**Original Article**

# Constipation and its Effects on Quality of Life in Menopausal Women

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**Abstract**

**Objective:** This study aimed to evaluate the incidence of constipation and its effects on the quality of life in menopausal women.
**Material-Methods:** The present study, which had descriptive, cross-sectional, and community-based design, was conducted in a Family Health Center from July to October 2020. The sampling of the study consisted of 303 menopausal women. The Constipation Severity Scale and Chronic Constipation Patient Assessment Quality of Life Questionnaire were used to collect the study data.
**Results:** The total score of CSI was 17.99±14.68, and 28.62±19.62 for PAC-QOL. It was determined that 82.4% of the participants consumed fibrous foods, ate regular meals, consumed an average of 8 cups of water a day, and did sports at an average of 60 minutes per week.
**Conclusions:** It was found that women in menopause did not have constipation complaints, and constipation quality of life was high.

**Key words:** Menopausal women, constipation, quality of life.

## Introduction

Menopause is the end of the menstrual cycles (World Health Organization, 1996) in a woman not having menstruation for one year as a result of decreased estrogen and progesterone hormone levels due to decreased ovarian function (Erkin et al. 2014; Gungor et al. 2014; Takahashi & Johnson, 2015). As a result, a fertile woman faces a non-fertile period in her life.

Just like in the other periods of life, there are biological, psychological, and social changes during menopause (Unsal & Yigitoglu, 2015; Tumer & Kartal, 2018). Most women experience symptoms of the gastrointestinal tract in this period, such as hot flashes, depressive mood, vaginal dryness, sleep disorders, osteoporosis, cardiovascular diseases, urogenital system symptoms, constipation, diarrhea, abdominal pain and dyspepsia (Abay & Kaplan 2015; Callan et al. 2018).

Constipation is characterized by a feeling of incomplete defecation, decreased frequency of defecation, hard stool, and strain (Huang Ling et al., 2020; Orhan et al., 2015; Dantas et al., 2020). The study conducted by Sumida et al. (2017), it was reported that approximately 30% of the general population experienced constipation problems in their lifetimes (Sumida et al., 2017). In Turkey, according to the results of a population-based study, the incidence of constipation varies between 22-40% (Orhan et al., 2015). Many factors, such as ethnicity, lifestyle factors (such as degree of physical

activity), diet, age, gender, hormones, socio-economic status, and geographical location are effective in the formation of constipation (Ji-Eun Oh et al., 2013; Camilleri et al., 2017; Callan et al., 2018). Studies showed that female gender and advanced age are among the most obvious risk factors in the development of constipation (Higgins& Johanson, 2004; Johanson & Kralstein, 2007; Orhan et al., 2015; Sumida et al., 2017; Camilleri et al., 2017; Eliasvandi et al., 2019). In the study conducted by Ji-Eun Oh et al. (2013), they suggested that the estrogen and progesterone hormones, which directly interfere to the gastrointestinal motility, were among the main reasons of the reason why constipation is more frequent in women (Ji-Eun Oh et al., 2013). Another study reported that constipation developing in menopause was not related to estrogen and progesterone hormone, and developed because of stress and cortisol hormone (Callan et al., 2018). In addition to these factors that affect constipation, there are also data in the literature speculating that regular exercise, fibrous meals in the diet, and adequate daily water consumption (8-10 glasses) have effects on preventing and easing the constipation during menopause (Dukas et al.,2003; Sadowska & Remiszewska, 2014; Tantawy et al., 2017; Fitriana et al., 2017; Dreher, 2018).

The biological, psychological, and social changes in menopause significantly affect the lifestyle and quality of life of a woman (Erkin et al., 2014; Abic & Yilmaz, 2020; Abay & Kaplan, 2015; Meeta et al., 2020). When women complain about constipation in this period, it can affect the physical, mental and social well-being of women, negatively affecting the quality of life developing due to constipation. This condition reduces individual productivity and creates a significant burden on the society (Orhan et al., 2015; Sumida et al., 2017; Eliasvandi et al., 2019; Dantas et al., 2020). It is important that healthcare professionals (i.e. midwives, nurses and obstetric physicians), who play key roles in improving women's health detect the negative symptoms that may occur with menopause and disrupting one's quality of life, and provide solutions to these problems in the early period.

In the literature, the number of studies evaluating the prevalence of constipation in menopausal women is quite small (Callan et al., 2018; Huang Ling et al., 2017). No studies that evaluated the effect of constipation on quality of life in menopausal women were detected. This present study was conducted as a descriptive, cross-sectional, and community-based study to evaluate the incidence of constipation in menopause, and whether constipation has effects on the quality of life of menopausal women.

## Methods

This study, which was in descriptive, cross-sectional and community-based design, was conducted between July 8 and October 31, 2020 in Kırklareli city, Pınarhisar County in Turkey, at Family Health Center 2. The approval was obtained for the study from Kırklareli University Health Sciences, Clinical Researches Ethics Committee (Reference number: 69456409-199-e.9092, Date:23/06/2020) and written permission was obtained from Kırklareli Provincial Health Directorate (Reference number: 34, Date: 07/07/2020). All the procedures were performed in line with the rules about studies involving human participants by considering the ethical standards of the research committee. Written and verbal consent was obtained from each participant participating in the study.

## Sampling

The number of the menopausal women between the ages of 40 and 65 registered in Family Health Center 2 in X Counrty of X city in Turkey was 1422. In the present study, the sampling size was calculated by using the sampling method with a known universe. The minimum number of sampling was calculated to be 303 by using the Raosoft program (http://www.raosoft.com/samplesize.html), Type I error amount was taken as 0.05, and the power of the test was 0.95 ($\alpha$= 0.05, 1-$\beta$= 0.95).

***Inclusion criteria:*** Being between the ages of 40 and 65, and in menopause period (not having menstrual bleeding for the last 1 year) (WHO, 1996; Cooper & Sandler, 1998, Mondul et al., 2005), volunteering for the study, responding to the surveys and scale forms completely

***Exclusion criteria:*** Regular use of drugs increasing constipation (e.g. Ca, Fe derivatives), having chronic constipation or intestinal problems, e.g. sigmoid colon, using one of the pharmacological or non-pharmacological methods to decrease constipation, having any problems that prevent communication (e.g. not knowing Turkish, having disabilities in hearing, speech and comprehension abilities), and having psychiatric treatment (pharmacotherapy or psychotherapy).

**Data collection tools**

**Information Form**

This form, which was developed by the researchers in line with the literature, consisted of a total of 12 questions on the socio-demographic characteristics, and diet, liters of water drunk a day, status of doing sports, the shape of the toilet used, and toilet habits.

**Constipation Severity Instrument (CSI)**

This scale, which was developed by Varma et al. to evaluate the frequency and intensity of defecation, problems/difficulty in defecation, and symptoms of constipation, had 3 sub-dimensions: ***"obstructive defecation", "colonic inertia", and "pain"*** (Varma et al.2008). The minimum and maximum scores of each of these 3 sub-dimensions are 0 to 28, 0 to 29 and 0 to 16, respectively. For this reason, the lowest and highest score that can be received from the scale is 0 and 73, respectively. The scale has no cut-off scores. The higher the score received from the scale, the more severe the problem of constipation is. The Turkish validity and reliability study of the scale was conducted by Kaya and Turan in 2010 (Kaya & Turan, 2010). Written permission was obtained for the use of the scale. Cronbach's Alpha Value of the scale was 0.92.

**Chronic Constipation Patient Assessment Quality of Life Questionnaire (PAC-QOL):** This questionnaire, which was developed by Marguis, Loge and Dobis in 2005, is a 5-Type Likert consisting of 28 items. The sub-dimensions of the scale are "Worries and concerns", "Physical discomfort", "Psychosocial discomfort", and "Satisfaction". The lowest score that can be received from the scale and the highest score is 28 to 140, respectively. The scale has no cut-off scores. The higher the score that may be received from the scale, the negatively impacted the quality of life is. The Turkish validity and reliability study of the scale was conducted by Dedeli et al. (2007) (Dedeli et al, 2007). Written permission was obtained for using the scale. The Cronbach's Alpha Value of the scale was 0.91.

**Data collection:** Firstly, the Descriptive Information Form was used to select the women who met the study criteria. The Constipation Severity Instrument (CSI) and Chronic Constipation Patient Assessment Quality of Life Questionnaire (PAC-QOL) were applied to evaluate the constipation quality of life. The Descriptive Information Form and the scales used in the study were applied by the researcher for an average of 25 minutes by using the face-to-face interview method with the participants.

**Evaluation of data**

The SPSS 22.0 Software Program was used in the analysis of the data. The Shapiro-Wilk Test was used to examine whether the distribution of the variables in this study was normal. The results of the analysis are given as mean, standard deviation, median, minimum and maximum for quantitative data, and frequency (percentage) for categorical data. Variability analysis, and Spearman Correlation Analysis were used to evaluate the differences between the variables. A ***P*** value of less than .05 was accepted as statistically significant.

**Results**

The socio-demographic characteristics of the menopausal women (n=306) who were included in the study are given in Table 1. The mean age of the women was 56.72±5.27 (range: 43-73 years). A total of 71.9% of the women who participated in the study were primary school graduates (n=220), 78.1% were housewives (n=239), and 60.8% had chronic conditions (n=186). The participants of the study were actively involved in walking or jogging for an average of 56.86±114.41 minutes (min-max: 0-540 min) a week. The daily mean number of meals of the participants was 2.66±0.59 (min-max: 1-6) for the main meal, and 1.24±0.99 (min-max: 0-4) for intermediate meals. It was found that 82.4% consumed fibrous meals (n=252), and the mean amount of water consumed per day was 7.58±3.5 cups (min-max: 1-25). The question on the toilet habits of the women and how they used toilets was that 12.1% sat in the toilet for at least 15 minutes a day at the same time with or without the desire to defecate during the day (n=37), and 87.9% did not have this habit (n=269). It was also found that 69.6% used European-style toilets (n=213), 27.1% used Turkish-style toilet (n=83), and 10% used both toilets (n=10) (Table 1).

**Table 1.Socio-demographic and descriptive characteristics of the women in the menopause period (n=306).**

| | | n | % |
|---|---|---|---|
| **Age groups (years)** | 43-55<br>56-73 | 133<br>173 | 43.5<br>56.5 |
| **Education** | Illiterate<br>Primary school<br>High school<br>University | 8<br>220<br>65<br>13 | 2.6<br>71.9<br>21.2<br>4.2 |
| **Occupation** | Housewife<br>Working | 239<br>67 | 78.1<br>21.9 |
| **Chronic disease** | Yes<br>No | 186<br>120 | 60.8<br>39.2 |
| **Fibre food** | Yes<br>No | 252<br>54 | 82.4<br>17.6 |
| **Sitting on the toilet for at least 15 minutes a day** | Yes<br>No | 37<br>269 | 12.1<br>87.9 |
| **What type of toilet do you use?** | Turkish-style toilet<br>European-style toilets<br>Both of them | 83<br>213<br>10 | 27.1<br>69.6<br>3.3 |
| | **Mean±sd** | **Min** | **Max** |
| **Main meal** | 2.66±0.59 | 1 | 6 |
| **Intermediate meals** | 1.24±0.99 | 0 | 4 |
| **Amount of water consumed per day?** | 7.58±3.5 | 1 | 25 |
| **How many minutes do you exercise on average in a week? (walking or jogging)** | 56.86±114.41 | 0 | 540 |

**Table 2. The women's scores for CSI, PAC-QOL, and their subscales (n=306)**

| | Mean. ± | SD | Min | Max |
|---|---|---|---|---|
| **PAC-QOL** | | | | |
| Worries and concerns | 7.40 | 9.11 | 0 | 44 |
| Physical discomfort | 3.16 | 3.75 | 0 | 16 |
| Psychosocial discomfort | 6.41 | 6.94 | 0 | 32 |
| Satisfaction | 11.65 | 5.85 | 0 | 50 |
| PAC-QOL total score | 28.62 | 19.28 | 0 | 100 |
| **CSI** | | | | |
| Obstructıve defecation | 9 | 7.42 | 0 | 28 |
| Colonic Inertia | 7.34 | 6.27 | 0 | 27 |
| Pain | 1.63 | 2.96 | 0 | 16 |
| CSI total score | 17.99 | 14.68 | 0 | 71 |

PAC-QOL: Chronic constipation patient assessment quality of life questionnaire CSI: Constipation Severity Scale

**Table 3. The relationship between scores for PAC-QOL, and CSI and their subscales (n=306)**

| | CSI Total<br>r p | Obstructıve defecation<br>r p | Colonic Inertia<br>r p | Pain<br>r p |
|---|---|---|---|---|
| **PAC-QOL Total** | 0.551 0.000 | 0.515 0.000 | 0.499 0.000 | 0.387 0.000 |
| Worries and concerns | 0.595 0.000 | 0.542 0.000 | 0.484 0.000 | 0.628 0.000 |
| Physical discomfort | 0.609 0.000 | 0.565 0.000 | 0.538 0.000 | 0.499 0.000 |
| Psychosocial discomfort | 0.400 0.000 | 0.424 0.000 | 0.366 0.000 | 0.449 0.000 |
| Satisfaction | -0.054 0.346 | - 0.033 0.571 | -0.192 0.001 | -0.063 0.271 |

r: Sperman correlation analysis
PAC-QOL: Chronic constipation patient assessment quality of life questionnaire
CSI: Constipation Severity Scale

The total scores and sub-dimensions of PAC-QOL and CSI are shown in Table 2. The total score of PAC-QOL was 28.62±19.28 (min-max: 0-100) for all participants. It was found that 65.4% of all women had Worries and concerns, 61.7% physical discomfort, 71.6% psychosocial discomfort, and 89.5% Satisfaction. The mean constipation severity scale total scores of all women was 17.99±14.68 (min-max: 0-17).

The PAC-QOL showed moderate correlation in positive direction with the total score, subscale scores, CSI total score, and sub-dimension scores (Table 3). The Worries and concerns, Physical discomfort, and Psychosocial discomfort sub-dimensions in PAC-QOL Scale, and the Obstructive defecation, Colonic Inertia and Pain sub-dimensions in CSI-scale were had a positive, moderate, and high correlation; and there was a negative and weak correlation between the Satisfaction sub-dimension on PAC-QOL Scale, CSI total score, and Obstructive defecation, Colonic Inertia and Pain sub-dimensions of CSI scale (Table 3).

**Discussion**

In this community-based study, the incidence of constipation and the effects of constipation on quality of life were investigated in menopausal women. In the present study, it was determined that women did not experience constipation during menopause, and the constipation quality of life was high. This finding will contribute to the relevant international literature regarding the incidence of constipation in menopausal women.

The menopausal age generally varies between the ages of 40 and 65 in the world (Cooper & Sandler, 1998, Mondul et al., 2005). It is 48 in Italy (Amore et al., 2007), and 48.7 in Thailand (Peeyananjarassri et al., 2006). The average is 50.5 in the United States and Asia, and 50.1-52.8 in Europe (Palacios et al., 2010). The percentage of menopausal women in Turkey rises from less than 1% for women in early twenties to 45% for ages 48-49 (TDHS, 2018; TUIK, 2020). The mean age of menopausal women who constituted the sampling of the study was 56.72±5.27 years. The results are similar to the literature.

Menopausal women may have complaints of the gastrointestinal tract, hot flush, depressive mood, urogenital system, constipation and diarrhea (Abay & Kaplan, 2015; Callan et al., 2018). Although the effect of gastrointestinal system complaints such as constipation and diarrhea, which are common in menopausal women compared to men, is not known in the literature, these are caused by estrogen and progesterone hormones and, the incidence of these complaints increases with the progression of female age (Gonne et al., 2006; Ji-Eun Oh et al., 2013; Callan et al., 2018). In the study conducted by Callan et al. (2018) with 291 women in menopause period, it was found that hormones did not play key roles in the constipation or diarrhea of menopausal women; on the contrary, stress perception, tension and anxiety increased the severity of constipation or diarrhea (Callan et al., 2018). Similarly, in the study of Dukas et al. (2003), it was found that there were no differences in the incidence of constipation in women who used hormones in the postmenopausal period than in women who did not use hormones (Dukas et al., 2003). Contrary to these studies, Dantas et al. (2020) conducted a study with 195 pre-menopausal women, and found that women had constipation at a rate of 35.4% between the ages of 25 and 39, and experienced hemorrhoids, pain and sexual dysfunction due to constipation (Dantas et al., 2020). When the place where the study was conducted is examined geographically, it is located in the west of Turkey, where living conditions are at a good level. It may be considered that since 78.1% of the participants in the study were housewives and did not experience the stress of work life may have caused the lack of constipation complaints.

It is recommended to increase the consumption of fibrous/pulp nutrients in the diet, to have sufficient daily water consumption (8-10 cups with a volume of at least 200 ml), and regular exercise to reduce the formation of constipation (Dukas et al., 2003; Sadowska & Remiszewska, 2014; Tantawy et al., 2017; Fitriana et al., 2017; Dreher, 2018). In the study of Dukas et al. (2003) conducted with 3327 women, it was found that the incidence of constipation was less in women who did regular physical exercise and consumed more fibrous foods during the postmenopausal period (Dukas et al., 2003). Sadowska and Remiszewska (2014) conducted a descriptive study with 100 women who were between the ages of 45 and 65 in the perimenopausal period, and reported that the risk of constipation might increase as a result of poor daily water consumption and lack of regular meals (Sadowska & Remiszewska, 2014). Tantawy et al. (2017) found conducted an empirical study to

reduce constipation in middle age and premenopausal women, and found that physical activity reduced constipation and lowered PAC-QOL scores (Tantawy et al., 2017). According to this study, it was found that participants consumed fibrous foods (82.4%), had a diet pattern of 3 main and 1 intermediate meals (2.66±0.59, 1.24±0.99), consumed water at an average of 8 cups per day (7.58±3.5), and did 60 minutes sports per week at an average (walking or jogging). Since the CSI scores (17.99±14.68) and PAC-QOL scores (28.62±19.28) of the participants were quite low, it was determined that women did not experience constipation, and had high constipation quality of life. The study results were parallel to the results of other studies.

**Conclusions:** As a result of the present study, it was found that constipation complaints were not detected in menopausal women, and constipation did not have negative effects on the quality of life of menopausal women. It was also found that 82.4% of the women who were included in the study group consumed fibrous foods, ate regular meals, consumed an average of 8 cups of water a day, and did sports for an average of 60 minutes per week (walking or jogging). In the light of the study results, prospective studies may be recommended with larger groups living in different geographical regions.

**Limitations:** The results of the study, which was conducted in descriptive, cross-sectional, and community-based design, cannot be generalized to the universe, because these results represent only these women. The first limitation of the study was that the study was conducted with women who applied to primary health care institutions, the lifestyle, eat regular meal status, water consumption, and exercise-free status of the women were evaluated, and estrogen and progesterone hormone levels could not be evaluated. The second limitation of the study was that the sampling size was small. The third limitation was that inclusion in the study was performed according to the volunteering principle. This caused the duration of the study to increase.

**Acknowledgements:** During the data collection phase, X Family health center and X Provincial Health Directorate obtained written permission and consent from the participants after explaining the purpose and objective of the study.

**Acronym CSS:** The Constipation Severity Scale PAC-QOL: Chronic Constipation Patient Assessment Quality of Life Questionnaire

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