of life of physicians regarding premenstrual syndrome and premenstrual dysphoric disorder.** ***Subjects and Methods:*** **This study was a cross-sectional study and was carried out at primary health care centers and hospitals in Port Said city: 20 Primary health care centers were randomly selected from 32 centers under health insurance coverage and 6 hospitals were randomly selected from 8 hospitals under health insurance coverage. PHC centers and hospital physicians have been selected to meet the inclusion criteria, they have been assessed by 2 self-administered questionnaires: A structured questionnaire tool and Premenstrual Symptoms Screening Tool.** ***Results:*** **This study found that (22.7%) of physicians were diagnosed with Premenstrual Dysphoric Disorder and (58.7%) had "Moderate to Severe PMS", while (18.6%) had "No PMS/PMDD", The most reported symptom was Decreased interest in social activities (52.3%) followed by Fatigue/ lack of energy (50.0%) and feeling overwhelmed or out of control (50.6%).** ***Conclusions:*** **There is a high Prevalence of premenstrual syndrome and Premenstrual dysphoric disorder among physicians in Port Said City. Premenstrual symptoms screening tool (PSST) gives good descriptive data which could help to improve the quality of life of female physicians.**

Keywords: Premenstrual syndrome, Premenstrual dysphoric disorder

Introduction

Premenstrual syndrome (PMS) is a collection of physical and psychological symptoms that occur during the luteal phase of the menstrual cycle. It affects the female's normal daily functions and disappears shortly after menstruation[1]. In addition to PMS, the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) included premenstrual dysphoric disorder (PMDD)[2]. PMDD is a more severe form of PMS, it can be differentiated from PMS according to DSM-5, by the presence of at least five symptoms: one of these five symptoms should be from the four core symptoms; depressed mood/ dysphoria,

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anxiety/ tension, affective liability, or irritability, In addition, to fulfill the DSM-5 criteria for PMDD diagnosis, the symptoms must interfere with work, school, usual activities, or relationships[2]. The pooled prevalence of PMS was 47.8%. The lowest and highest prevalence was reported in France at 12% and Iran at 98% respectively[3]. The prevalence of PMS has been reported in 20% to 32% of premenopausal [4] and 30% to 40% of the reproductive female population[5]. The prevalence of PMS in athletes was 42.4% and PMDD was 8%[6]. Prevalence of PMS was found to be in 50.7% of female doctors in Saudi Arabia. Most of the cases with PMS are in the category borderline to mild (18%) and mild to moderate (16.3%). PMS had a significant relation with overall work impairment[7]. Often used criteria for PMS originate from the American College of Obstetricians and Gynecologists (ACOG) or the Royal College of Obstetricians and Gynecologists (RCOG)(1), psychiatric and physical symptoms included by (ACOG) in describing Premenstrual Syndrome are irritability, confusion, depression, anxiety, angry outbursts, social withdrawal, breast tenderness, abdominal bloating, joint or muscle pain, swelling of extremities and weight gain[8]. The RCOG (2007) criteria classify PMS into the categories of mild, moderate, and severe. The degree of severity depends on the degree of personal, social, and professional limitations[9]. Symptoms can occur anytime between menarche and menopause. The burden of disease can be high; women with PMS have higher rates of work absences, higher medical expenses, and lower health-related quality of life[10]. PMS is related to high suicide and accident rate, employment and school absentee rates, poor academic performance, and acute psychiatric problems, it is one of the factors that make women more susceptible than men to depression, child disturbance, and family violence in the families of patients with PMS were reported, so PMS may affect not only the individual but also her family and the community[11]. One study found that only 36% of women who were diagnosed with PMS continued to meet the diagnostic criteria one year later. Women who gained weight or had a stressful event in the past year are more likely to be diagnosed with PMS[12]. High stress was significantly associated with the occurrence of premenstrual symptoms and dysmenorrhoea severe enough to take medication. Stress is associated with severe dysmenorrhoea, irregular cycles, and premenstrual syndrome. This implies that interventions to reduce stress can improve menstrual health, thereby reducing future health risks and improving the quality of life[13]. Ideally, patients with moderate-to-severe PMS/PMDD should be managed by a team of professionals, which might consist of a gynecologist, psychologist, dietician, and family physician. This team management approach is thought to be beneficial from both diagnostic and therapeutic points of view, as it will offer a broad range of approaches, which can vary from lifestyle interventions and behavioral therapy to pharmacological interventions[14,15]. As PMS is a common health problem that may lead to higher rates of work absences, higher medical expenses, and lower health-related quality of life, most of the studies discussing this issue were conducted on normal populations and athletes, but there are only a few studies discussing this important health problem on physicians who meet many stressful events especially when studies in different countries indicated to a possible association of stress with PMS, so this study was conducted to know the magnitude of this health problem and to assess the severity

of the symptoms and there effect on the quality of life.

Subjects and Methods

Study setting and Study population
The study was carried out at primary healthcare centers and hospitals in Port Said City:

1) Data were collected from 20 Primary health care centers and units which were randomly selected from 32 PHC centers and units under health insurance coverage and they are (El Gawhara, Omar Ibn El Khatab, El manakh1, El manakh2, El-5000, Mostafa Kamel, Ali Ibn Abi Taleb, El maysarah, Osman Ibn Afan, El horyah, El safwah, Al amal, El Tawinyat, El herafyeen, Bank Eleskan, Elelag eltabeay, El arab, El arab2, Shark Elnawady, Elkweet) at the time between 9am to 2pm. Around 4 months started from 12/2020 to 3/2021. 2) Data were collected from 6 Hospitals which were randomly selected from 8 hospitals under health insurance coverage and they are (El nasr hospital, Elsalam, Eltadamon, Elhyah, Elzohor, El mabrah) at the time between 9 am to 5 pm. Around 4 months started from 12/2020 to 3/2021

Inclusion criteria
PHC and hospital physicians aged from 25 to 45 years old with menstrual cycle duration ranging from 21 to 35 days. Without any mental (e.g., depression, psychosis, bipolar disorder) or gynecological problems (e.g., endometriosis, polycystic ovary syndrome) by history. And, not receiving antidepressants/oral contraceptives/ hormones during the last 3 months.

Exclusion criteria
1- Physicians refuse to participate in the study. 2- Pregnant or lactating physicians. 3- History of chronic illness, diabetes, hypertension, heart disease, current depression, anxiety, and any other psychiatric disorders

Pilot study
The estimated sample size was 172 physicians. The questionnaire was tested on 10 subjects of the sample size before the beginning of data collection to: 1. Determine if the questions asked were understood by the respondent or not. 2. Perform any modification needed. 3. Determine the time required for each questionnaire. It was done on a purposive sample of 10 physicians who were not included in the study.

Methods

All participants were assessed by 2 self-administrated questionnaires:

1- Structured questionnaire tool
This tool includes two parts: Part (a): describes the personal demographic data of the participants; age, marital status, and place of work (primary health care center/hospital). part (b): describe the menstrual profile of the participants; menstrual regularity, menstrual cycle interval (days), and duration of menstrual flow (days).

2-Premenstrual Symptoms Screening Tool (PSST)
It is a 19-item instrument consisting of two domains: the first domain includes (14 items) related to psychological, physical, and behavioral symptoms and the second domain includes (5 items) to evaluate the impact of symptoms on women's functioning. Each item is rated on a four-point scale (not at all = 0, mild = 1, moderate = 2, severe = 3). According to the instruction of the PSST devised by Steiner et al. (2003)[16] for diagnosis of PMS, from the

following 14 symptoms [(1) tension/anxiety, (2) irritability/anger, (3) depressed mood/hopelessness, (4) tearful/increased sensitivity to rejection, (5) decreased interest in work activities, (6) decreased interest in home activities, (7) decreased interest in social activities, (8) difficulty concentrating, (9) fatigue/lack of energy, (10) overeating/food cravings, (11) insomnia, (12) hypersomnia, (13) feeling overwhelmed, and (14) physical symptoms], women must report at least five symptoms as moderate or severe where at least one should be from symptoms numbers 1–4 (namely core symptoms). Also, they must report if their symptoms interfere moderately or severely with their ability to function in at least one of five items in the second domain [(a) work efficiency, (b) relationships with coworkers (c) relationships with family, (d) social life activities, and (e) home responsibilities]. For diagnosis of PMDD, the following criteria must be present: (1) at least one of the symptoms (1 to 4) as severe; (2) in addition, at least four of the symptoms (1 to 14) as moderate to severe; and (3) at least one of a, b, c, d, and e as severe[16].

Scoring

The following criteria must be present for a diagnosis of PMDD: at least one of #1, #2, #3, #4 is severe. At least four of #1 -#14 are moderate to severe. At least one of A, B, C, D, and E is severe. The following criteria must be present for a diagnosis of moderate to Severe PMS: at least one of #1, #2, #3, and #4 is moderate to severe. at least four of #1 -#14 are moderate to severe at least one of A, B, C, D, and E is moderate to severe[16].

Results

The average age of the physicians was 32.28 ± 3.21 years, with a range of 26 to 37. A total of 76 physicians (44.2%) were 30 years or younger, while 96 physicians (55.8%) were above 30 years old. In terms of marital status, 110 physicians (64.0%) were married, 52 physicians (30.2%) were single, and 10 physicians (5.8%) were divorced. Regarding the workplace, 86 physicians (50%) worked at hospitals, while the other 86 physicians (50%) worked at Primary Healthcare (PHC) centers (Table 1). Table 2 reveals that the most frequently reported symptom was a "Decreased interest in social activities" (52.3%), characterized as "mild" This was followed by "feeling overwhelmed or out of control" (50.6%), also described as "mild" and "Fatigue/lack of energy" (50.0%) reported as "moderate". Table 3 reveals that, the most common response regarding symptoms interference according to PSST was "your school/work efficiency or productivity", there were 103 physicians (59.9%) answered "Mild" response followed by "your relationships with friends, classmates/coworkers"; 94 physicians (54.7%) answered "Mild" Then more than half the physicians; 92 (53.5%) responded with "Mild" regarding "your home responsibilities" followed by overeating/food slightly less than half the physicians; 82 (47.7%) answered with "Mild" regarding "your social life activities" and less than half 77 (44.8%) of physicians had answered "Mild" regarding "your relationships with your family". Fig. 3 illustrates that slightly less than one quarter (22.7%) of physicians were diagnosed with "PMDD" and slightly less than two-thirds (58.7%) with "Moderate to Severe PMS", while less than one quarter (18.6%) with No PMS/PMDD. There was a statistically significant association between the severity of PSST and personal demographic data regarding age "years" ($p<0.05$). The older age > 30 years was found in the PMDD group (74.4%), followed by No PMS/PMDD and Moderate to

severe PMS groups (53.1% & 49.5%) respectively, this indicates that increasing age may lead to existence of PMDD. While there was a highly statistically significant association between severity of PSST and personal demographic data regarding marital status (p<0.001).

Table 1: Distribution of physicians in Port Said city according to their demographic data (n=172).

Personal demographic data	Total (n=172)
Age Group	
≤30 years	76 (44.2%)
>30 years	96 (55.8%)
Marital status	
Married	110 (64.0%)
Single	52 (30.2%)
Divorced	10 (5.8%)
Widow	0 (0.0%)
Place of work	
Hospital	86 (50.0%)
Primary HC Center	86 (50.0%)

The higher Divorced & Married status was found in PMDD group (89.7%), followed by Moderate to severe PMS & No PMS/PMDD groups (64.4% & 62.5%) respectively, this indicates that PMDD is more in divorced and married status (Table 4). Table 5 shows that Age >30 years, Menstrual regularity (Irregular), and Place of work (Hospital), have a significant effect on PMDD, the older the age the higher PMDD, the increased menstrual irregularity the higher PMDD, PMDD is higher with work in hospital.

Discussion

Premenstrual syndrome (PMS) is a collection of physical and psychological symptoms that occur during the luteal phase of the menstrual cycle. It affects the female's normal daily functions and disappears shortly after menstruation[1].

Table 2: Distribution of Physicians in Port Said City according to Premenstrual Symptoms Screening Tool (PSST) (n=172).

Premenstrual Symptoms Screening Tool (PSST)	Not at all	Mild	Moderate	Severe
Anger/ Irritability	7 (4.1%)	56 (32.6%)	76 (44.2%)	33 (19.2%)
Anxiety/ Tension	0 (0.0%)	52 (30.2%)	80 (46.5%)	40 (23.3%)
Tearful/ increased sensitivity to rejection	34 (19.8%)	68 (39.5%)	43 (25.0%)	27 (15.7%)
Depressed mood/ hopelessness	0 (0.0%)	84 (48.8%)	63 (36.6%)	25 (14.5%)
Decreased interest in work activities	26 (15.1%)	50 (29.1%)	71 (41.3%)	25 (14.5%)
Decreased interest in home activities	9 (5.2%)	61 (35.5%)	81 (47.1%)	21 (12.2%)
Decreased interest in social activities	7 (4.1%)	90 (52.3%)	62 (36.0%)	13 (7.6%)
Difficulty concentrating	38 (22.1%)	48 (27.9%)	81 (47.1%)	5 (2.9%)
Fatigue/ lack of energy	0 (0.0%)	63 (36.6%)	86 (50.0%)	23 (13.4%)
Overeating/ food cravings	53 30.8%)	45 (26.2%)	62 (36.0%)	12 (7.0%)
Insomnia	88 (51.2%)	63 (36.6%)	21 (12.2%)	0 (0.0%)
Hypersomnia	38 (22.1%)	83 (48.3%)	44 (25.6%)	7 (4.1%)
Feeling overwhelmed or out of control	35 (20.3%)	87 (50.6%)	24 (14.0%)	26 (15.1%)
Physical symptoms *(breast tenderness, headaches, joint/muscle pain, bloating, weight gain)*	12 (7.0%)	70 (40.7%)	70 (40.7%)	20 (11.6%)

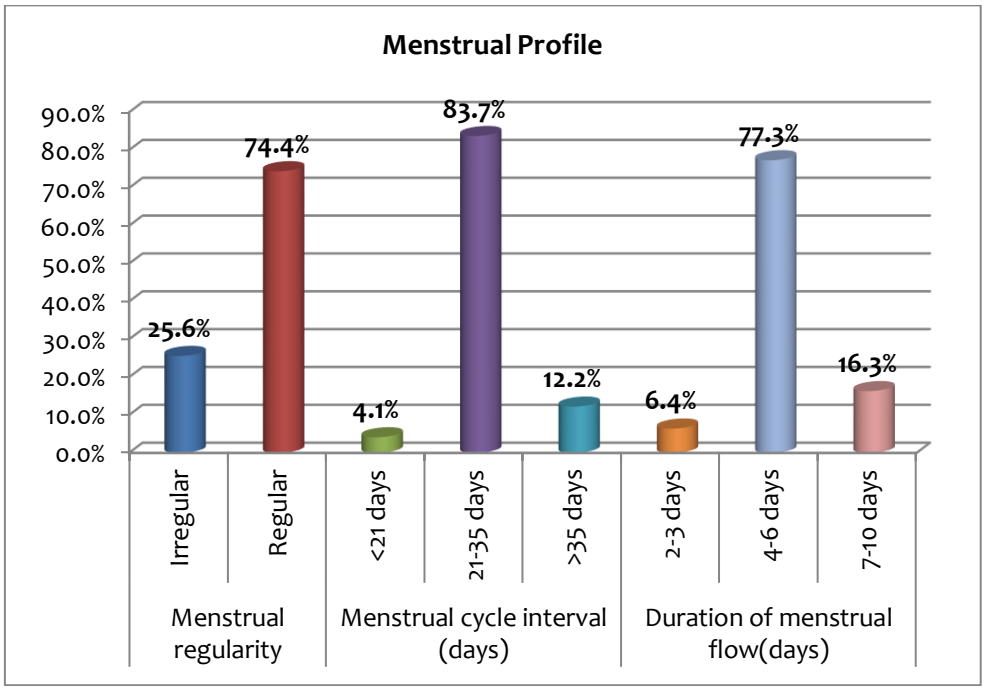

Figure 1: Distribution of physicians in Port Said city according to their menstrual profile regarding menstrual regularity, menstrual cycle interval (days), duration of menstrual flow (days)

Table 3: Distribution of physicians in Port Said city according to their Symptoms interference (PSST) (n=172).

Other symptoms	Not at all	Mild	Moderate	Severe
School/work efficiency or productivity	37 (21.5%)	103 (59.9%)	29 (16.9%)	3 (1.7%)
Relationships (friends, classmates/coworkers)	23 (13.4%)	94 (54.7%)	47 (27.3%)	8 (4.7%)
Relationships with your family	16 (9.3%)	77 (44.8%)	65 (37.8%)	14 (8.1%)
Social life activities	21 (12.2%)	82 (47.7%)	49 (28.5%)	20 (11.6%)
Home responsibilities	12 (7.0%)	92 (53.5%)	56 (32.6%)	12 (7.0%)

PMS is related to high suicide and accident rate, employment and school absentee rates, poor academic performance, and acute psychiatric problems, it is one of the factors that make women more susceptible than men to depression, child disturbance, and family violence in the families of patients with PMS were reported, so PMS may affect not only the individual, but also her family and the community[11]. PMS is a common health problem that may lead to higher rates of work absences, higher medical expenses, and lower health-related quality of life, and only a few studies discuss this important health problem in physicians who meet many stressful events especially when studies in different countries indicated to a possible association of stress with PMS, so this study was conducted to know the magnitude of this health problem and its effect on quality of life. This cross-sectional study was carried out at primary health care centers and hospitals in Port Said city to assess the prevalence and severity of PMS and PMDD among physicians in Port Said city, and to compare PHC. and hospital physicians regarding PMS and PMDD. The mean age of the physicians was 32.28±3.21 years (range 26 – 37 years). There were 76 physicians (44.2 %) ≤ 30 years and 96 physicians (55.8%) > 30 years. There were 10 physicians (5.8%) divorced, 110 physicians (64%) Married, and 52 physicians (30.2%) Unmarried.

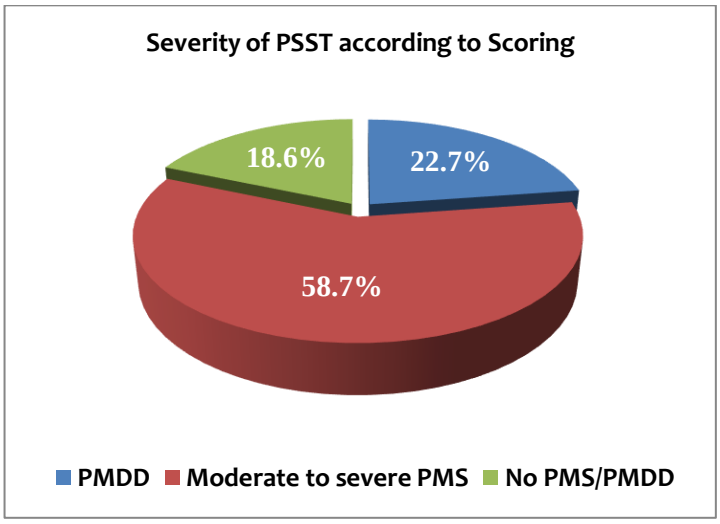

Figure 2: Distribution of physicians in Port Said city according to Scoring related to PSST

Table (4): Association between severity of PSST related to Scoring and personal demographic data regarding age group and marital status (n=172).

Personal demographic data	Diagnosis according to scoring						Chi-square test	
	PMDD (*n*=39)		Moderate to severe PMS (*n*=101)		No PMS/PMDD (*n*=32)			
	No.	%	No.	%	No.	%	x2	p-value
Age Group								
≤30 years	10	25.6%	51	50.5%	15	46.9%	7.163	0.027*
>30 years	29	74.4%	50	49.5%	17	53.1%		
Marital status								
Married	28	71.8%	63	62.4%	19	59.4%		
Single	4	10.3%	36	35.6%	12	37.5%	*FET*	<0.001**
Divorced	7	17.9%	2	2.0%	1	3.1%		

*FET: Fisher's Exact Test, *p-value <0.05 S; **p-value <0.001 HS*

For the place of work, there were 86 physicians (50%) from hospitals and 86 physicians (50%) from PHC centers. There were 44 physicians (25.6%) with irregular menstruation and 128 physicians (74.4%) with regular menstruation; 7 physicians (4.1%) with menstrual cycle < 21 days, 144 physicians (83.7%) with the menstrual cycle from 21-35 days and 21 patients (12.2%) with menstrual cycle > 35 days regarding menstrual cycle interval; the table shows that, 11 physicians (6.4%) with menstrual cycle from 2-3 days, 133 physicians (77.3%) with menstrual cycle from 4-6 days and 28 physicians (16.3%) with menstrual cycle from 7-10 days regarding duration of menstrual flow. These results agreed with Thakrar et al. (2021) where a regular menstrual cycle was found in 579 patients (88.53%) while it was irregular in 75 patients (11.46%).

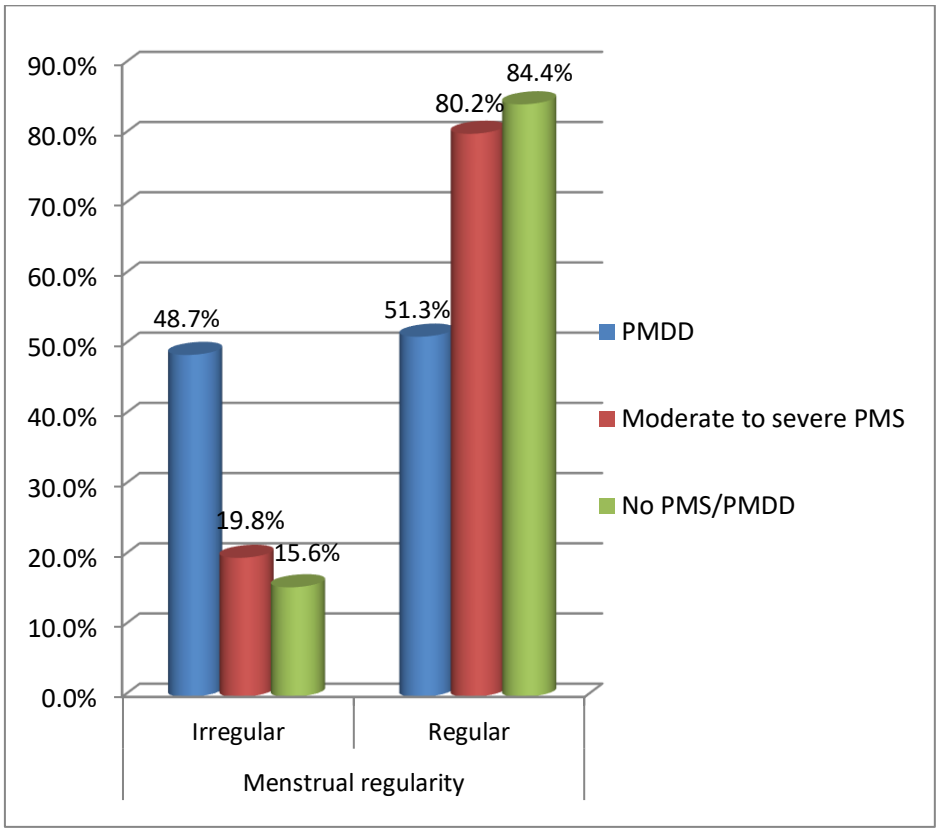

Figure 3: Association between severity of PSST related to Scoring and menstrual profile regarding menstrual regularity.

Table 5: Multivariable logistic regression analysis for determinants of PMDD vs. the dependent variable.

Factors	β	Sig.	OR	C.I. 95%	
				Lower	Upper
Age >30 years	0.218	0.004*	1.165	0.850	2.551
Marital status (Divorced & Married)	0.663	0.056	0.822	0.600	1.801
Menstrual regularity (Irregular)	0.211	0.009*	1.170	0.854	2.563
Place of work (Hospital)	0.193	<0.001*	1.187	0.866	2.599

*p-value >0.05 NS; *p-value <0.05; **p-value <0.001 HS*

The mean length of menses was 4.63 days as 558 patients had a menstrual cycle < 6 days and 96 had a menstrual cycle ≥ 6 days[17]. These results were also in agree ment with Tolossa et al. (2014) study, in which they reported that the usual menstrual cycle of the participants was 28 days (57.8%) and menstrual duration was 4–5 days (56.2%). All participants had regular cycles since the irregular ones were excluded from the study, the menstrual flow type of the majority of the participants was of moderate type which was 109 (63.0%) followed by mild menstrual flow which was 45 (26.0%)[11]. The results of the current study showed that (19.2%) of physicians

had answers "severe" at severity of PSST regarding "anger/ irritability", (23.3%) had "severe" regarding "anxiety/ tension"; (15.7%) "severe" regarding "tearful/ increased sensitivity to rejection" and (15.1%) "severe" regarding "feeling overwhelmed or out of control, (44.2%) "moderate" at severity of PSST regarding "anger/ irritability"; (46.5%) of physicians had answers "moderate" regarding "anxiety/ tension"; (41.3%) "moderate" regarding "decreased interest in work activities"; (47.1%) "moderate" regarding "decreased interest in home activities"; furthermore, (47.1%) of "moderate" regarding "difficulty concentrating"; (50.0%) of "moderate" regarding "fatigue/ lack of energy" (36.0%) of physicians had answers "moderate" regarding "overeating/ food cravings". As for the mild answer, it was revealed that, (39.5%) of physicians had answers "mild" at severity of PSST regarding "tearful/ increased sensitivity to rejection"; (50.6%) "mild" regarding "feeling overwhelmed or out of control"; furthermore, (48.8%) of physicians "mild" regarding "depressed mood/ hopelessness"; results also shows that, (52.3%) "mild" regarding "decreased interest in social activities" and (48.3%) "mild" regarding "hypersomnia" while, (51.2%) of "Not at All" at severity of PSST regarding "insomnia". From the above results, the most reported symptom was Decreased interest in social activities (52.3%) followed by Fatigue/ lack of energy (50.0%) and feeling overwhelmed or out of control (50.6%). This finding is similar to another study Egyptian university sample, which showed fatigue as the highest frequency of PMS symptoms among medical students (93.9%)[17]. Female medical students in Iran have also been found to report fatigue as the most prevalent PMS symptom[18]. These results resemble some extent the results of Raval et al. [19] study who studied the prevalence of PMS and PMDD among college students of Bhavnagar (Gujarat), they reported that the most commonly reported symptom was "fatigue/lack of energy" (68.3%), followed by "decrease interest in work" (60.1%) and "anger/irritability" (59.9%). Almost all participants (98.6%) of the "moderate to severe PMS" group and the majority of the PMDD group (94.4%) reported "fatigue/lack of energy" as moderate to severe. All participants of the PMDD group and the majority of the "moderate to severe PMS" group (94.4%), and nearly two-thirds of all (60.1%) participants reported, "decreased interest in work." It remained the second most common reported symptom[18]. In the present study, (40.7%) of physicians had answered "moderate" at the severity of PSST regarding "physical symptoms". (54.7%) of physicians had answered "Mild" regarding "your relationships with friends, classmates/coworkers" (44.8%) had "Mild" regarding "your relationships with your family". (47.7%) of physicians had answered "Mild" at "your social life activities". (53.5%) had "Mild" regarding "your home responsibilities". These results were in accordance with Nisar et al. [20] study where they studied the frequency and severity of Premenstrual Syndrome in medical college students and evaluated the impact of the condition on the quality of life, they reported that physical symptoms were around (68%), reduction of productivity or inefficiency at work, school, home or in daily routine was (55%) with less participation in hobbies or social activities (74.74%) and interference in relationships with others (64%). In the present study, slightly less than one quarter (22.7%) of physicians were diagnosed with "PMDD" and slightly less than two-third (58.7%) with "Moderate to Severe PMS", while less than one quarter (18.6%) with No PMS/PMDD. These results were against the

results of Chumpalova et al.[21] study which aimed to explore the prevalence of PMS/PMDD and their typical clinical features in a Bulgarian population, they found that 48% of the tested subjects suffered from mild PMS, 41.7 % suffered from moderate PMS and severe syndrome corresponding to PMDD was registered in 3.3%. The difference between the current study and Chumpalova et al.[21] study, could be attributed to that in Chumpalova study the study population was a general population with different ages and this percentage of prevalence in our study could be attributed to the fact that the female doctors are encountering a great deal of stress from the workload, in addition to social demands, trying to balance between workload and their family needs, particularly that perceived stress was related to PMS in many studies. The higher perceived stress precedes an increased severity of premenstrual symptoms with a recommendation for a stress reduction program as a non-pharmacological treatment for psychological and physical symptom reduction. It has been suggested that psychological stress affects ovarian function and therefore, hormonal changes, via responses from the hypothalamic-pituitary-adrenal axis[21]. The current study results were consistent with many studies that showed similar percentages for some classifications of severity. A large prospective study found PMS severity to be mild (51.2%), moderate to severe (33.2%), and PMDD (5.2%). A Cross-sectional survey found (40.8%) had Mild minimal symptoms, moderate to severe 21.9 %, and severe (8.6%)[22,23]. The current study results showed that there was a statistically significant association between the severity of PSST according to personal demographic data regarding age "years" ($p<0.05$). The older age > 30 years was found in the PMDD group (74.4%), followed by No PMS/PMDD and Moderate to severe PMS groups (53.1% & 49.5%) respectively, this indicates that increasing age leads to the existence of PMDD. These results were in accordance with the results of Abeje study where a statistically significant association was observed between the age of the participants and the occurrence of premenstrual syndrome. A statistically significant association was also observed between the occurrence of premenstrual syndrome and academic year among Addis ketema preparatory school students[24]. The study at Jimma University also showed that age has a significant association with PMS[25]. However, a lower prevalence of premenstrual syndrome was reported among Japanese high school students than in adult women.[26] This may be due to the socio-demographic differences between the study populations. While there was a highly statistically significant association between the severity of PSST and personal demographic data regarding marital status ($p<0.001$). The higher Divorced and married status was found in the PMDD group (89.7%), followed by Moderate to severe PMS and no PMS/PMDD groups (64.4% & 62.5%) respectively, this indicates that PMDD is more in divorced and married status. Also, there was a highly statistically significant association between the severity of PSST and menstrual regularity ($p<0.001$). The higher menstrual irregularity was found in the PMDD group (48.7%), followed by Moderate to severe PMS and no PMS/PMDD groups (19.8% & 15.6%) respectively, this indicates that menstrual irregularity leads to the existence of PMDD. These results were in agreement with a study by Assosa Technical and Vocation College reported that there was a significant association between PMS and menstrual irregularity [adjusted odds ratio (AOR): 1.36, 95%][27]. While, there is no statistically significant association between the severity of PSST related to Scoring and

menstrual profile regarding menstrual cycle interval (days), and duration of menstrual flow (days) with p-value >0.05 NS. This was inconsistent with Abeje and Berhanu [28] study, they reported that the occurrence of PMS in this study had a statistically significant association with long menstrual cycles (> 35 days), also this was found in a study in West Bengal, India which was identified menstrual cycle intervals and amount of blood flow during menstruation as important predictors of PMS. In the present study, there was a highly statistically significant difference between hospital and PHC centers and menstrual profiles regarding menstrual regularity (p<0.05). The higher menstrual irregularity was found in the Hospital group (39.5%), followed by the PHC centers group (11.6%). While, there was no statistically significant difference between hospital and PHC centers and menstrual profile regarding Menstrual cycle interval (days), Duration of menstrual flow(days) with p-value >0.05 NS. In the present study, there was a statistically significant association between the severity of PSST related to scoring and place of work (p<0.001). The higher work in hospitals was found in the PMDD group (71.8%), followed by the Moderate to severe PMS group (45.5%), while the lowest value was found in No PMS/ PMDD (37.5%). These results resemble to some extent the results of Shaheen et al. [29] study where the mean of work impairment among female doctors with PMS was 42.11±21.59 per week, and the impairment was increasing with increased severity of PMS, and this implies a significant burden on the quality of health care provided, as any percent of work impairment of doctors can lead to a considerable consequence[7]. Results of the current study revealed that age >30 years, Menstrual regularity (Irregular), and Place of work (Hospital), have a significant effect on PMDD, the older the age the higher PMDD, the increased menstrual irregularity the higher PMDD, the higher work of hospital the higher PMDD. This was against Chung et al. [30] study, as they reported that age, menstrual regularity, and place of work do not affect PMDD occurrence or severity, these differences could be attributed to socio-demographic differences and the percent of women who had PMDD among the study population (23%). To the best of our knowledge, we are considered from the novel researchers who aimed to assess the Premenstrual Symptoms Screening Tool (PSST) in female working doctors in the Middle East to improve the quality of life of physicians regarding premenstrual syndrome and premenstrual dysphoric disorder.

Conclusion

This study concluded that there is a high Prevalence and Severity of Premenstrual Syndrome and to a moderate extent Premenstrual Dysphoric Disorder among Physicians in Port Said City. The most reported symptom was "Decreased interest in social activities", followed by feeling overwhelmed or out of control and Fatigue/ lack of energy. Also, the premenstrual Symptoms Screening Tool (PSST) gives good descriptive data which could help to improve the quality of life of the female physicians.

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