

Original Article

Severity of Menopausal Symptoms in Climacteric Turkish Women

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Abstract**Background:** Perception of menopausal symptom severity differs between cultures.**Objective:** We aimed to assess the severity of menopausal symptoms in climacteric Turkish women.**Materials and Methods:** This cross-sectional study was conducted on 429 women (119 premenopausal, 141 perimenopausal, and 169 postmenopausal) between 40 and 65 years of age in a cross-sectional design. Menopausal symptoms were evaluated by using the Menopause Rating Scale (MRS).**Results:** The mean total score of the MRS was 11.2 ± 6.4 . Of the 429 women, 97.9% had at least one, and 20.3% had severe, menopausal symptoms. Total, somatic, psychological, and urogenital scores of the MRS in the peri- and postmenopausal stages were significantly higher than in the premenopausal stage ($p < 0.05$ for all). The rates of severe somatic, psychological, and urogenital symptoms were 8.6%, 21.9%, and 26.3%, respectively. The risks of severe menopausal symptoms increased 3.67-fold ($p = 0.034$) in perimenopausal and 5.68-fold ($p = 0.032$) in postmenopausal stages when compared to the premenopausal stage.**Conclusion:** Of women 20.3% had severe menopausal symptoms. The severity of menopausal symptoms increased from one stage to the next.**Keywords:** Menopause; MRS; Premenopause; Perimenopause; Postmenopause; Severity; Menopausal symptoms.**Introduction**

Menopause is a natural process in a woman's life that can be defined as an irreversible loss of menstruation for at least 12 months due to the cessation of ovarian activity (Casper, 2015; Harlow et al., 2012). In the late reproductive stage, which is the last stage before the onset of the menopausal transition, menstrual cycles are ovulatory, but the follicular phase begins to shorten. During this stage, women have difficulty conceiving. Although not definite, the age this period begins is in the 40s when cycles begin to shorten. The perimenopausal (menopause transition) stage occurs, on average, at 47 years

of age and after the reproductive years. During this time, endocrinal changes, several menopausal symptoms, and irregular menstrual cycles are seen before menopause. Perimenopause begins, on average, 4 years before the last menstrual period. Hot flashes are the most common symptom, however, depression, vaginal dryness, and sleep disturbances are also common. Women experience a permanent cessation of menstruation after the menstrual irregularity; postmenopause then begins following 12 months of amenorrhea (Casper, 2015; Harlow et al., 2012).

Menopausal stages can be classified as premenopausal, perimenopausal, and postmenopausal. According to the Stages of Reproductive Aging Workshop (STRAW), women with regular menses are defined as being in the premenopausal stage; those with irregularities ≥ 7 days from their normal cycle or the occurrence of amenorrhea ≥ 60 days are defined as being in the perimenopausal stage; and those who have had no menses in the previous 12 months are defined as being in the postmenopausal stage (Harlow et al., 2012).

Thomas et al. examined menopause onset ages in 26 countries and reported the ages were between 44.6 and 52 years (Thomas et al., 2001). The menopause onset age was reported as 50–52 years for developed countries (Gold, 2011) however, it was younger in developing countries. Menopause before the age of 40 years is considered an abnormal event; this situation is referred to as primary ovarian insufficiency. Several factors such as genetics and smoking effect menopause onset age. Women typically spend one third of their lives in various menopausal stages, thus, menopausal symptoms can impair their general well-being and quality of life.

Menopause marks the end of a woman's reproductive ability and somatic, psychological, and urogenital complaints are associated with this period; thus, it is a significant stage in a woman's life. Several symptoms seen in most menopausal women are due to estrogen deficiencies and aging. In middle-aged Latin American women, 90.9% had at least one menopausal symptom (Blumel et al., 2012). Chedraui et al. reported that 24.9% of women had severe menopausal symptoms (Chedraui et al., 2008). Furthermore, studies from different countries have reported considerable variations in menopausal symptoms (AlDughaiter, AlMutairy, & AlAteeq, 2015).

The most prevalently reported menopausal symptoms are physical and mental exhaustion among middle-aged Chinese women, (Chou, Wun, & Pang, 2014) physical/mental exhaustion and muscle/joint problems among middle-aged Latin American women, (Blumel et al., 2012) and muscle/joint problems among middle-aged Ecuadorian and Omani women (Chedraui et al., 2007; El Shafie et al., 2011).

Menopausal symptoms are seen in higher rates during the perimenopausal and postmenopausal

stages compared to the premenopausal stage (Chedraui et al., 2007). Psychological symptoms are prevalent in the premenopausal stage (Blumel et al., 2004). Vasomotor symptoms (hot flashes and night sweats) are commonly seen in the postmenopausal stage, however, psychological symptoms (sleep disorders, irritability, depression) are prevalent during menopausal transition periods (Blumel et al., 2012; Blumel et al., 2011).

Menopausal symptoms are related to an impaired quality of life (Blumel et al., 2012). There are various scales that evaluate menopausal symptoms in women. The Menopause Rating Scale (MRS) is a commonly used scale to assess menopausal symptoms (Chou, Wun, & Pang, 2014).

The perception of menopausal symptom severity differs between cultures, for example, the menopause symptom score (MRS total score) is 14.2 for Chinese women (Chou, Wun, & Pang, 2014), while it is 11.2 for Latin American women (Blumel et al., 2012).

There is limited published data concerning menopausal symptoms and severity by stages in Turkey. Therefore, we aimed to assess the severity of menopausal symptoms by menopausal stages in climacteric Turkish women.

Materials and Methods

Study design, Location and time

This study was carried out in a cross-sectional design in the menopause clinic of Trakya University Medical Faculty, Department of Obstetrics and Gynecology, between March and August 2015.

Population and Sampling

Included in the study were 429 menopausal women (119 premenopausal, 141 perimenopausal, and 169 postmenopausal) who applied to the menopause clinic and volunteered to participate in the study. The included women were between 40 and 65 years of age.

Data Collection Tools

The women completed a questionnaire containing demographic characteristics and the MRS.

The women's menopausal statuses were classified as premenopause, perimenopause

(menopausal transition), and postmenopause by using the STRAW criteria.

Women having regular menses were defined as premenopausal, women having menstrual irregularities ≥ 7 days from their normal cycle or having amenorrhea of ≥ 60 days were defined as perimenopausal, and women having no menses in the last 12 months were defined as postmenopausal (Harlow et al., 2012).

Menopause Rating Scale (MRS)

The MRS consists of eleven items, three subscales (somatic, psychological, and urogenital), and the total score is a valid tool to assess menopausal symptoms (Heinemann, Potthoff, & Schneider, 2003).

Each item in the somatic (items 1, 2, 3, and 11), psychological (items 4, 5, 6, and 7), and urogenital (items 8, 9, and 10) subscales were coded from 0 to 4 (0 = none; 1 = mild; 2 = moderate; 3 = severe; and 4 = very severe). Higher scores indicated an increase in the menopausal symptoms. Menopausal severity was determined by using cut-off points as follows: ≥ 17 for MRS total, ≥ 9 for somatic, ≥ 7 for psychological, and ≥ 4 for urogenital subscale (Blumel et al., 2012; Blumel et al., 2011). Cronbach alpha coefficient of MRS scale was found 0.825.

Ethical Consideration

The local ethics committee of author's institution reviewed and approved to this study (TUTF-BAEK 2015/48).

The aim of the study were explained to the participants in the beginning of the study and verbal informed consent obtained from the all voluntary participants.

Statistical Analysis

Results were shown as mean \pm standard deviation or number (%). The one-way analysis of variance (ANOVA) was used for comparison of age and body mass index values among the menopausal stages. The Kruskal-Wallis test was used for comparison of parity, total and subscale scores of the MRS among the menopausal stages.

Categorical data were compared by using the Chi-square test. Effects of age, body mass index, parity, chronic illness, caffeine consumption, and menopausal stages on menopausal symptom

severity were analyzed by using the logistic regression analysis. Reliability of the MRS scale was assessed by using the Cronbach's α coefficient. SPSS 20.0 statistical software (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.) was used for statistical analysis. $P < 0.05$ was considered statistically significant.

Results

The age, body mass index, and parity were significantly different among the menopausal stages ($p < 0.001$ for all), specifically, they increased from one stage to next. The chronic illness rate in the postmenopausal stage was significantly higher than the rates in the pre- and perimenopausal stages ($p < 0.01$ for both).

However, the caffeine consumption rate in the postmenopausal stage was significantly lower than in the pre- and perimenopausal stages ($p < 0.001$). There were no significant differences in marital status, working status, education, physical activity, smoking, and alcohol consumption between the menopausal stages ($p > 0.05$ for all) (see Table 1).

Total, somatic, psychological, and urogenital scores of the MRS in the peri- and postmenopausal stages were significantly higher than in the premenopausal stage ($p < 0.05$ for all). However, there was no significant difference in the scores between the peri- and postmenopausal stages ($p > 0.05$).

The percentage of women who had at least one menopausal symptom in the postmenopausal stage (99.4%) was significantly higher than in the premenopausal stage (95.0%, $p = 0.027$). Severe menopausal symptoms (MRS ≥ 17) in the postmenopausal (30.8%) and perimenopausal (19.9%) stages were significantly higher than in the premenopausal stage (5.9%, $p < 0.001$ for both); also, the postmenopausal stage was significantly higher than the perimenopausal stage ($p < 0.05$).

Severe somatic, psychological, and urogenital symptoms in the peri- and postmenopausal stages were significantly higher than in the premenopausal stage ($p = 0.017$, $p < 0.001$, and $p < 0.001$, respectively); also, severe urogenital symptoms in the postmenopausal stage were significantly higher than in the perimenopausal stage ($p < 0.05$) (see Table 2).

Table 1. Socio-demographic characteristics of women

	Premenopausal (n=119)	Perimenopausal (n=141)	Postmenopausal (n=169)	P
Age	47.5 ± 2.8	49.2 ± 4.3 [‡]	53.6 ± 5.0 ^{‡&}	<0.001
Body Mass Index	27.1 ± 4.2	28.3 ± 5.0	29.8 ± 5.5 ^{‡#}	<0.001
Parity	1.7 ± 0.7	1.9 ± 1.0	2.3 ± 1.3 ^{‡#}	<0.001
Marital Status				
Married	114 (95.8)	130 (92.2)	152 (89.9)	0.185
Single	5 (4.2)	11 (7.8)	17 (10.1)	
Working Status				
Housewife	88 (73.9)	113 (80.19)	127 (75.1)	0.076
Employed	19 (16.0)	9 (6.4)	15 (8.9)	
Retired	12 (10.1)	19 (13.5)	27 (16.0)	
Education				
≤8 years	88 (73.9)	117 (83.0)	134 (79.5)	0.203
>8 years	31 (26.1)	24 (17.0)	35 (20.7)	
Physical activity, yes	52 (43.7)	52 (37.1)	71 (42.0)	0.525
Chronic illness, yes	49 (41.2)	60 (42.6)	98 (58.0) ^{†§}	0.005
Smoking (current), yes	14 (11.8)	22 (15.6)	18 (10.7)	0.404
Alcohol (regular), yes	3 (2.5)	1 (0.7)	4 (2.4)	0.463
Caffeine (i.e. cola, coffee) consumption, yes	84 (70.6)	85 (60.3)	80 (47.3) ^{‡#}	<0.001

Mean ± Standard Deviation ; n (%) ; HRT: Hormone Replacement Treatment

[‡] p<0.001 compared with premenopausal stage, [†] p<0.01 compared with premenopausal stage

^{*} p<0.05 compared with premenopausal stage, [#] p<0.05 compared with perimenopausal stage

[§] p<0.01 compared with perimenopausal stage, [&] p<0.001 compared with perimenopausal stage

Table 2. MRS scores and severity by menopausal stages

	Total (n=429)	Premenopausal (n=119)	Perimenopausal (n=141)	Postmenopausal (n=169)	p
MRS scores					
Somatic	4.3 ± 2.8	2.7 ± 2.1	5.1 ± 2.7 [‡]	4.8 ± 3.0 [‡]	<0.001
Psychological	4.4 ± 2.9	3.5 ± 2.5	4.5 ± 2.6 [†]	4.9 ± 3.3 [†]	0.001
Urogenital	2.4 ± 2.3	1.5 ± 1.6	2.6 ± 1.8 [‡]	3.0 ± 2.8 [‡]	<0.001
Total	11.2 ± 6.4	7.8 ± 5.1	12.2 ± 5.4 [‡]	12.7 ± 7.1 [‡]	<0.001
MRS symptoms					
No (MRS=0)	9 (2.1)	6 (5.0)	2 (1.4)	1 (0.6)	0.027
Yes (MRS>0)	420 (97.9)	113 (95.0)	139 (98.6)	168 (99.4) [*]	
MRS Severity					
Severe total, ≥17	87 (20.3)	7 (5.9)	28 (19.9) [†]	52 (30.8) ^{‡#}	<0.001
Severe somatic, ≥9	37 (8.6)	3 (2.5)	14 (9.9) [*]	20 (11.8) [†]	0.017
Severe psychological, ≥7	94 (21.9)	9 (7.6)	31 (22.0) [†]	54 (32.0) [‡]	<0.001
Severe urogenital, ≥4)	113 (26.3)	12 (10.1)	34 (24.1) [†]	67 (39.6) ^{‡#}	<0.001

Mean ± Standard Deviation ; n (%) ; MRS: Menopause Rating Scale

[‡] p<0.001 compared with premenopausal stage, [†] p<0.01 compared with premenopausal stage

^{*} p<0.05 compared with premenopausal stage, [#] p<0.05 compared with perimenopausal stage

Table 3. Effect of menopausal stages on MRS severity

	Severe symptom (MRS total score ≥ 17)		Severe somatic symptom (MRS somatic score ≥ 9)		Severe psychological symptom (MRS psychological score ≥ 7)		Severe urogenital symptom (MRS urogenital score ≥ 4)	
	p	OR (95% CI)	p	OR (95% CI)	p	OR (95% CI)	p	OR (95% CI)
Age	0.202	1.03 (0.98 – 1.09)	0.786	1.01 (0.93 – 1.09)	0.288	0.97 (0.91 – 1.02)	0.237	1.03 (0.98 – 1.08)
Body Mass Index	0.213	0.96 (0.91 – 1.01)	0.210	0.95 (0.88 – 1.02)	0.290	0.97 (0.92 – 1.02)	0.383	0.98 (0.93 – 1.02)
Parity	0.004	1.36 (1.10 – 1.68)	0.004	1.46 (1.13 – 1.88)	0.155	1.15 (0.94 – 1.41)	0.424	1.08 (0.89 – 1.31)
Chronic illness								
No								
Yes	0.156	0.67 (0.39 – 1.16)	0.610	0.82 (0.38 – 1.74)	0.054	0.60 (0.35 – 1.00)	0.339	0.79 (0.48 – 1.28)
Caffeine (i.e. cola, coffee) consumption, yes								
No								
Yes	0.464	1.21 (0.72 – 2.01)	0.571	1.22 (0.60 – 2.50)	0.616	1.13 (0.69 – 1.84)	0.108	1.46 (0.91 – 2.34)

Menopausal stages

Premenopausal		1 (Reference)		1 (Reference)		1 (Reference)		1 (Reference)
Perimenopausal	0.004	3.67 (1.51 – 8.87)	0.034	4.03 (1.11-14.67)	0.001	3.68 (1.65-8.19)	0.005	2.82 (1.37-5.82)
Postmenopausal	<0.001	5.68 (2.28 – 14.13)	0.032	4.38 (1.13-16.91)	0.009	7.62 (3.30-17.58)	<0.001	5.59 (2.63 - 11.88)
<i>Nagelkerke R²</i>		<i>0.155</i>		<i>0.101</i>		<i>0.127</i>		<i>0.130</i>

Mean±Standart Deviation ; OR: Odds Ratio ; CI: Confidence Interval ; MRS: Menopause Rating Scale

Among the variables (age, body mass index, parity, chronic illness, caffeine (i.e. cola, coffee) consumption, and menopausal stages) that were entered to the multivariate logistic regression analysis only menopausal stage was found significantly related with menopausal symptom severity (see Table 3).

The risk of severe menopausal symptoms increased 3.67-fold ($p = 0.034$) in perimenopausal and 5.68-fold ($p = 0.032$) in postmenopausal stages compared to the premenopausal stage. Also, compared to the premenopausal stage, severe somatic symptom risk increased 4.03-fold in perimenopausal and 4.38-fold in postmenopausal stages; severe psychological symptom risk increased 3.68-fold in perimenopausal and 7.62-fold in postmenopausal stages; and severe urogenital symptom risk increased 2.82-fold in perimenopausal and 5.59-fold in postmenopausal stages ($p < 0.05$ for all) (see Table 3).

Discussion

In this study, we have investigated the severity of menopausal symptoms by menopausal stages in climacteric Turkish women. In this section, we will discuss our various results as they relate to previous studies.

In our study, the majority (97.9%) had at least one, and 20.3% of women had severe, menopausal symptoms (MRS total score ≥ 17). The rate of severe menopausal symptoms is close to the reference rate in Europe (24.3%) (Berlin Center for Epidemiology and Health Research). Similar to our results, Marahatta reported that approximately 20% of the women in their study had severe menopausal symptoms (Marahatta, 2012).

Chou et al. also reported that, of the Chinese women they investigated, 97.6% had at least one, and 13.8% had severe, menopausal symptoms (Chou, Wun, & Pang, 2014). In our study, 8.6% had severe somatic, 21.9% had severe psychological, and 26.3% had severe urogenital symptoms. Consistent with our results, Ojeda et al. reported that severe urogenital symptoms had the highest rate (Ojeda et al., 2011) however, Chou et al. reported that severe psychological symptoms had the highest rate (Chou, Wun, &

Pang, 2014). This difference can be explained by cultural, regional, or ethnic differences among women, and we can say that race and ethnicity may affect the prevalence and severity of menopausal symptoms.

We observed menopausal symptoms occurring at higher rates in the peri- and postmenopausal stages compared to the premenopausal stage. Consistent with the results of Chou et al., almost all of women (99.4%) have at least one menopausal symptoms in the postmenopausal stage (Chou, Wun, & Pang, 2014).

When we investigated symptom scores, we observed significantly higher total, somatic, psychological, and urogenital scores of the MRS in peri- and postmenopausal stages than in the premenopausal stage. However, no significant differences were observed in these scores between the peri- and postmenopausal stages. Similar to our results, significantly lower MRS total scores were reported in the premenopausal stage compared with the peri- and postmenopausal stages (Chou, Wun, & Pang, 2014; El Shafie et al., 2011). Although AlDughaiter et al. reported that the lowest MRS total score was during premenopause, they reported no significant differences between menopausal stages (AlDughaiter, AlMutairy, & AlAteeq, 2015). This suggests that menopausal symptom scores in peri- and postmenopausal stages were higher than in the premenopausal stage.

Studies have reported that menopausal symptom severity increases from one stage to the next (Blumel et al., 2012; Chou, Wun, & Pang, 2014). When we investigated the severity of menopausal symptoms (MRS total score ≥ 17), we observed more severe symptoms in the postmenopausal stage than in the peri- and premenopausal stages. Also, the scores were significantly more severe in the perimenopausal stage than the premenopausal stage. Chou et al. reported that severe somatic, psychological, and urogenital symptoms increased from one stage to the next (Chou, Wun, & Pang, 2014).

Consistent with their results, in our study, severe somatic, psychological, and urogenital symptoms in the peri- and postmenopausal stages were significantly higher than in the premenopausal

stage. Thus, the severity of menopausal symptoms increases from one stage to the next.

According to the results shown in Table 3, the risk of severe menopausal symptoms was 3.67-fold higher in perimenopausal and 5.68-fold higher in postmenopausal stages than in the premenopausal stage. Similarly, severe somatic, psychological, and urogenital symptoms risks were higher in the peri- and postmenopausal stages than in the premenopausal stage. Blumel et al. reported that the risk of severe menopausal symptoms (impaired quality of life) was 2.43-times higher in the perimenopausal stage and 2.89-times higher in the late postmenopausal stage when compared to the premenopausal stage (Blumel et al., 2012). Chedraui et al. reported that the risk of severe menopausal symptoms in the postmenopausal stage was 1.48-times higher than premenopausal stage (Chedraui et al., 2008).

Thus, we can say that the risk of severe menopausal symptoms in the peri- and postmenopausal stages increases when compared to the premenopausal stage. Hinrichsen et al. compared the severity of menopausal symptoms between German, Chinese, and migrant Chinese women in Germany. This group reported significantly lower severe somatic, psychological, and urogenital symptoms in Chinese women in Beijing than in German and migrant Chinese women living in Germany (Hinrichsen et al., 2014). Sharma and Mahajan reported that symptom scores (total, somatic, psychological, and urogenital) in rural women were higher than in urban women (Sharma & Mahajan, 2015). This situation can be explained by the cultural or regional differences among women. Several approaches may be used to alleviate the severity of menopausal symptoms.

A prospective randomized controlled study reported that yoga decreased the total, somatic, psychological, and urogenital symptom scores (Joshi et al., 2011). Also, regular exercise or physical activity has been shown to have a positive impact on menopausal symptoms (Agil et al., 2010; Alquaiz et al., 2014; Anderson & Seib, 2015; Tan, Kartal, & Guldal, 2014).

Limitation

This study was carried out in a menopause clinic, thus, the results may be specific to this population. Therefore, our results should be

carefully interpreted considering cultural and national differences.

Conclusion

In conclusion, almost all of the climacteric women had at least one, and 20% had severe, menopausal symptoms. The severity of menopausal symptoms increased from one menopausal stage to the next.

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