

COVID-19 phobia, personality traits and menopausal symptoms in women in the climacteric period

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Abstract

Introduction: Menopausal symptoms in women are influenced by personality traits as well as physical and psychological characteristics. The effects of coronavirus disease 2019 (COVID-19) phobia on personality traits and menopausal symptoms in premenopausal and postmenopausal women were examined in this study.

Material and methods: The study was conducted in a cross-sectional and descriptive design with 410 women. The data were collected using a descriptive data form, the COVID-19 phobia scale, the menopause rating scale, and the Cervantes personality scale.

Results: In this study, 46.8% of the women were premenopausal and 53.2% were postmenopausal. The mean age was 42.9 ±1.97 years in premenopausal women and 50.9 ±2.94 years in postmenopausal women. The psychological, social, and total COVID-19 phobia scores were found to be higher in postmenopausal women than premenopausal women. Postmenopausal women showed more introverted personality traits than premenopausal women. COVID-19 phobia affected postmenopausal women more than premenopausal women in terms of psychological, social and all menopausal symptoms. As COVID-19 phobia increased, neurotic personality traits increased in premenopausal women, and introverted and neurotic personality traits increased in postmenopausal women ($p < 0.05$). Menopausal symptoms increased with neurotic personality traits in premenopausal women and with introverted personality traits in postmenopausal women ($p < 0.001$).

Conclusions: COVID-19 phobia affected both groups in terms of menopausal symptoms and personality traits. For the management of menopausal symptoms, it is recommended to consider neurotic personality traits in premenopausal women and introverted personality traits in postmenopausal women.

Key words: climacteric, COVID-19, premenopause, postmenopause, personality.

Introduction

The climacteric period is a stage of life in women from the reproductive age to the age when reproduction ceases and includes premenopausal, menopausal and postmenopausal periods [1]. The coronavirus disease (COVID-19) pandemic negatively affected women in the climacteric period [2]. Women's stress levels increased during the COVID-19 pandemic when they were unable to visit a healthcare provider for any health problems or routine check-ups, as well as for the menopausal symptoms they were experiencing [3]. Women diagnosed with COVID-19 experienced more severe menopausal symptoms than women not diagnosed with COVID-19 [4].

Some of the factors that predispose pre-, peri- and postmenopausal women to depressive symptoms include low education, lack of a life partner, unemployment, high anxiety and neurotic personality. Personality characteristics can affect the severity of menopausal symptoms at serious levels [5] and shape the reactions

of individuals to life conditions by affecting their cognitive evaluations, associated emotions, and the strategies used to regulate these emotional activations [6]. The big five model of Costa *et al.* is frequently used in modeling personality characteristics [7]. In this model, the five dimensions represent a consistent and fundamentally stable set of aspects that influence individuals' emotions, thoughts, and behaviors across different life experiences. These are: extraversion (e.g. being enthusiastic), agreeableness (e.g. being respectful), conscientiousness (e.g. being trustworthy), neuroticism (e.g. being anxious), and openness (e.g. being creative) [8]. In the study of Augoulea *et al.* with 100 postmenopausal women, they reported that biological and hormonal factors as well as individual personality traits are associated with menopausal symptoms. The authors also stated that reserved and introverted women experience more severe menopausal symptoms, while women with high agreeableness are better able to cope with menopausal symptoms [9]. In a study of 150 healthy postmenopausal

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women (45–60 years) attending a menopause clinic, the big five model was compared between those with depression and those without. The severity of menopausal symptoms was compared similarly. In the study, it was found that women with moderate and high levels of neurotic personality traits may be more susceptible to depressive symptoms, and neurotic personality traits are a predictive factor that increases the severity of menopausal symptoms [10].

Previous studies have shown that personality characteristics affect menopausal symptoms [9, 10]. Based on the idea that COVID-19 phobia might affect women's personality characteristics and menopausal symptoms, in this study, it was aimed to determine the effect of COVID-19 phobia on women's personality traits and menopausal symptoms in premenopausal and postmenopausal women. The results of the study will enable the management of menopausal symptoms under extraordinary conditions such as the COVID-19 pandemic process, the development of preventive healthcare services by considering the personality characteristics that are thought to be effective, and obtaining guiding data for future studies.

Material and methods

Type of study

This study was conducted as a cross-sectional and descriptive study.

Sampling and participants

The study was conducted between June 2021 and July 2022 in the menopause clinic of a training and research hospital in a city located in the west of Turkey. The minimum sample size required for the study was calculated using G*Power 3.1 statistical analysis software. The sample size required for independent samples *t*-test analysis was determined as at least 135 women in each group based on a significance level of 0.05, 80% power and medium effect size ($d = 0.30$). A total of 410 participants were included in the sample during the data collection process of the study. The inclusion criteria were being able to understand and speak Turkish, being in the premenopausal or postmenopausal period, not having received the COVID-19 vaccine or not planning to receive it, and volunteering to participate in the study. Women who were 12 months past their last menstrual period were included in the study as postmenopausal women. The exclusion criteria were using psychiatric medication, being pregnant, having a history or current use of hormone replacement therapy, and undergoing surgical menopause. The study data were collected by the face-to-face interview method.

Instruments

The descriptive data form, COVID-19 phobia scale (C19P-S), menopause rating scale (MRS), and Cervantes personality scale (CPS) were administered to the participants to collect the study data.

Descriptive data form

The descriptive data form consisted of 11 questions on the descriptive characteristics of the women (age, educational status, menopause status, etc.).

COVID-19 phobia scale

The COVID-19 phobia scale is a five-point Likert-type self-assessment scale that was developed by Arpacı *et al.* to evaluate the phobia that might develop against the coronavirus. The scale consists of 20 items. All items are rated on a 5-point scale from "strongly disagree (1)" to "strongly agree (5)." The scale consists of four subscales (psychological, psycho-somatic, social, and economic). The sum of the subscale scores gives the total score of the scale and the total score ranges from 20 to 100 points. The higher the total score on the scale, the higher is the overall COVID-19 phobia. The total Cronbach's α coefficient of the scale was reported to be 0.92 [11]. In this study, the total Cronbach's α of the scale was 0.94.

Menopause rating scale

The scale was developed by Schneider *et al.* to assess the severity of menopausal symptoms [12]. The Turkish validity and reliability study of the scale was conducted by Gurkan in 2005 [13]. The five-point Likert-type scale consists of 11 items and three subscales. These are somatic, psychological, and urogenital complaints. The sum of the subscale scores gives the total score of the scale and the total score is in the range 0–44 points. An increase in the total score on the scale indicates an increase in menopausal complaints. The total Cronbach's α coefficient of the scale was reported to be 0.84. In this study, the total Cronbach's α coefficient of the scale was 0.90.

Cervantes personality scale

Castelo-Branco *et al.* developed the scale to assess women's personality traits [14]. The Turkish validity and reliability study of the scale was conducted by Bal Demirgöz *et al.* The scale has 20 items, three subscales and a six-point Likert-type design (extraversion/introversion, emotional stability/neuroticism, and consistency/inconsistency). The scale does not have a total score

and evaluates personality traits through subscales. As the score given by the individual in each subscale of the scale increases, the characteristics of being introverted, emotionally unstable (neuroticism), and inconsistent increase. Similarly, as the score given by the individual in each subscale decreases, the characteristics of being extroverted, emotionally balanced, and consistent increase. Each item is answered by considering how well the item describes the individual in line with his/her own experiences. Cronbach's α coefficient for the subscales of the scale was reported to be 0.97 for the extraversion/introversion subscale, 0.81 for the emotional stability/neuroticism subscale, and 0.71 for the consistency/inconsistency subscale [15]. In this study, Cronbach's α coefficient for the subscales of the scale was 0.74 for the extraversion/introversion subscale, 0.79 for the emotional stability/neuroticism subscale, and 0.73 for the consistency/inconsistency subscale.

Statistical analysis

For statistical analysis, the IBM SPSS Statistics version 22.0 software program was used. Descriptive characteristics are presented as mean, standard deviation, and percentage. To assess the normal distribution of the data, the Kolmogorov-Smirnov test and Levene's test for homogeneity of variances were used. In the comparison of the two groups, two-category variables were evaluated by the independent samples *t*-test and three or more categorical variables were evaluated by the one-way analysis of variance (ANOVA) test. The two groups were homogeneously distributed in terms of all descriptive characteristics except age, marital status and employment status. According to the menopausal status of the women, the mean scores of the subscales and total scores of the scales were analyzed with the independent samples Student's *t*-test. Relationships between the scales were determined using the Pearson correlation test. The level of statistical significance was set at 0.05.

Ethical approval

The Research Ethics Committee of a training and research hospital granted ethical approval (date: 12.10.2020, number: 2020/12-28). This study was conducted in accordance with the principles of the Declaration of Helsinki. The purpose of the study was explained to the participants. Participants were included in the study on a voluntary basis and informed consent was obtained from the participants. The personal data of the participants were anonymized and not shared with any person or institution. Permissions for the use of the scales used in the study were obtained from the authors.

Results

The study included a total of 410 women. Of these women, 46.8% were premenopausal and 53.2% were postmenopausal. All women had a mean age of 47.2 ± 4.74 years. The mean age of premenopausal women was 42.9 ± 1.97 years and the mean age of postmenopausal women was 50.9 ± 2.94 years. Other descriptive characteristics of the women in both periods were similar (Table 1).

According to the MRS, it was found that postmenopausal women experienced total menopausal symptoms ($p < 0.001$), especially somatic ($p = 0.041$) and psychological ($p < 0.001$) symptoms, significantly more severely than premenopausal women. According to the CPS, the extraversion/introversion subscale is above average for both groups. In terms of the extraversion/introversion subscale, both groups showed "introverted" personality traits. The emotional stability/neuroticism subscale of the scale was approximately in the average score range of the scale for both groups. Both groups were similar in terms of the emotional stability/neuroticism subscale. However, the mean score of "neuroticism" subscale was higher in postmenopausal women than in premenopausal women. The consistent/inconsistent subscale of the scale is below the average score range of the scale for both groups. In terms of the consistent/inconsistent subscale, both groups showed "consistent" personality traits. The level of introverted personality traits was found to be higher in postmenopausal women than in premenopausal women ($p = 0.022$). Emotional stability/neuroticism and consistent personality trait mean scores did not differ between the groups ($p > 0.05$). According to the C19P-S, postmenopausal women's total COVID-19 phobia, especially psychological and social phobia, scores were statistically significantly higher compared to premenopausal women ($p < 0.05$) (Table 2).

As COVID-19 phobia increased, somatic, psychological and urogenital symptoms as well as total menopausal symptoms increased further in both groups. This increase was greater in postmenopausal women ($p < 0.001$). An increase in neurotic personality characteristics was detected as COVID-19 phobia increased in premenopausal women, and an increase of introverted and neurotic personality characteristics was detected as COVID-19 phobia increased in postmenopausal women ($p < 0.05$). With increased neurotic personality characteristics, menopausal symptoms increased in premenopausal women. With increased introverted personality characteristics, menopausal symptoms increased in postmenopausal women ($p < 0.001$) (Table 3).

Discussion

The effects of COVID-19 phobia in women on their personality characteristics and menopausal symptoms were examined in this study. The psychological,

Table 1. Descriptive characteristics of women (N = 410)

Characteristics	Premenopausal (N = 192)	Postmenopausal (N = 218)	t/F
	n (%)	n (%)	p-value
Age (years)			
41–44	142 (74.0)	-	0.000
45–49	50 (26.0)	121 (55.5)	
50–55	-	97 (44.5)	
m (SD)	42.9 (1.97)	50.9 (2.94)	
Marital status			
Single	23 (12.0)	86 (39.4)	0.000
Married	169 (88.0)	132 (60.6)	
Place of living			
Province center	135 (70.3)	139 (63.8)	0.077
District	57 (29.7)	79 (36.2)	
Income status			
Low	65 (33.8)	75 (34.4)	0.559
Middle	109 (56.8)	121 (55.5)	
High	18 (9.4)	22 (10.1)	
Education status			
Primary school graduate	68 (35.4)	92 (42.2)	0.440
Secondary education graduate	58 (30.2)	76 (34.9)	
Bachelor's degree	66 (34.4)	50 (22.9)	
Employment status			
Working	92 (47.9)	49 (22.5)	0.000
Not working	100 (52.1)	169 (77.5)	
Family type			
Nuclear family	168 (87.5)	195 (89.4)	0.681
Extended family	14 (7.3)	8 (3.7)	
Living alone	10 (5.2)	15 (6.9)	
Number of pregnancies			
Nulliparous	16 (8.3)	11 (5.0)	0.409
Primiparous	19 (9.9)	27 (12.4)	
Multiparous	157 (81.8)	180 (82.6)	
Presence of chronic disease			
No	155 (80.7)	145 (66.5)	0.301
Yes	37 (19.3)	73 (33.5)	
Duration of menopause*			
1–3 years	-	81 (37.1)	
4–5 years	-	65 (29.8)	
6–8 years	-	72 (33.1)	

* Only menopausal women responded. The Kolmogorov-Smirnov test was used to evaluate the normal distribution of the data and Levene's test was used for homogeneity of variances.

social, and total COVID-19 phobia scores were higher in postmenopausal women than in premenopausal women. The COVID-19 pandemic caused fear, uncertainty, economic strain, and negative effects that damaged

mental health [16]. Quarantine measures during the pandemic period deeply affected people's lives, and these measures have caused social isolation, economic difficulties, loneliness, fear of the risk of transmission

Table 2. Mean scores and comparisons of COVID-19 phobia scale, menopause rating scale and Cervantes personality scale

Scales	Premenopausal (n = 192) M ±SD	Postmenopausal (n = 218) M ±SD	t	p-value
MRS				
Somatic complaints	8.52 ±3.55	10.61 ±4.23	5.979	0.000
Psychological complaints	10.31 ±4.10	11.68 ±4.21	2.047	0.041
Urogenital complaints	6.10 ±2.71	6.59 ±3.28	0.481	0.631
MRS total score	24.94 ±9.34	28.69 ±10.50	4.073	0.000
CPS				
Extroversion/introversion	20.14 ±4.77	21.70 ±4.80	2.295	0.022
Emotional stability/neuroticism	16.38 ±5.22	17.20 ±5.42	0.054	0.957
Consistent/inconsistent	12.04 ±4.54	12.60 ±4.14	0.367	0.714
C19PS				
Psychological	17.10 ±6.40	19.38 ±6.40	3.346	0.001
Psycho-somatic	8.95 ±4.57	9.41 ±4.37	1.642	0.101
Social	12.17 ±5.32	13.87 ±5.22	3.154	0.002
Economic	7.39 ±3.77	8.14 ±3.65	0.825	0.410
C19P-S total score	45.63 ±17.81	51.05 ±17.57	2.988	0.003

C19PS – COVID-19 phobia scale, CPS – Cervantes personality scale, M – mean, MRS – menopause rating scale, SD – standard deviation, t – independent samples Student’s t-test, p < 0

Table 3. Relationships between scales in premenopausal and postmenopausal women

Scales	Premenopausal		Postmenopausal	
	r*	p-value	r*	p-value
C19P-S total				
MRS				
Somatic complaints	0.268	0.000	0.313	0.000
Psychological complaints	0.278	0.000	0.314	0.000
Urogenital complaints	0.247	0.001	0.373	0.000
MRS total	0.230	0.000	0.339	0.000
CPS				
Introversion	0.096	0.228	0.163	0.016
Emotional stability/neuroticism	0.384	0.000	0.409	0.000
Consistent	0.024	0.554	0.038	0.419
MRS total				
CPS				
Introversion	0.105	0.146	0.685	0.000
Emotional stability/neuroticism	0.525	0.000	0.169	0.058
Consistent	0.126	0.082	0.074	0.274

C19PS – COVID-19 phobia scale, CPS – Cervantes personality scale, M – mean, MRS – menopause rating scale, SD – standard deviation, t – independent samples Student’s t-test, p < 0.05
r* Pearson correlation analyses

of COVID-19 infection and uncertainty about future life [17]. People also experienced difficulties during the pandemic because their socioeconomic status was affected. The income levels of the majority of women were medium or low in the present study, their education levels were secondary or primary education, and their employment status was low. This might have prevented women from accessing healthcare services and might have caused them to be more negatively affected

in psychological terms. It was reported in previous studies that people who had low socioeconomic status showed higher depression and anxiety rates when compared to people with high socioeconomic status under extraordinary conditions such as the COVID-19 pandemic [18].

In the present study, somatic, psychological, and total menopausal symptoms were found to be higher in postmenopausal women than in premenopausal wom-

en (Table 2). This result might have occurred because there might have been a worsening of the menopausal symptoms of menopausal women during the COVID-19 pandemic. Ak Sözer *et al.* examined the relationship between menopausal symptoms and perceived stress in 239 middle-aged women (mean age 54.08 ± 4.82 , mean age at menopause 47.88 ± 4.32) during the COVID-19 pandemic. The authors determined that 77.4% of women had menopausal complaints, 44.8% had increased severity of menopausal symptoms during the pandemic, 55.6% could not go to a health institution for menopausal symptoms, and 69.5% had restricted access to health visits due to the pandemic. It was also found that as women's perceived stress levels increased, their menopausal complaints became more severe. In this study, similar to our study, the mean scores of the subscales of the MRS (the somatic, psychological and urogenital subscales) were moderate [3]. Also, 13.2% of the women were single, and 6.1% lived alone in our study. The COVID-19 pandemic affected social support systems negatively. Loneliness and lack of social support also affect women's menopausal symptoms. Monterosa-Blanco *et al.* conducted a study with 984 women between the ages of 40–59, 39.2% of whom were in the postmenopausal period. In the study, four in ten women in the climacteric period reported experiencing emotional, social, and general loneliness during the COVID-19 pandemic (44.0%, 42.2% and 44.5% respectively). In particular, these rates of loneliness were higher among women aged 40–44. Somatic complaints, psychological complaints, urogenital complaints and impaired quality of life were more common in women who reported suffering from loneliness [19].

Our findings show that COVID-19 phobia is a determinant of menopausal symptoms and personality traits. Although COVID-19 phobia affected menopausal symptoms in both groups, this effect was more pronounced in postmenopausal women. Increased COVID-19 phobia was associated with increased neurotic personality traits in premenopausal women and introverted and neurotic personality traits in postmenopausal women. Neurotic personality traits were associated with increased menopausal symptoms in premenopausal women. Introverted personality trait score was associated with increased menopausal symptoms in postmenopausal women (Table 3). Yamauchi *et al.*'s study examined COVID-19-related media exposure and impairment of mental well-being in a cross-sectional web-based survey study conducted with 8 000 participants aged 25–64 years. Approximately half of the participants reported poor mental health scores. The extroverted personality characteristic impaired mental well-being less because of the exposure to media information on the COVID-19 pandemic. The neurotic personality characteristic disrupted mental well-being because of the information in the media regarding the COVID-19 pandemic [20]. The extraverted personality

characteristic is associated with the ability to adapt to social, cognitive, and physical functions better in life [21]. Neurotic personality is associated with general emotional over-reactivity and susceptibility to depression with the influence of stress conditions [22]. The results obtained in the present study show that women's personality characteristics are affected by COVID-19 phobia, increasing introverted personality characteristics and neurotic personality characteristics in postmenopausal women. Also, according to Augoulea *et al.* [9], women who have introverted personality characteristics experience more severe menopausal symptoms, and women who have agreeable personality characteristics can cope with menopausal symptoms better. Menopausal symptoms and personality characteristics of 400 Turkish women were examined in the study of Orhan *et al.* and the average age of women was reported as 57.31 ± 5.22 and mean age at menopause 49.63 ± 5.07 [23]. In the study, a positive relationship was detected between the extraversion/introversion personality trait scores of the postmenopausal women and their somatic and urogenital complaints. It was found that there was a relationship between emotional instability/neurotic personality trait scores and somatic, psychological and urogenital complaints of women. Introverted personality traits of postmenopausal women were associated with increased somatic and urogenital complaints, while neurotic personality traits were associated with increased menopausal complaints in all areas. Although menopausal symptoms and personality characteristics are related, COVID-19 phobia affected the menopausal symptoms of both premenopausal and postmenopausal women in our study. This effect was greater in postmenopausal women. Moreover, neurotic personality traits for premenopausal women and introverted personality traits for postmenopausal women were associated with higher levels of menopausal symptoms.

Limitations

This study has some limitations. The data on COVID-19 phobia, menopausal symptoms, and personality characteristics were obtained with the data collection tools in line with women's self-reports. Only one hospital was involved in the study and the results are valid only for this study group. Since the study has a cross-sectional design, causality could not be determined.

Conclusions

In the present study, COVID-19 phobia was associated with higher levels of menopausal symptoms in premenopausal and postmenopausal women. Postmenopausal women showed more neurotic personality traits

in terms of emotional stability/neuroticism personality traits related to COVID-19 phobia. COVID-19 phobia was associated with increased neurotic personality traits in premenopausal women. Neurotic personality trait score was associated with increased menopausal symptoms in premenopausal women. COVID-19 phobia was associated with higher introverted and neurotic personality trait levels in the postmenopausal women. Introverted personality traits were associated with higher levels of menopausal symptoms in postmenopausal women. These results show that it is beneficial to consider personality traits to help evaluate women in the climacteric period. It is recommended to investigate these consequences in the management of menopausal symptoms under extraordinary conditions such as the COVID-19 pandemic when women's access to healthcare is restricted. It is also recommended that healthcare staff (doctors, nurses, *etc.*) support women with education and consultancy services regarding menopause, considering the results of the present study.

Disclosures

1. The Research Ethics Committee of Izmir Tepecik Training and Research Hospital granted ethical approval (date: 12/10/2020, number: 2020/12-28).
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4. Conflicts of interest: None.

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