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**Original Article** 

# Effect of Premenstrual Syndrome on Work-Related Quality of Life in Turkish Nurses



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ABSTRACT

*Background:* Little is known about the effects of premenstrual syndrome (PMS) on work-related quality of life in nurses. We aimed to investigate the effect of PMS on work-related quality of life in Turkish nurses. *Methods:* A total of 134 volunteer nurses were included in this cross-sectional study between January

2015 and March 2015. One hundred and thirty-four nurses completed a questionnaire regarding demographic data, the Premenstrual Syndrome Scale (PMSS), and the Work-Related Quality of Life Scale (WRQoL). The nurses were classified as having or not having premenstrual syndrome according to the PMSS.

*Results*: The average age was 29.5  $\pm$  7.1 years and the prevalence of PMS was 38.1%. The total score of PMSS was significantly negatively correlated with the overall score (r = -0.341; p < 0.001) and all subscale scores of the WRQoL and ranged from -0.207 to -0.402 (p < 0.05 for all). All of the WRQoL subscale scores except stress at work (p = 0.179) in nurses with PMS were significantly lower than those of nurses without PMS (p < 0.05). The age ( $\beta = -0.258$ ; p = 0.021) and PMSS total score ( $\beta = -0.314$ ; p < 0.001) increment negatively; however, optimistic thinking ( $\beta = 0.228$ ; p = 0.008) positively affected overall WRQoL score.

*Conclusion:* Nurses with PMS have decreased levels of work-related quality of life in their professional lives. Methods to help cope with cyclic premenstrual symptoms may be used, and as a result, productivity and work-related quality of life may increase.

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#### 1. Introduction

Premenstrual syndrome (PMS) is characterized by physical and mental symptoms during the luteal phase of the menstrual cycle; however, symptoms improve rapidly with the onset of menstruation [1–3]. PMS is commonly seen in women of reproductive age and can be accompanied by emotional and physical symptoms [1]. The prevalence of PMS is approximately 20–32% of premenopausal women [4] and 30–40% in reproductive women [5]. One study using the PMS scale reported a 36.4% rate among nursing students [6]. PMS prevalence has also been reported to be 47.8% in a recently published meta-analysis [1]. PMS prevalence rates can vary due to cultural characteristics, sample differences, and diagnostic methods.

PMS affects the daily lives of women and can deteriorate their quality of life and social skills [1]. The severity of PMS symptoms is associated with its duration in how it impairs the daily lives of women [1,7]. The physical symptoms of PMS, such as irritability and muscle, joint, back, and abdominal pain, are more prevalent than the mental symptoms [7]. These symptoms are cyclic; however, their severity and extent can vary [1]. PMS also negatively affects a woman's sleep quality [8]. Several scales are used to determine the level of severity as well as the diagnosis of PMS. The development of the Premenstrual Syndrome Scale (PMSS) was based on DSM-III



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and DSM-IV-R, and is a reliable scale for measuring the severity of premenstrual symptoms [9].

Work-related quality of life can be described as the physical and mental perceptions of an employee about their working conditions and factors associated with the workplace. These conditions, and factors include: working hours, salary, physical conditions, career possibilities, and interpersonal relationships [10]. A woman's quality of life is strongly affected by both her social life and her working life. However, quality of life measurements at work are difficult when using generic quality of life scales. The Work-Related Quality of Life Scale (WRQoL) was developed by Van Laar et al [11] for measuring work-related quality of life. The WRQoL scale can be used as a key performance indicator for workers with high levels of education [12].

The responsibilities of nurses in clinical practices are important. Stressful and heavy working conditions, occupational risks, and low job satisfaction decrease a nurse's job performance [13]. The International Council of Nurses [14] reported that unhealthy work environments reduce a nurse's performance; thus, they may plan to leave if their personal or professional requirements are not meeting their expectations. Nurses may have a greater tendency toward PMS due to their heavy and stressful work lives. The frequency of PMS in nurses, which can negatively affect the quality of work life, is reported at 25.1% [15].

Several studies have examined PMS; however, the relationship between PMS and work-related quality of life in nurses has not been studied. Therefore, we decided to examine this relationship to determine if PMS affects the personal and professional lives of nurses.

#### 2. Materials and methods

#### 2.1. Design and sample

Data were collected in a cross-sectional design between January 2015 and March 2015 in Edirne, Turkey. One hundred and thirty-four nurses who worked at Trakya University Medical Faculty Hospital, Edirne, Turkey, and who volunteered to participate in the study were included. However, nurses who did not volunteer for the study or those who were experiencing menopause were excluded. Participants completed a questionnaire that included demographic data, the PMSS scale, and WRQoL scale.

#### 2.2. Ethical consideration

The Trakya University Scientific Research Ethic Committee approved this study (TUTF-BAEK 2014/214).

#### 2.3. Data collection measurements

#### 2.3.1. PMSS

The PMSS, developed by Gençdogan [9] in 2006, is based on the DSM-III and DSM-IV-R and is intended to measure the severity of premenstrual symptoms. It consists of 44 items on a 5-point Likert scale (1 = "never," 2 = "rarely," 3 = "sometimes," 4 = "very often," and 5 = "always") and nine subscales (depressive mood, anxiety, fatigue, irritability, depressive thoughts, pain, appetite changes, sleep changes, and swelling). Subscale scores are calculated as the sum of the items in the subscales. The PMSS total score is obtained from the sum of all nine subscales. The lowest PMSS score is 44 and the highest score is 220. More than 50% of the total PMSS scores (> 132) were classified as PMS positive. Higher PMSS scores indicate greater symptom severity during PMS [9].

#### 2.3.2. WRQoL

The WRQoL scale consists of 23 items on a 5-point Likert scale (from 1 = "strongly agree" to 5 = "strongly disagree") and six subscales that measure work-related quality of life. The subscale "job and career satisfaction" consists of six items (q1, q3, q8, q11, q18, and q20). The subscale "general wellbeing" also has six items (q4, q9, q10, q15, q17, and q21) and is related to happiness and life satisfaction. The subscale "home—work interface" consists of three items (q5, q6, and q14) and is related to issues of balancing family and work commitments. The subscale "stress at work" consists of two items (q7 and q19) related to under pressure at work. The subscale "control at work" consists of three items (q2, q12, and q23) related to being able to have control over decisions. The final subscale is "working conditions" and consists of three items (q13, q16, and q22) related to the physical working environment [11].

The validity and reliability of the Turkish version of the WRQoL was done by Duyan et al [16].

Three negative items (q7, q9, and q19) are in reversed coding before the calculation of the WRQoL subscale scores. Subscale scores are calculated by taking the mean of the subscale items. The overall WRQoL score is calculated by taking the mean of the six subscale scores [11]. Higher WRQoL scores indicate a higher workrelated quality of life.

#### 2.4. Statistical analysis

Demographic characteristics of patients were calculated as the mean  $\pm$  standard deviation, or n (%) of the total. Internal consistency of the PMSS and WROoL scales were analyzed using a reliability analysis and Cronbach  $\alpha$  coefficients. Normal distribution of the PMSS and WRQoL subscale scores were tested using the One-Sample Kolmogorov-Smirnov test. Relationships between the PMSS and WRQoL subscale scores were analyzed using a Spearman correlation analysis. More than 50% of the total PMS scale scores (> 132) were classified as PMS positive. The subscale scores of the WRQoL scale between individuals with PMS or without PMS were compared using the Mann–Whitney U test due to the non-normal distribution. The effect of PMSS total score and covariates [age, body mass index (BMI), marital status, presence of a child, education, shift work, and life perspective] on overall WRQoL score were investigated using multiple regression analysis. Statistical analyses were done using SPSS version 20.0 statistical software (IBM SPSS Inc., Chicago, IL, USA). A p value < 0.05 was accepted as statistically significant.

#### 3. Results

A total of 134 volunteer nurses responded to the survey. The mean age and BMI of the nurses were  $29.5 \pm 7.1$  years and  $23.4 \pm 3.9$  kg/m<sup>2</sup>, respectively. Of the 134 nurses, more than half (55.2%) were married, 43.3% had at least one child, 61.2% performed shift work, and the majority (83.6%) held an optimistic life perspective. Tea, coffee, smoking, and alcohol consumption rates were 90.3%, 86.6%, 30.6%, and 11.9%, respectively (Table 1).

Cronbach  $\alpha$  coefficients of the PMSS and WRQoL scales were 0.97 and 0.91, respectively. The mean PMSS total score was 119.7  $\pm$  34.7 (mean PMSS total score by average of items = 2.72  $\pm$  0.78), and the mean WRQoL score was 2.7  $\pm$  1.1.

Correlations coefficients between WRQoL and PMSS are given in Table 2. The overall WRQoL score and PMSS total score were significantly correlated (r = -0.341; p < 0.001). When the PMSS total score increased overall WRQoL score decreased (Fig. 1). Furthermore, all subscale scores of the WRQoL were negatively correlated with PMSS total score (p < 0.05). Considering the subscales, depressive thought was negatively correlated with all subscale scores of the WRQoL (p < 0.05). Depressive mood was

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