The Open Nursing Journal
DOI: 10.2174/0118744346275923240307110626, 2024, 18, e18744346275923
ISSN: 1874-4346

RESEARCH ARTICLE OPEN ACCESS

Premenstrual Dysphoric Disorder: Knowledge, Attitude and Practice Among Egyptian Females: Results of Surveying Two Centers in the Delta Region

Eman Ibrahim Abd Elrehim[1], Ahmed Yousef[2], Mohamed Bendary[3], Rania El-Kurdy[4,*], Aisha Ghanem Abd El Lateef[5], Rasha Ezzat Elsayed[6], Ayman Al Hosainey Abd Almaksoud[7] and Ayman Hamdan-Mansour[8]

[1]*Department of Obstetrics and Gynecology, Damietta Faculty of Medicine, Al-Azhar University, Damietta, Cairo, Egypt*
[2]*Department of Public Health and Community Medicine, Damietta Faculty of Medicine, Al-Azhar University, Cairo, Egypt*
[3]*Department of Epidemiology and Biostatistics, National Cancer Institute, Cairo University, Cairo, Egypt*
[4]*Department of Woman's Health and Midwifery Nursing, Faculty of Nursing, Mansoura University, Mansoura, Egypt*
[5]*Department of Psychiatry, Faculty of Medicine for Girls, Al-Azhar University, Cairo, Egypt*
[6]*Department of Obstetrics and Gynecology, Faculty of Medicine for Girls, Al-Azhar University, Cairo, Egypt*
[7]*Department of Psychiatry, Damietta Faculty of Medicine, Al-Azhar University, Cairo, Egypt*
[8]*School of Nursing, The University of Jordan, Amman, Jordan*

Abstract:

Objectives: To assess the prevalence of Premenstrual Dysphoric Disorder (PMDD) and assess knowledge, attitude, and practice regarding Egyptian females.

Methods: This study used a cross-sectional, descriptive design to collect data from a gynecological outpatient clinic at Al-Azhar University Hospital in Damietta and the Obstetrics and Gynecology Specialty Center in Mansoura University Hospital. The study was conducted from April 2022 to August 2022. A self-administered questionnaire and screening tools were used for data collection. The tools used were the Premenstrual Symptoms Screening Tool (PSST), attitudes and practices related to PMDD care. Multivariate logistic regression analysis was conductedto predict PMDD knowledge.

Results & Discussion: The prevalence of PMDD was 10% among the 150 women who agreed to participate in this study. About 47% (n = 70) of the women had good PMDD knowledge. High educational level was a significant predictor of knowledge about PMDD. The majority of females (98%) believed that PMDD awareness is essential and that PMDD symptoms are caused by life stressors. Around half of the women who are diagnosed with PMDD (47.0% of the 10% of those diagnosed with PMDD) reported discussing the disorder with family members, and about one-third thought that this conversation was extremely beneficial. Husbands and friends were the most common source of social support (42.9%). Only 20% discussed the issue with a doctor, majority of who(66.7%) were psychiatrists.

Conclusion: PMDD is prevalent among Egyptian females; however, they have adequate knowledge and a positive attitude toward PMDD. There is a need to establish a maternal mental consultation at the reproductive and maternal health care unit to prevent and promote mental well-being and contact with PMDD and similar female mental problems.

Synopsis: The majority of the participants reported having adequate knowledge of PMDD and a positive attitude toward the significance of raising awareness of it. The significant predictor of PMDD knowledge was university education. Talking to family and friends was useful to overcome the symptoms of PMDD.

Keywords: Premenstrual dysphoric disorder, Knowledge, Attitudes, Practice, Egyptian females, Delta region.

*Address correspondence to this author at the Faculty of Nursing, Mansoura University, Al-Gomhoria Street, Mansoura, Dakahlia, Egypt; Tel: 00201006577020; E-mail: rania2009@mans.edu.eg

Cite as: Elrehim E, Yousef A, Bendary M, El-Kurdy R, Abd El Lateef A, Elsayed R, Abd Almaksoud A, Hamdan-Mansour A. Premenstrual Dysphoric Disorder: Knowledge, Attitude and Practice Among Egyptian Females: Results of Surveying Two Centers in the Delta Region. Open Nurs J, 2024; 18: e18744346275923.
http://dx.doi.org/10.2174/0118744346275923240307110626

Received: October 06, 2023
Revised: January 18, 2024
Accepted: February 06, 2024
Published: March 13, 2024

1. INTRODUCTION

The reproductive system of females, unlike males, shows regular cyclic changes [1]. Over 200 psychological, physiological, and behavioral alterations occur in the female body due to the menstrual cycle [2]. During the menstrual cycle, sex hormones are responsible for physiological changes in the reproductive organs, as well as changes in the female's physical and mental condition [3]. The majority of females go through at least one of these changes, such as irritation, mental instability, and physical symptoms like headache or bloating, particularly during the luteal phase. Premenstrual Dysphoric Disorder (PMDD) is a diagnosis given when a patient's mental symptoms are severe enough to affect their ability to function in social situations and other areas of their life, such as their ability to work efficiently [4]. In 20-40% of females, these symptoms may indicate a psychopathology that can significantly affect a female's quality of life [5].

Premenstrual Syndrome (PMS) and Premenstrual Dysphoric Disorder (PMDD) are two forms that characterize the changes in the mental health status of females due to hormonal disturbances, as aforementioned [6]. PMS refers to a set of emotional, somatic, and behavioral symptoms that occur cyclically only in the luteal phase and subside with the onset of menstrual bleeding. In contrast,PMDD is a severe form of PMS manifested by more intensified emotional symptoms affecting a subset of menstruating women with a disease burden compared to other depressive disorders [7]. Premenstrual Dysphoric Disorder (PMDD) criteria are mentioned in section II (Diagnostic Criteria and Codes) in the DSM-5TR, under the depressive disorders part of this section. The female must have premenstrual dysphoric symptoms during the majority of menstrual periods in the past year. These symptoms should begin five days before menses, improve during menses, and fade away after three days of menses. The female must have at least five premenstrual dysphoric symptoms to be diagnosed as a case of PMDD. At least one of the five symptoms must be one of the following: labile mood, irritability or anger, depressed mood and anxiety and tension. Other symptoms include decreased interest, concentration difficulties, fatigue, change in appetite, change in sleep habits, instability, and physical symptoms. The physical symptoms include breast tenderness, swelling, joint or muscle pain, and weight gain. These symptoms do not attribute to other physical or psychological disorders or medications and interfere significantly with social and work life [8]. Treatment of PMDD may take the pharmacological and nonpharmacological options. The last option is preferable among females [9]. Nonpharmacological strategies are cognitive behavioral therapy, dietary modification (restricted salt, restricted caffeine, and restricted alcohol), moderate regular exercise, stress management, and supportive therapy [9].

Studies showed that PMDD predisposes the onset and exacerbation of other mental health disturbances, such as depression, dysthymia, and generalized anxiety disorder, and increases the risk of antenatal peri-menopausal depression [10]. Studies showed that the 12-month prevalence of PMDD is 1.8–5.8% among menstruating women [5]. However, the severity of symptoms may vary among women suffering from PMDD, which has also been addressed by the literature, leading to higher rates of PMS and PMDD: 15.0-20.0% and 3.0-8.0%, respectively. Such rates are also dependent on the developmental phase of the female. For example, in a study targeting female university students during their exam time, we found that PMS was 92.3% and that PMDD was 7.7% [11]. Such figures are considered alarming to mental health and reproductive health professionals due to serving consequences on quality of life and functionality [12]. Thus, healthcare professionals need to be aware of and well-equipped with knowledge and skills to detect and manage PMS and PMDD.

The figures of PMS and PMDD indicate the need to be aware of the impact of the long-term effects of the situation and the attitude of women towards seeking psychological counseling as needed. Previous reports showed that women suffering from PMS or PMDD rarely seek medical counseling and that among those who do, a sufficient response to their needs is not obtained in a large proportion of cases [13, 14].]. Such a negative attitude and low tendency to seek appropriate counseling may delay treatment and contribute to the exacerbation of symptoms, leading to further biological, psychological, and social problems. Attitude however, largely depends on the level of knowledge of women and considered the keystone to appropriate practice. Lack of knowledge could be one significant reason for not considering psychological and medical counseling [15]. This would suggest that assessing females' attitudes, knowledge and practices utilizing the KAP model would enlighten the health professionals about the severity of such a mental situation and enable them to manage it appropriately.

Egypt is a highly populated country that suffers unequal distribution of health services. Mental health problems among females are considered one of the significant issues in Egypt; however, this requires females themselves to beware and very literate about female-related mental health problems such as PMS and PMDD. Globally, mental disorders are stigmatized, and people do not explicitly declare their mental health needs. This situation is much more evident among the Egyptian population and might contribute to further obstacles to seeking mental health services. Nevertheless, efforts are directed toward the enhancement of mental health literacy as one proving step toward improving the use and access to mental health services. Investigating the knowledge, attitudes, and practices of Egyptian females is one cornerstone to improving mental health literacy, use and access to mental health services. This study came to respond to this important need and steps and attempt to extend our understanding regarding the knowledge, attitudes, and practices of Egyptian females toward PMS and PMDD in Egypt.

2. MATERIALS AND METHODS

2.1. Study Design

This cross-sectional survey was conducted in the gynecological outpatient clinic at Al-Azhar University Hospital in Damietta and Obstetrics and Gynecology Specialty Center in Mansoura University Hospital. The study was conducted from April 2022 to August 2022.

2.2. Inclusion Criteria

Enrolled participants were adult females of reproductive age with a history of regular menses in the last six months and agreed to take part in this survey.

2.3. Exclusion Criteria

History of any psychological or any other medical disease, history of taking any psychological or chemotherapy treatment or any other drugs that may contribute to psychological symptoms that may overlap with PMDD and PMS or influence their ability to answer the survey questions.

2.4. Sampling

To have a representative sample design, stratification of the target population based on the number and weight of patients attending the studied hospitals during the study time was done, *i.e.*, Damietta University Hospital (3000) and Obstetrics & Gynecology Specialty Center in Mansoura University Hospital (2000). This sample frame provided access to a proper sample selection. A systematic random sampling methodology was used to conduct our study. In each hospital, women were selected randomly (1, 4, 7, and 10, *etc.*). All attendants who agreed with the inclusion requirements were hired before the target sample size was met.

2.5. Sample Size

The minimum sample size required was 111, and this number was rounded to 150 to compensate for any dropout of case or incomplete files and sampling error. The sample size represented (40%) of the Obstetrics & Gynecology Specialty Center in Mansoura University Hospital and (60%) of Damietta University Hospital patients. The sample size was calculated according to Stat-Calc software, Epi-info version 7 - based on a 95% confidence level, 5% margin of error, and the prevalence of premenstrual dysphoric disorder by 8% [13] in literature (Available at the official website of Egyptian Central Agency for Mobilization and Statistics) [16].

2.6. Instrumentation

After a comprehensive literature search in Medline, Embase, Web of Science, and Google Scholar, researchers were able to pinpoint the crucial components of Egyptian women's knowledge, attitudes, and practices about PMDD, which were formulated in the form of a questionnaire. It was originally developed in English and translated and distributed in the Arabic language according to the WHO guidelines for tool adaptation and translation. Face, content and construct validity were conducted using experts in the field of mental health and women's health to appraise the developed scales. The experts were also to authenticate and validate the questions in terms of relativity, simplicity, and importance. A pilot trial was conducted on twenty participants (excluded from the final analysis) to test for clarity, simplicity, time needed, cultural appropriateness and practicality. The scales were finalized after a series of group discussions with an estimated completion time of about 10-15 minutes. In this study, the scale showed good internal consistency with Cronbach's alpha of 0.638.

The tools were:

• The Premenstrual Symptoms Screening Tool (PSST) for clinicians [17, 18]: The Premenstrual Symptoms Screening Tool applies a necessary degree of measurement of the severity and impact of premenstrual symptoms using an easy 4-point rating system (not at all, mild, moderate, and severe). It determines whether women meet the criteria for PMDD or not.

• Knowledge domain (9 Items): Sources of knowledge and questions about the clinical presentation of PMDD, comparing PMDD with PMS, and management of PMDD. The scale showed good internal consistency with Cronbach's alpha of 0.71.

• Attitude domain (7 Items): PMDD awareness needs, seeking medical and/or psychiatric advice, attitude towards PMDD, cause of symptoms, and management support. Responses are based on three Likert scales (Agree, Neutral, & Disagree). The scale showed good internal consistency with Cronbach's alpha of 0.74.

• Practice domain (11 Items) was applied to gauge the participants' treatment of PMDD if they indicated a positive diagnosis. Talk to those around you about the problem, the direction of medical care, the type of specialization that was directed toward, and how to overcome this problem, pharmacologically or non-

pharmacologically. The scale showed good internal consistency with Cronbach's alpha of 0.68.

In addition, socio-demographics information, including age, education, history related to obstetrics, medication, menstruation, and information on general examination such as the BMI.

2.7. Statistical Analysis

Data management and statistical analysis were done using SPSS version 28 (IBM, SPSS). Quantitative data were assessed for normality using the Kolmogorov–Smirnov test and direct data visualization methods. According to normality, quantitative data were summarized as means and standard deviations or medians and ranges. Categorical data were summarized as numbers and percentages. Quantitative data were compared according to the occurrence of PMDD and PMDD knowledge using an independent t-test or Mann-Whitney U test for normally and non-normally distributed quantitative variables, respectively. Categorical data were compared using the Chi-square test. Multivariate logistic regression analysis was done to predict PMDD knowledge. Odds ratios and 95% confidence intervals were calculated. All statistical tests were two-sided. P values less than 0.05 were considered significant.

3. RESULTS

3.1. Participants' Demographic Characteristics

The mean age of females was 29 ±6 years. The median number of siblings was two, ranging from 0-6. Most females were married (90.7%) and in rural residences (78%). More than one-third were housewives (41.3%). About one-third had a university or above education (32.7%), and about half had a secondary school education (47.3%). Only 16.7% had basic education, and 3.3% were illiterate. The mean height and weight were 166 ±7 cm and 74 ±11 kg, respectively. Only 13.3% had a surgical history. The most frequent contraceptive method was IUCD (31.3%), followed by COCs (30%). About one-quarter (21.3%) did not use a contraceptive method. The prevalence of PMDD was 10%, as demonstrated in Table **1**.

Table 1. General characteristics of the studied females.

General Characteristics	-
Age (years)	29 ±6
Number of siblings	2 (0 - 6)
Marital status	-
Not married	14 (9.3)
Married	136 (90.7)
Residence	-
Rural	117 (78)
Urban	33 (22)
Job	-
Housewife	62 (41.3)
Working woman	88 (58.7)
Education level	-
Illiterate	5 (3.3)
Basic	25 (16.7)
Secondary school	71 (47.3)
University or above	49 (32.7)
Height (cm)	166 ±7
Weight (kg)	74 ±11
Surgical history	20 (13.3)
Contraceptive method	-
COCs	45 (30)
Injection	14 (9.3)
IUCD	47 (31.3)
Implant	9 (6)
Condom	1 (0.7)
Emergency bill	1 (0.7)
Tubal ligation	1 (0.7)
No contraception	32 (21.3)
PMDD	15 (10)

Note: Data were presented as mean ±SD, median (min-max), or number (percentage); COCS: Combined oral contraceptive pill; IUCD: intra-uterine contraceptive device.

3.2. Description of the Study Variables

3.2.1. Knowledge

About half of the studied females (46.7%, n = 70) reported knowledge about PMDD. About one-third (30%, n = 45) stated that gynecologists are better than psychiatrists in treating PMDD. About one-third (34.3%, n= 47) reported that PMDD does not require medical treatment. Additionally, most females (72.0%, n = 108) reported that non-medical methods effectively reduce PMDD symptoms. Only 18.6% (n = 27) reported that hormonal therapy is not used in treating PMDD, while 17.3% (n=27) stated that antidepressants are mandatory, as demonstrated in Table **2**.

Table 2. PMDD knowledge among the studied females.

-	n (%)
Knowledge about PMDD	70 (46.7)
The source of knowledge is TV *	35 (50)
The source of knowledge is symposium*	14 (20)
The source of knowledge is books*	24 (34.3)
Auditory hallucination is a PMDD symptom *	-
Yes	2 (2.9)
No	65 (92.9)
I don't know	3 (4.3)
Headache is a PMDD symptom *	-
Yes	62 (88.6)
No	5 (7.1)
I don't know	3 (4.3)
Suicidal tendency is a PMDD symptom *	-
Yes	4 (5.7)
No	63 (90)
I don't know	3 (4.3)
PMDD is associated with suicidal attempts*	-
Yes	9 (12.9)
No	46 (65.7)
I don't know	15 (21.4)
PMDD is associated with sleeping disorders*	-
Yes	43 (61.4)
No	12 (17.1)
I don't know	15 (21.4)
Gynecologists are better than psychiatrists in treating PMDD*	-
Yes	21 (30)
No	27 (38.6)
I don't know	22 (31.4)
PMDD does not require medical treatment*	-
Yes	24 (34.3)
No	30 (42.9)
I don't know	16 (22.9)
Non-medical methods are effective in reducing PMDD symptoms*	-
Yes	51 (72.9)
No	5 (7.1)
I don't know	14 (20)
Hormonal therapy is not used in treating PMDD*	-
Yes	13 (18.6)
No	12 (17.1)
I don't know	45 (64.3)
Antidepressants are mandatory in treating PMDD*	-
Yes	12 (17.1)
No	24 (34.3)
I don't know	34 (48.6)

Note: *Percentages were calculated based on 70 patients who had PMDD knowledge.

3.2.2. Attitude

Most females (98%) agreed that PMDD awareness is a must. Most females did not mind seeking medical advice (79.3%), psychiatrist consultation (64.7%), or family support (68%) about PMDD. Most females (84%) preferred dealing with PMDD by talking. In contrast, only 9.3% and 6.7% preferred dealing with hormonal treatment or antidepressants, respectively. Most females (80%) agreed that PMDD symptoms are due to life stress. Only 12%, 4%, and 4.7% agreed that PMDD is due to weakness in personality, envy, or possession by spiritual shades, respectively. Most females (91.3%) agreed to change their lifestyle if it would help overcome PMDD, as demonstrated in Table 3.

Table 3. PMDD attitude among the studied females.

-	n (%)
tdere must be awareness about PMDD	-
Agree	147 (98)
Disagree	2 (1.3)
Neutral	1 (0.7)
I do not mind seeking medical advice about my PMDD	-
Agree	119 (79.3)
Disagree	21 (14)
Neutral	10 (6.7)
I do not mind seeking a psychiatrist consultation if necessary	-
Agree	97 (64.7)
Disagree	40 (26.7)
Neutral	13 (8.7)
I prefer dealing with PMDD symptoms by talking	-
Agree	126 (84)
Disagree	23 (15.3)
Neutral	1 (0.7)
I prefer dealing with PMDD symptoms with hormonal treatment	-
Agree	14 (9.3)
Disagree	135 (90)
Neutral	1 (0.7)
I prefer dealing with PMDD symptoms with antidepressant	-
Agree	10 (6.7)
Disagree	139 (92.7)
Neutral	1 (0.7)
I do not mind seeking family support to overcome PMDD	-
Agree	102 (68)
Disagree	33 (22)
Neutral	15 (10)
PMDD symptoms are probably due to weakness in personality	-
Agree	18 (12)
Disagree	129 (86)
Neutral	3 (2)
PMDD symptoms are probably due to envy	-
Agree	6 (4)
Disagree	141 (94)
Neutral	3 (2)
PMDD symptoms are probably due to possession by jen	-
Agree	7 (4.7)
Disagree	140 (93.3)
Neutral	3 (2)
PMDD symptoms are probably due to life stress	120 (80)
Agree	27 (18)
Disagree	3 (2)
Neutral	-
I am willing to change my lifestyle if this helps me overcome PMDD	-
Agree	137 (91.3)

(Table 3) contd.....

-	n (%)
Disagree	13 (8.7)
Neutral	0 (0)

Table 4. PMDD practice among females with PMDD.

-	n (%)
talking to family member(s) about PMDD symptoms	7 (46.7)
talking to husband *	3 (42.9)
talking to sister *	1 (14.3)
talking to friend *	3 (42.9)
The extent of this talking help in PMDD *	-
Sometimes	4 (57.1)
Extremely	3 (42.9)
	-
I discussed the topic with a doctor	3 (20)
The specialty of the doctor **	-
Psychiatrist	2 (66.7)
Other	1 (33.3)
I practiced non-medical methods to overcome PMDD	7 (46.7)
Type of non-medical methods *	-
Sport	4 (57.1)
Music	3 (42.9)
The non-medical method was effective *	7 (100)
The doctor prescribed medication for me	1 (6.7)
I took the medication prescribed †	0 (0)
Type of medication prescribed †	-
Antidepressant	1 (100)

Note: *Percentages were calculated based on 7 patients; **Percentages were calculated based on 3 patients; † Percentages were calculated based on 1 patient.

3.2.3. Practice

Only 15 patients had PMDD and were asked about their practice. About half (46.7%, n = 70) reported talking to family members about PMDD, and about one-third of them (42.6%, n = 64) reported extreme help with this talk. Husbands and friends were the most frequent persons (42.6%, n= 46). Only 20% (n = 30) discussed the topic with a doctor, mainly a psychiatrist (66.7%, n = 100). About half (46.7%, n = 70) practiced non-medical methods to overcome PMDD, and all reported these methods' effectiveness. The most frequent non-medical method was sport (57.3%, n= 86), followed by music (42.6%, n= 64). Only one female reported that the doctor prescribed medical treatment (antidepressant), and she did not receive it, as demonstrted in Table 4.

3.2.4. Factors Affecting PMDD Knowledge

Patients were classified according to PMDD knowledge. Seventy patients had PMDD knowledge, while 80 (53.3%) did not. Those with PMDD knowledge had a significantly lower number of rural residences (p = 67.1% *vs*. 87.5%, p = 0.003), lower housewife number (20% *vs*. 60%, p < 0.001), lower number of university education level (35.7% *vs*. 95%, p < 0.001). No significant difference was reported regarding age (P = 0.819), as demonstrated in Table 5.

Table 5. Factors affecting PMDD knowledge.

-	PMDD Knowledge		-
-	Yes (n = 70)	No (n = 80)	P-value
Age (years)	29 ±6	29 ±6	0.819
	-	-	-
	-	-	-
Married women	58 (82.9)	78 (97.5)	0.002*
Residence	-	-	-
Rural	47 (67.1)	70 (87.5)	0.003*
Urban	23 (32.9)	10 (12.5)	-

(Table 5) contd.....

-	PMDD Knowledge		-
-	Yes (n = 70)	No (n = 80)	P-value
Job	-	-	-
Housewife	14 (20)	48 (60)	<0.001*
Working woman	56 (80)	32 (40)	-
Education	-	-	-
Below university	25 (35.7)	76 (95)	<0.001*
University or above	45 (64.3)	4 (5)	-

Note: Data were presented as mean ±SD, median (min-max), or number (percentage); * Significant.

Table 6. Multivariate logistic regression analysis to predict PMD knowledge.

-	OR (95% CI)	P-value
Number of siblings	0.75 (0.47-1.21)	0.240
Marital status	1.25 (0.14-11.39)	0.838
Residence	2.03 (0.65-6.31)	0.222
Working female	1.92 (0.72-5.09)	0.190
University education	17.09 (5.11-57.12)	<0.001*
Surgical history	3.17 (0.7-14.38)	0.134
Contraception	0.38 (0.09-1.55)	0.176

Note: * Significant; OR: Odds ratio; 95% CI: 95% confidence interval.

3.2.5. Predictors of PMDD Knowledge

All significant variables on the univariate level were included in a multivariate logistic regression analysis to predict PMDD knowledge. The only significant predictor in the model was university education (OR = 17.918, 95% CI = 5.112 – 57.124, p < 0.001), as demonstrated in Table **6**.

4. DISCUSSION

This study emphasized the significant contribution of PMDD by evaluating the prevalence and assessing the knowledge, attitude, and practices concerning PMS. We found that the prevalence of PMDD was 10%. The results of this study agree with other previous reports that found that PMDD ranges from 4.8% to 18.0% [19-21]. Such variation might be related to methodological issues such as the difference in sample and sampling and the cultural context of the selected sample. In the present study, approximately half of the participants reported having good knowledge about PMDD. Although women in Egypt, similar to other neighboring countries, do suffer from a lack of health literacy in many health-related issues, they were able to identify and prove that they have the appropriate knowledge regarding one significant female mental illness [22, 23]. Different explanations can be proposed here that might explain the good knowledge among women. For example, almost half of the women are working and have a higher level of education. This might have contributed to having them more exposed to different resources of information and provided them with the opportunity to be more oriented to symptoms that could explain their changes in mood. Being well-educated would suggest that they could seek and find information about what they feel from different resources. The results suggest that education and being an active worker would enhance women's awareness and be more literate about their mental health status, connecting that to their philological functions. The results support previous reports that women with higher levels of education had higher levels of PMDD knowledge [21], who discovered that higher education was an independent predictor of PMDD symptoms. As a result, raising awareness among persons with limited education is critical, as they may not have enough access to information about PMDD symptoms.

The study of Delelegn *et al*. [24] revealed that PMDD symptoms were connected with increased severity of stress, which is consistent with the current study's finding that most females (80%) reported that PMDD symptoms are caused by life stress.

One significant contribution of this study to the body of knowledge is the high level of awareness about seeking psychological care for PMDD when needed. Almost two-thirds of women expressed that they do not mind receiving medical advice, psychiatrist consultation, and seeking out family support on PMDD. Such a high level of awareness is considered antistigma behavior that would enhance the general community's mental well-being. Unfortunately, no comparative studies have been found within the same cultural context that have been published in spite of the knowledge that stigma among Arabs, in general, is one of the most significant negative factors that contribute to delay in seeking treatment and exacerbate the health and wellbeing of those suffering mental health problems and illnesses [24-27]. The good knowledge and awareness among women in this study also contributed reflected in their practices, where we found that most of them reported talking to their family about PMDD symptoms and did not receive help with such initiation of communication with family members.

One limitation of this study is related to the settings of

data collection in which two medical centers have been included in our study. Therefore, the study findings cannot be generalized to all women in Egypt. The PSST, which is a screening rather than a diagnostic tool, was used to evaluate PMDD. This may also contribute to the high prevalence of PMDD among the current sample.

CONCLUSION

This study reveals that around 10% of the women who participated in this study have PMDD, and the majority of those women believe that PMDD awareness is important and advocate seeking medical advice. Higher educational level is the only significant predictor of good PMDD knowledge in the present study. Talking to family members, especially the husband, is helpful to overcome the symptoms of PMDD. The results indicate that mental health literacy is one significant factor that needs to be sustained among women. Orientation and early intervention mental health screening are required at the obstetrics and gynecology outpatient unit. This will enable assessing and intervening earlier to prevent the development of symptoms of mental disorders if not treated and managed well. Further longitudinal research is needed larger sample size to address the long-term consequences of PMDD and identify skills of management among women when they suffer symptoms. Variables such as social support and psychological well-being have to be addressed at every visit to maternal and child health care centers.

LIST OF ABBREVIATIONS

PMDD = Premenstrual Dysphoric Disorder

PMS = Premenstrual Syndrome

PSST = Premenstrual Symptoms Screening Tool

BMI = Body Mass Index

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The ethical approval for the study was obtained from the Institutional Review Board at Damietta Faculty of Medicine, Al-Azhar University (IRB# 00012367-22-03-001; 25/3/2022). Additionally, Clinical Trials.gov has approved it with an approval number (NCT05327075).

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committees and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Informed consent was obtained from all participants with an emphasis on voluntary participation and withdrawal at any time without any justification.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data set used and/or analyzed during the current study is available from the corresponding author [R.E-K] upon reasonable request.

FUNDING

None.

CONFLICT OF INTEREST

Dr. Ayman Hamdan-Mansour is the Editorial Advisory Board Member for the journal The Open Nursing Journal.

ACKNOWLEDGEMENTS

Sincere thanks was given to the patients for the information collection.

REFERENCES

[1] Rhoades RA, Bell DR. Medical Physiology: Principles for Clinical Medicine. (4th ed.), China: Lippincott Williams & Wilkins 2012.

[2] Padhan A, Bhardwaj A, Sivaraman J. Effects of menstrual cycle on atrial ECG components. Proceedings of the International e-Conference on Intelligent Systems and Signal Processing. Springer Singapore. 2020; pp. 219-27.

[3] Khan S. To study the effect of different phases of menstrual cycle on ECG & blood pressure in healthy young adult females. J Med Sci Clin Res 2016; 4(5): p10406-14. http://dx.doi.org/10.18535/jmscr/v4i5.07

[4] Aoki M, Suzuki M, Suzuki S, Takao H, Okayama H. Cognitive function evaluation in premenstrual syndrome during the follicular and luteal phases using near-infrared spectroscopy. Comprehensive Psychoneuroendocrinology 2022; 10100117 http://dx.doi.org/10.1016/j.cpnec.2022.100117 PMID: 35755198

[5] Indusekhar R, Usman SB, O'Brien S. Psychological aspects of premenstrual syndrome. Best Pract Res Clin Obstet Gynaecol 2007; 21(2): 207-20. http://dx.doi.org/10.1016/j.bpobgyn.2006.10.002 PMID: 17175199

[6] Hantsoo L, Epperson CN. Premenstrual dysphoric disorder: Epidemiology and treatment. Curr Psychiatry Rep 2015; 17(11): 87. http://dx.doi.org/10.1007/s11920-015-0628-3 PMID: 26377947

[7] Carlini SV, Deligiannidis KM. Evidence-based treatment of premenstrual dysphoric disorder: A concise review. J Clin Psychiatry 2020; 81(2): 6789. http://dx.doi.org/10.4088/JCP.19ac13071 PMID: 32023366

[8] American Psychiatric Association. Diagnostic and statistical manual of mental disorders, fifth edition, text revision. Washington: American Psychiatric Association, 2022 http://dx.doi.org/10.1176/appi.books.9780890425787

[9] Ahangar KS, dadkhah A, Dolatshahei B, Badeie MM. Efficacy of anger management training on anger severity symptoms of premenstrual syndrome. Procedia Soc Behav Sci 2011; 30: 1942-4. http://dx.doi.org/10.1016/j.sbspro.2011.10.377

[10] Branecka-Woźniak D, Cymbaluk-Płoska A, Kurzawa R. The impact of premenstrual syndrome on women's quality of life - a myth or a fact? Eur Rev Med Pharmacol Sci 2022; 26(2): 598-609. PMID: 35113436

[11] Shehadeh J, Hamdan-Mansour AM. Prevalence and association of premenstrual syndrome and premenstrual dysphoric disorder with academic performance among female university students. Perspect Psychiatr Care 2018; 54(2): 176-84. http://dx.doi.org/10.1111/ppc.12219 PMID: 28543046

[12] Mohib A, Zafar A, Najam A, Tanveer H, Rehman R. Premenstrual syndrome: Existence, knowledge, and attitude among female university students in karachi. Cureus 2018; 10(3)e2290 http://dx.doi.org/10.7759/cureus.2290 PMID: 29744256

[13] Gao M, Gao D, Sun H, Cheng X, An L, Qiao M. Trends in research related to premenstrual syndrome and premenstrual dysphoric disorder from 1945 to 2018: A bibliometric analysis. Front Public Health 2021; 9596128
http://dx.doi.org/10.3389/fpubh.2021.596128
[14] Eldeeb SM, Eladl AM, Elshabrawy A, Youssef AM, Ibrahim MH. Prevalence, phenomenology and personality characteristics of premenstrual dysphoric disorder among female students at Zagazig University, Egypt. Afr J Prim Health Care Fam Med 2021; 13(1): e1-9.
http://dx.doi.org/10.4102/phcfm.v13i1.2924 PMID: 34476974
[15] El-Masry N, Abdelfatah N. Quality of life and burden of women with premenstrual dysphoric disorder. Egypt J Psychiatry 2012; 33(1): 45.
http://dx.doi.org/10.7123/01.EJP.0000411124.67583.a3
[16] Gao M, Zhang H, Gao Z, *et al*. Global and regional prevalence and burden for premenstrual syndrome and premenstrual dysphoric disorder. Medicine 2022; 101(1): e28528.
http://dx.doi.org/10.1097/MD.0000000000028528 PMID: 35029919
[17] Egyptian central agency for mobilization and statistics. Available from: http://www.cdc.gov/epiinfo/index.html
[18] Steiner M, Macdougall M, Brown E. The premenstrual symptoms screening tool (PSST) for clinicians. Arch Women Ment Health 2003; 6(3): 203-9.
http://dx.doi.org/10.1007/s00737-003-0018-4 PMID: 12920618
[19] Roomaney R, Lourens A. Correlates of premenstrual dysphoric disorder among female university students. Cogent Psychol 2020; 7(1): 1823608.
http://dx.doi.org/10.1080/23311908.2020.1823608
[20] Gupta Madhu, Dua Devakshi, Kaur Harsheen, *et al*. Prevalence of premenstrual dysphoric disorder among school-going adolescent girls. Ind Psychiatry J 2019; 28(2): 198-202.
http://dx.doi.org/10.4103/ipj.ipj_79_19
[21] Ossama TO, Sabry S, Zoubeidi T, *et al*. Prevelance , severity and correlates of premenstrual dysphoric disorder symptoms among women in the arabian peninsula. Prim Care Companion CNS Disord 2017; 19(4): 17M02112.
[22] Hamdan-Mansour L, Alkhaldi S, Awamleh N, *et al*. Predictors of depressive symptoms in postpartum women: The role of contraceptive use, type and health-related factors. Al-Magallat al-Tibbiyyat al-Urdunniyyat 2022; 56(3): 212-5.
http://dx.doi.org/10.35516/jmj.v56i3.356
[23] El-Kurdy R, El-Nemer A, Yousef A, Elsaidy W, Hamdan-Mansour A. The moderation effect of affective commitment on the relationship between job stress and presenteeism among obstetric healthcare workers during COVID-19 pandemic. Open Nurs J 2022; 16(1): e187443462203090.
http://dx.doi.org/10.2174/18744346-v16-e2203090
[24] Fekih-Romdhane F, Daher-Nashif S, Stambouli M, *et al*. Suicide literacy mediates the path from religiosity to suicide stigma among Muslim community adults: Cross-sectional data from four Arab countries. Int J Soc Psychiatry 2023; 69(7): 1658-69.
http://dx.doi.org/10.1177/00207640231174359 PMID: 37191228
[25] Fekih-Romdhane F, Jahrami H, Alhuwailah A, *et al*. Cross-country validation of the arabic version of the prodromal questionnaire–brief (PQ-B) in young adults from the general population of the middle east and north africa (MENA) region. Int J Ment Health Addict 2023; 1-21.
http://dx.doi.org/10.1007/s11469-023-01048-4 PMID: 36820017
[26] Dalky HF, Alnajar M, Dalky AF, *et al*. Social cognitive elements of mental illness stigma among healthcare professionals currently working in general hospitals: A cross-sectional study from Jordan. Nurs Open 2023; 10(10): 6980-8.
http://dx.doi.org/10.1002/nop2.1953 PMID: 37515452
[27] Tsegaye D, Getachew Y. Premenstrual dysphoric disorder and associated factors among female health science students in Wollo University, Ethiopia, 2017/18. Matern Health Neonatol Perinatol 2019; 5(1): 8.
http://dx.doi.org/10.1186/s40748-019-0102-z PMID: 31139430