THE INFLUENCE OF ETHNICITY ON THE SYMPTOMS OF POST-REPRODUCTIVE WOMEN

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Abstract

Theoretical basis: The menopause is a period in women's lives when their ability to reproduce decreases, and as it gradually ends, women move into the so-called post-production phase. In this transitional phase, women are at risk of developing various symptoms, which are affected by more factors than only a deficiency of ovarian hormones (estrogens). Many recent international studies have shown the influence of other factors on women's health during this period, such as the family environment, interpersonal relationships, employment, and ethnic and cultural aspects.

Goal: The literature review is devoted to the research of published studies dealing with the influence of ethnicity and culture on the occurrence of symptoms and health of women in the post-reproductive phase of their lives.

Methods: We searched for the included studies using the method of content analysis. The scientific databases focused on women's health, and studies published between 2017 and 2022 were found in databases such as PubMed, Scopus, ScienceDirect, and EBSCO. We used the keywords "ethnicity", "menopause", "symptom", "influence", "woman", and the Boolean operator "AND". The content analysis took place from January to February 2022. After checking the eligibility and relevance of studies, we included and analysed eight articles.

Results: It is clear from the literature review results that ethnic and cultural factors are involved in vasomotor, somatic, and cognitive symptoms in women with estrogen deficiency.

Conclusions: The information obtained can be helpful, and used in providing individual holistic care to women of different ethnicities in both primary care and inpatient health facilities.

Keywords: *Culture; Ethnicity; Factor; Influence; Menopause; Symptom; Woman*

REVIEW ARTICLE

INTRODUCTION

Fait (2013) views menopause (menopause, perimenopause) as a transition between the fertile age of women and the onset of senium, in which ovarian function decreases and subsequent bodily and psychological changes occur. Physiologically, menopause occurs between the ages of 40 and 60. Menopause is characterized by the end of menstruation, which is affected by the immediate loss of ovarian follicular function. Menopause is diagnosed 12 months after the last menstrual period (Dalal and Agarwal, 2015; Mishra, 2017). Gonçalves et al. (2016) report biological factors (hypoestrogenism), mental factors, lifestyle factors, culture, and the envi-

ronment as causes influencing symptoms and changes in women experiencing menopause. Utian and Woods (2013) also see the onset of menopause and the severity of menopausal symptoms in the influence of genetic factors, the age of women at menarche, the impact of ethnic origin and the influence of geography. The menopausal symptoms that occur during the transition from the reproductive to the post-reproductive period can be unpleasant, severe, and affect normal daily activities (Resmi et al., 2020). Regarding symptomatology, like Fait (2013), Čepický (2011) and Roztočil et al. (2011) distinguish between vegetative (acute symptoms), organic (subacute symptoms), and metabolic syndrome (chronic symptoms) in postmenopausal women. Acute symptoms mainly include hot flushes, night sweats, emotional instability, sleep disorders, and cardiovascular and neurological symptoms (palpitations, nausea, headaches, dizziness). Ovarian atrophy, urogenital atrophy, uterine shrinkage, vaginal mucosa drying, and weakening of the pelvic ligament tone are considered the primary anatomical change in women under the influence of estrogen deficiency (Dostál and Turková, 2017; Fait, 2013; Portman and Gass, 2014). Extragenital changes include changes in body weight (in terms of increase), redistribution of subcutaneous fat (especially in the abdomen), decreased connective tissue elasticity, increased skin pigmentation, flaking and sagging (Fait, 2013; Simočková, 2011). Degeneration of elastic and collagen fibres occurs, the skin is dry, wrinkled, and easily vulnerable, and the blood vessels show signs of sclerosis (Dostál and Turková, 2017). Dostál and Turková (2017) include osteoarthropathy and osteoporosis in their chronic symptoms. Fait (2013) adds osteoporosis to the long-term and significant changes. Menopause affects the morbidity and mortality of older women.

We asked the research question: "Do ethnic and cultural aspects affect the onset of menopause, and the nature and severity of menopausal symptoms in women with estrogen deficiency?"

This article aims to provide comprehensive information on published studies dealing with the influence of ethnic and cultural factors on symptoms and women's health in the post-production phase of their lives.

MATERIALS AND METHODS

This article is a literary review. We used the content analysis of studies published in professional licensed electronic databases. We collected data from PubMed, ScienceDirect, Scopus, and EBSCO. We used the predefined keywords "ethnicity", "factor", "menopause", "culture", "influence", "symptom", "woman," using the Boolean operator "AND". Two researchers took part in sorting the articles found. One of the selection criteria was the design of research articles. We also used the recommended procedure for a literary review, i.e., the PRISMA structure (Moher et al., 2009). We found 752 studies during the first search phase between January and February 2022. There were 17 sources in the EBSCO database, 218 sources in the PubMed database, 116 articles in the Scopus database, and 401 articles in the ScienceDirect database. In the next phase of the analysis, we reduced the number of studies by eliminating duplicate sources, those that did not address the issue, and sources that did not meet our criteria. Other selection criteria were that studies had to be published between 2017 and 2022 and be full texts. The resulting number of relevant sources was 8 (Fig. 1).

The obtained studies were subsequently coded to map all aspects related to the issue of the influence of ethnicity on the symptoms of post-reproductive women.

We obtained additional information by analysing professional domestic and foreign monographs related to the issues presented. We used the acquired significant aspects, mapping the area we researched for the needs of the survey study, and subsequently compared them.

RESULTS AND DISCUSSION

According to the validity, quality of information and hierarchy of scientific evidence, the selected studies were included in the secondary analysis (Im et al., 2017, 2018, 2020); longitudinal cohort study (El Khoudary et al., 2019); a cross-sectional study (Munhoz et al., 2018; Resmi et al., 2020; Zhang et al., 2019); a cross-sectional observational study (Marlatt et al., 2020). All studies were performed using the quantitative method (Table 1).

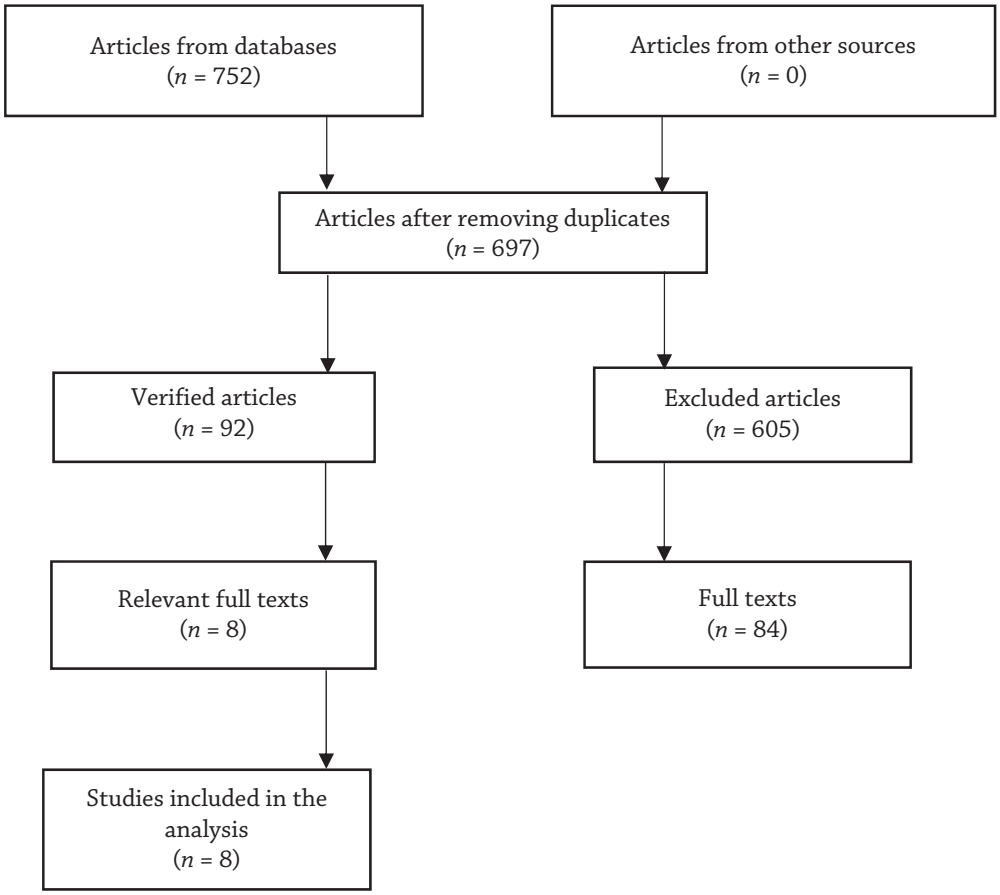

Fig. 1 – Classification diagram by the PRISMA structure

In population studies that looked at women with their menopausal experiences concerning ethnic (cultural) influences, the numbers of respondents ranged from 98 to 3,302. 5,732 women contributed data to the analysed eight studies.

The influence of ethnicity and culture on somatic and psychosocial symptoms of middle-aged women

In their secondary analysis, Im et al. (2017) examined the association between immigration and ethnic influences and the occurrence of acute symptoms (sleep disturbance) that occurred in four major ethnic groups of middle-aged menopausal women living in the United States. According to the authors of this study, this secondary data analysis is unique because it is based on the results of their original studies dealing with ethnic groups across the United States.

The original studies and this secondary analysis included non-Hispanic Caucasian, Hispanic, non-Hispanic African American, and non-Hispanic Asian women. The research group consisted of 1,254 respondents. Only racial/ethnic identity associated with sleep-related symptoms was reported in the secondary analysis. The primary characteristics of women were checked, as well as their health and menopausal status. Aspects Im et al. (2017) found in the study partly support theories about the selective nature of immigration and the positive relationship between immigration and women's health.

Table 1 – Included studies in the analysis

Study/research type	Author/ publishing year	Country/ area	Research period	Ethnicity	Research goal	Repondents	Symptoms/ assessed aspects
Secondary analysis Quantitative research	Im et al. (2017)	USA	2005–2013 (primary study)	non-Hispanic Caucasian, Hispanic, non-Hispanic African American, non-Hispanic Asian women	to examine ethnic differences in the incidence of symptoms in middle-aged women	1,245 women; 40–60 years old	poor sleep, disturbed sleep
Secondary analysis Quantitative research	Im et al. (2020)	USA	2005–2013 (primary study)	non-Hispanic Caucasian, Hispanic, non-Hispanic African American, non-Hispanic Asian women	to determine the influence of culture and ethnicity in connection with immigration and cognitive symptoms of women	1,054 women; 40–60 years old	difficulty concentrating, forgetting
Secondary analysis Quantitative research	Im et al. (2018)	USA	2005–2013 (primary study)	non-Hispanic Caucasian, Hispanic, non-Hispanic African American, non-Hispanic Asian women	to identify groups of middle-aged women by their cognitive symptoms concerning other symptoms	1,054 women; 40–60 years old	cognitive symptoms, hot flushes, night sweats
Longitudinal cohort study Quantitative research	El Khoudary et al. (2019)	USA (Boston, Chicago, Pittsburgh, Detroit, Oakland, Los Angeles, Hudson County)	1996–2017	Caucasian, African American, Japanese, Chinese, Hispanic women	to define menopause, and characterise physiological and psychosocial symptoms and health consequences in an ethnically and racially diverse sample group of middle-aged women	3,302 women; 42–52 years old	disturbed sleep, sexual discomfort, mental symptoms (anxiety, depression)
Prospective observational cohort study Quantitative research	Marlatt et al. (2020)	USA	1998–2006	African American, Caucasian women	to assess longitudinal assessment of changes in body composition and cardiometabolic risk during menopause	161 women; 43 years old	abdominal adiposity increases, obesity, cardio-metabolic risk
Cross-sectional study Quantitative research	Munhoz et al. (2018)	Brazil	2010–2014	European/Caucasian, African, Asian women	to compare peripheral bone mineral density changes in postmenopausal women	517 women (primary sample group); 150 women (final sample group); average age 64 years old	body mass index, bone mineral density, mandibular cortical index

Table 1 *(continued)*

Study/research type	Author/ publishing year	Country/ area	Research period	Ethnicity	Research goal	Repondents	Symptoms/ assessed aspects
Cross-sectional study Quantitative research	Resmi et al. (2020)	southern India, countryside of Kerala	February to May 2015	Indian women	to determine the prevalence and factors associated with menopausal symptoms in women	400 women; 40–60 years old	hot flushes, night sweats, joint pain, urogenital symptoms, mental symptoms
Cross-sectional study Quantitative research	Zhang et al. (2019)	China (Yunnan province – 67 villages)	March to April 2012	Chinese women Mosuo (matriarchal structure), Chinese women Han (patriarchal structure)	compare the onset of menopause, menopausal symptoms, attitudes of women to menopause, to maintaining health	Mosuo 51 women; Han 47 women; 40–60 years old	muscle pain, headaches, palpitations, fatigue

According to the theory of the selective nature and positive effects of immigration on health, immigrant ethnic groups tend to be healthier, more resilient, and better able to respond to potential health risks than women who consistently live in the United States. Previous studies supported these results in middle-aged menopausal women (Hale et al., 2014; Pien et al., 2008). The findings of the secondary analysis confirm that ethnic/racial identity (rather than immigration status or length of stay in the US) could be a significant sleep-related factor in middle-aged women during their menopausal transition (Im et al., 2017). Based on the obtained data, the authors drew a conclusion from the study on the relationship between ethnicity and sleep disturbance – a proposal for further research with larger sample groups of women from ethnic minorities (Im et al., 2017).

Further studies by Resmi et al. (2020) report results on the prevalence of individual menopausal symptoms. Somatic symptoms were present in 73% of women (urogenital symptoms in 58.75%; joint pain in 35.8% of women), and mental symptoms were present in 48.5% of respondents (29.5% of women reported mood swings). Sharma et al. (2016) also previously conducted research on 75 Indian rural women in north-western India in Himachal Pradesh State, comparing age at menarche, and the beginning of menopause. Early and late age age in menarche was associated with early and late age at the onset of menopause. According to Sharma et al. (2016), Indian women have a lower average age at menopause than European women, and there was a clear difference in menarche age among South Asian women. Compared to European women, Indian women complained less about menopausal symptoms concerning sex life.

Marlatt et al. (2019) based their study on the assumption that obesity disproportionately affects more women than men, and that the loss of ovarian function in women during menopause coincides with weight gain, increased abdominal adiposity, and deterioration in metabolic health. They further supported their research by saying that ethnic differences in the prevalence of obesity-associated menopause were not adequately understood. The study was conducted in the USA and examined 161 women (aged

43 years) with a body mass index of 20–40 kg/m² who had not yet gone through menopause. In women, abdominal adipose tissue was measured annually, fasting blood glucose and lipids were measured, and insulin sensitivity was calculated. Finally, 94 women were included in the study: 25 respondents were African American women, and 69 were Caucasian. The study was carried out with continuous measurement of the mentioned parameters in women of the two ethnic groups, both premenopause and postmenopause. It was initially intended to take place between 1998 and 2002. However, it had to be extended until 2006, as not all the surveyed women were postmenopausal and could not be assessed according to the criteria. Marlatt et al. (2020) concluded that before menopause, African American women weighed more than Caucasian women, and that African American women had higher blood pressure than Caucasian women. African American women had more abdominal adipose tissue before menopause. In Caucasian women, body weight increased significantly at the onset of menopause. In the postmenopause period, increased abdominal adipose tissue and increased cardiometabolic risks were only observed in Caucasian women (Marlatt et al., 2020). This finding is inconsistent with Wei et al. (2015), who found and declared weight gain at the age of 45–65 years in African American women more than Caucasian women.

The researchers, Munhoz et al. (2018), aimed to compare changes in peripheral bone mineral density in postmenopausal women who lived in Brazil and belonged to a different ethnicity. The primary research group of 517 women underwent panoramic X-rays and densitometric examination of the forearms (for osteoporosis screening). They measured height, weight, and body mass index. After excluding respondents who did not meet the required research criteria, the final sample group included 150 women. 75 were European/Caucasian, 31 were Asian, and 44 were African. Munhoz et al. (2018) confirmed that old age, low body mass index, and European/Caucasian and Asian (versus African) ethnicity were associated with low bone density. Women's age was also associated with bone density and mandibular cortical index. Munhoz et al. (2018) followed up on previous international studies that indicate postmenopausal women are at higher risk of osteoporosis, as bone loss increases with the approaching last menstrual period (Chapurlat et al., 2000) and worsens in the perimenopausal phase (Bergström et al., 2005). The onset of osteoporosis also varies according to the ethnic origin of women (Barrett-Connor et al., 2005; Cauley, 2011; Richards et al., 2005).

El Khoudary et al. (2019) conducted an extensive SWAN (Study of Women's Health Across the Nation) study between 1996 and 2017, which included an ethnically and racially diverse sample group of women. The study was conducted across the United States at seven locations (Boston, Chicago, Pittsburgh, Detroit, Los Angeles, Oakland, and Hudson County). The research group experiencing the menopause transition, characterised by physical and psychosocial symptoms and their consequences, included 3,302 women aged from 42 to 52 years. In each area, interviews were conducted with women of all selected participating ethnicities (Caucasian – 1,550; African American – 935; Japanese – 281, Chinese – 250; Hispanic – 286). SWAN helped the authors to orientate better in the issue of the menopause transition. Due to the long duration of SWAN, respondents reached a mature age during the study. Thus, the SWAN authors have had the opportunity to examine the relationship between menopause transition and health measures in middle-aged women and the health of more mature women. This previously unavailable research exploring the relationship between menopause, middle age, and more mature age, will make it possible to identify beneficial interventions that can contribute to the optimal health of women of different ethnicities as they age (El Khoudary et al., 2019).

Zhang et al. (2019) compared the menopausal symptoms of a matriarchal Chinese minority of women living in China "Mosuo" (51 respondents) with the patriarchal Chinese majority of women "Han" (47 respondents). The respondents were aged 40–60. A study by Chinese researchers compared the attitudes of selected ethnic groups to the onset of menopause, menopausal symptoms, and women's attitudes to maintaining their health. Zhang et al. (2019) supported the claims of other authors whose studies are also based on the conclusion that, in addition to changes in hormonal levels, women's experi-

ence is influenced by family structure, professional status, interpersonal relationships, and culture and ethnic factors (Bell, 2013 Sievert, 2014). Zhang et al. (2019) obtained information on the experience of menopause in women under the influence of different cultures in connection with different views on ageing and the roles and status of women in society. The Kupperman Menopause Index (KMI), the Self-Rating Scale of Illness Conception and Health Seeking Behavior (SSICHSB), and the Menopause Attitude Questionnaire (MAQ) were used to determine menopausal problems. Although the size of the research group of respondents was limited, the research results show that physical symptoms and psychosocial hardship have deep roots in culture. "Mosuo" and "Han" are different populations. "Mosuo" women showed less interest in the issue of menopause and the associated menopausal symptoms. Their attitudes and interest in health were not as pronounced as in "Han" women. "Mosuo" women expressed fewer physical symptoms and minor psychiatric changes associated with menopause (Zhang et al., 2019).

Cognitive symptoms of menopausal women in connection with immigration, ethnic, and cultural influences

Im et al. (2020) used data from the two national internet surveys mentioned above for middle-aged women living in the US (1,054 women) – non-Hispanic Caucasian, Hispanic, non-Hispanic African American, and non-Hispanic Asian women (Im et al., 2010, 2012). Data from previous research were used for this secondary analysis of cognitive symptoms (Im et al., 2020). Other studies focused on menopause have confirmed that the transition from the reproductive to the post-reproductive phase in women's lives is a natural process, during which the prevalence of cognitive symptoms correlates with menopausal status and estrogen depletion (Rönnlund et al., 2015). A relatively large number of studies have been conducted on cognitive symptoms in women, but they have not addressed many cultural influences and associations between immigration, ethnic factors, and cognitive symptoms (Im et al., 2020). According to the results of the secondary analysis, Im et al. (2020) mention that respondents (immigrants) who expressed their racial/ethnic identity, expressed lower severity scores for individual cognitive symptoms compared to women who have always lived in the United States (did not emigrate). Thus, this confirmed previous findings and the statement of Im et al. (2017) on the positive impact of immigration on the health of middle-aged women (Im et al., 2020).

Im et al. (2018) published additional partial data from their original large-scale study. The results of the published article are focused on the cognitive symptoms of a defined research group of 1,054 women (non-Hispanic Caucasian women – 316, Hispanic women – 255, non-Hispanic African American women – 250, non-Hispanic Asian women – 233). The authors report the results of the Cognitive Symptom Index for Midlife Women (CMW), which includes 20 items on cognitive symptoms in three domains (primary, secondary, and tertiary). Primary symptoms directly reflect cognitive changes in women (forgetfulness, concentration problems); secondary symptoms are significantly associated with changes in cognitive functions (depression, anxiety); tertiary symptoms are those that can affect cognitive functions (hot flushes, night sweats). The significant associations of ethnicity with the cognitive symptoms that resulted from the study are consistent with the literature on menopausal symptoms. The authors of other studies – Im (2003), Im et al. (2015) and Gold et al. (2006), report that Caucasian women have a higher overall number and symptom severity score they during the transition from the reproductive to post-reproductive phase, while Asian women have a lower number and symptom severity score than other ethnic groups of women (Gold et al., 2006; Im, 2003; Im et al., 2015).

Influence of ethnicity and culture on vasomotor symptoms of women with oestrogen deficiency

The study focused on ethnicity-related effects on menopause and vasomotor symptoms was conducted on 400 women aged 40–60 who lived in southern India in rural Kerala (Resmi et al., 2020). The average age of menopause in Asian women was 48.79 years, which correlated with another study conducted on the Asian ethnic group (Satoh and Ohashi, 2005). Resmi et al. (2020) showed that the preva-

lence of classic menopausal vasomotor symptoms in Indian women was lower compared to research on Caucasian women. Factors such as age, occupation, history of premenstrual syndrome, and menopausal status have been closely associated with vasomotor symptoms (Resmi et al., 2020).

These results are supported by previous studies, which reported that Asian women have a lower risk of vasomotor symptoms than other ethnic groups, especially regarding hot flushes and night sweats (Brown et al., 2001; Sato and Ohashi, 2005).

The findings of the analysed studies indicate implications for future research and practice. The studies on middle-aged women had limitations, such as a smaller number of respondents in the assessed ethnicities and cultures. The research mentioned the need for further studies on different groups of middle-aged women across other countries.

CONCLUSIONS

This literary review proved the validity of the claims of professional publications that several factors contribute to the origin, character, prevalence, intensity of menopausal symptoms in women, and women's attitudes to health and menopause. The most important are biological factors (hypoestrogenism), genetic, mental factors, lifestyle factors, family environment, interpersonal relationships, employment, and ethnic and cultural influences.

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Ethical aspects and conflict of interests
The authors have no conflicts of interest to declare.

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