

REVIEW - SYSTEMATIC

Influencing factors on women's attitudes toward menopause: a systematic review

Sareh Dashti, PhD,¹ Narjes Bahri, PhD,² Tahereh Fathi Najafi, PhD,¹
Masoumeh Amirideli, MSc,³ and Robab Latifnejad Roudsari, PhD^{4,5}

Abstract

Importance: Menopause is a natural stage of the reproductive life of a woman. This natural event might affect activities of daily living and cause problems for women. Positive attitudes toward menopause can improve women's quality of life and reduce the severity of menopausal symptoms.

Objective: The aim of this systematic review was to assess the factors influencing women's attitudes toward menopause.

Evidence review: This systematic review was conducted based on the preferred reporting items for systematic reviews and meta-analyses (PRISMA) guideline in medical databases including PubMed, Web of Science, Scopus and Google Scholar, as well as Magiran, and SID until October 2020.

Findings: A total of 7,512 articles were identified. Eight articles were included in the review after excluding the duplicates and screening the articles based on the inclusion and exclusion criteria. The majority of the studies used the Attitude Toward Menopause Scale to assess the attitudes toward menopause. This variable differed between the studies conducted in different regions and countries. Furthermore, postmenopausal women had more positive attitudes toward menopause compared with peri- or premenopausal women. Other influencing factors of attitudes toward menopause included age, menopausal symptoms, psychological and socioeconomic status, and profession and ethnicity.

Conclusion and relevance: The findings showed that menopausal stage, menopausal symptoms, and psychological and socioeconomic status can influence the attitude of women toward menopause. Therefore, these factors should be considered in interventions that aim to improve women's attitudes toward menopause.

Key Words: Attitude toward menopause – Menopause – Perimenopause – Postmenopause – Premenopause.

Menopause is experienced by all women during their middle-age life period.¹ Although menopause is a physiologic event, some menopause-related signs and symptoms, including hot flash, nocturnal perspiration, reduced libido, fatigue, anxiety, and depression,

can turn it into a pathological issue.¹ Reduced serum estrogen has an important role in the onset of menopausal signs and symptoms. Other factors that can affect the prevalence and severity of menopausal signs and symptoms include social and cultural background, economic status, and education.²⁻⁴ Similarly, attitudes toward menopause may affect the severity of menopausal signs and symptoms and affect women's experience of menopause. A previous study reported that both postmenopausal women and their healthcare providers believed that attitudes toward menopause can have an important role in the formation of women's experience about menopause.⁵ The same finding was also reported by additional prospective studies.⁶ Jurgenson et al⁷ found a strong relationship between negative attitudes toward menopause and aging, increased severity, and the onset of menopausal symptoms. A systematic review by Ayers et al⁶ showed that women with negative attitudes toward menopause experience menopausal symptoms with a higher frequency and severity compared with those without negative attitudes. In a systematic review and meta-analysis on Iranian women,

Received April 4, 2021; revised and accepted June 15, 2021.

From the ¹Department of Midwifery, Mashhad Branch, Islamic Azad University, Mashhad, Iran; ²Department of Midwifery, Faculty of Medicine, Social Determinants of Health Research Center, Gonabad University of Medical Sciences, Gonabad, Iran; ³Department of Nursing, Nursing School, Gonabad University of Medical Science, Gonabad, Iran; ⁴Nursing and Midwifery Care Research Center, Mashhad University of Medical Sciences, Mashhad, Iran; and ⁵Department of Midwifery, School of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran.

Funding/support: Research council of Gonabad University of Medical Sciences (Grant no: A-10-1269-13).

Financial disclosure/conflicts of interest: None reported.

Address correspondence to: Narjes Bahri, PhD, Department of Midwifery, Faculty of Medicine, Social Development and Health Promotion Research Center, Gonabad University of Medical Science, Gonabad, Post code: 9691793718, Iran. E-mail: nargesbahri@yahoo.com

positive attitudes toward menopause were observed in 25% of the women, while neutral and negative attitudes were observed in 58% and 17%, respectively.⁸ Therefore, considering the important role of attitudes toward menopause in predicting the onset and severity of menopausal symptoms, healthcare programs should be developed with an attention to these attitudes. Several studies have assessed the relationship between attitudes toward menopause and their influencing factors.⁹⁻¹⁴ All these studies have documented the effect of social and cultural background on development of the attitude toward menopause in women. Therefore, factors influencing women's attitudes toward menopause should be addressed separately in every society. Identifying these factors will help healthcare policymakers design interventions to manage the controllable part of these factors for improving attitude toward menopause in women. Therefore, this study was conducted to systematically review the literature on the factors influencing attitudes toward menopause in women.

METHODS

Search strategy

This systematic review was conducted based on the preferred reporting items for systematic reviews and meta-analyses guideline. A search was carried out for articles published until October 2020 in English medical databases (PubMed, Web of Science, Scopus, and Google Scholar) and Persian databases (Magiran and SID). The search keywords included "menopause," "postmenopause," "climacteric," "attitude," and "opinion." Boolean operators were also used in designing the search strategy. The primary search strategy was designed in PubMed and was then modified for the other databases accordingly.

Inclusion criteria

Original cross-sectional articles that assessed women's attitudes toward menopause as the primary or secondary outcome measure were included in this review. The articles with irrelevant objectives or without their full text available and the ones with low reliability were excluded. Review articles, editorials, brief communications, and case reports as well as conference papers, book chapters, dissertations, expert opinions, and newspaper articles were also excluded from the study. The search was performed independently by two reviewers. Article screening was performed in two steps.

Study selection

The first step of the search resulted in 7,512 articles, including 2,888 from PubMed, 3,396 from Scopus, 1,021 from Web of Science, 159 from Google Scholar, eight from SID, and 40 from Magiran databases. A total of 4,314 articles remained after excluding the duplicate publications. The title and abstract of the articles were then evaluated based on the inclusion criteria. In the next step, the full text of the articles was reviewed. Studies that did not meet the inclusion criteria

Key points

Question: What are the factors affecting the attitudes toward menopause?

Findings: After conducting a systematic search, eight articles were included in the review. The majority of the articles reported the severity of menopausal symptoms as one of the factors affecting the attitudes toward menopause, followed by education, age, and employment status. One study reported that a minority of the women had negative attitudes toward menopause.

Meaning: The findings of this systematic review showed that the severity of menopausal symptoms as well as cultural, social, and economic factors affect attitudes toward menopause in women.

($n = 3,190$) were excluded, leaving eight articles for the final review (Fig. 1).

Quality assessment

Quality assessment was performed using the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement for cross-sectional studies.¹⁵ STROBE assesses the quality of cross-sectional articles using 22 items. The STROBE items assess the quality of the title and abstract (one item), introduction, including background and objectives (two items), methods, including study design, setting, participants, variables, measurement, bias, sample size, quantitative variables, and statistical methods (nine items), results, including participants, descriptive data, outcome data, main results, and other analyses (five items), discussion, including key results, limitations, interpretation, and generalizability (four items), and other information, including funding (one item).¹⁵ Each item is scored based on a scale of 1 (complete), 0.5 (partially complete), and 0 (incomplete or not applicable). Although the STROBE checklist can evaluate the quality of a study, the lack of a definite cutoff for interpretation is one of the limitations of this tool. Therefore, it is recommended that the STROBE checklist not be used for evaluating diagnostic tools and studies on tumor markers and genetic disease markers. As the current study aimed to assess the attitudes toward menopause, the STROBE checklist was applicable for this study.¹⁶ The reviewed articles were thus scored based on the STROBE checklist in this study. By the authors' decision, the articles that scored at least 50% of the maximum score in the STROBE subscales with more than one item were included in the current review. The articles with overall scores below 16 were also excluded from the study. Figure 2 presents the study scores for each section of the articles based on the STROBE checklist.

Data extraction

The titles and abstracts of the articles were evaluated to select the eligible studies, and any articles that did not meet

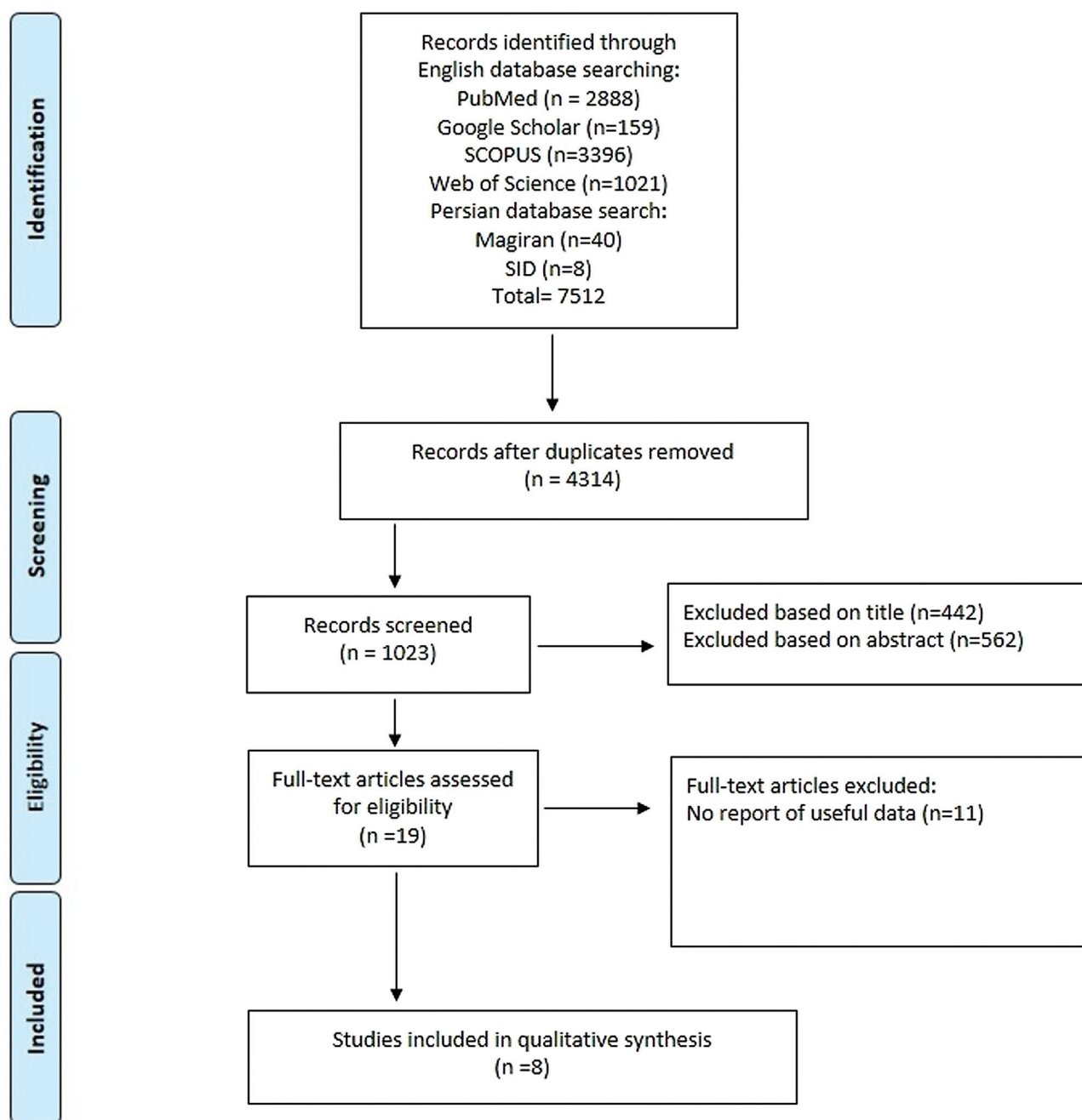


FIG. 1. Flowchart of the study.

the inclusion criteria were excluded. Then, the full texts of the selected articles were evaluated based on the inclusion and exclusion criteria. The included studies were assessed for their quality. The process of data extraction was performed by two reviewers at each step, and in the case of inconsistencies, a third reviewer was consulted and a decision was made based on the panel of three reviewers.

Data were extracted according to the predefined criteria arranged in a checklist, including article title, authors, year of

publication, journal name, setting, sample size, sampling method, inclusion criteria, exclusion criteria, participants' age, type of questionnaire for assessing attitude toward menopause, the questionnaire scoring methods, the reliability of the questionnaires, and the main results.

RESULTS

A total of eight studies were included in this review. The studies were conducted in Turkey (n = 3), China (n = 1), Iran

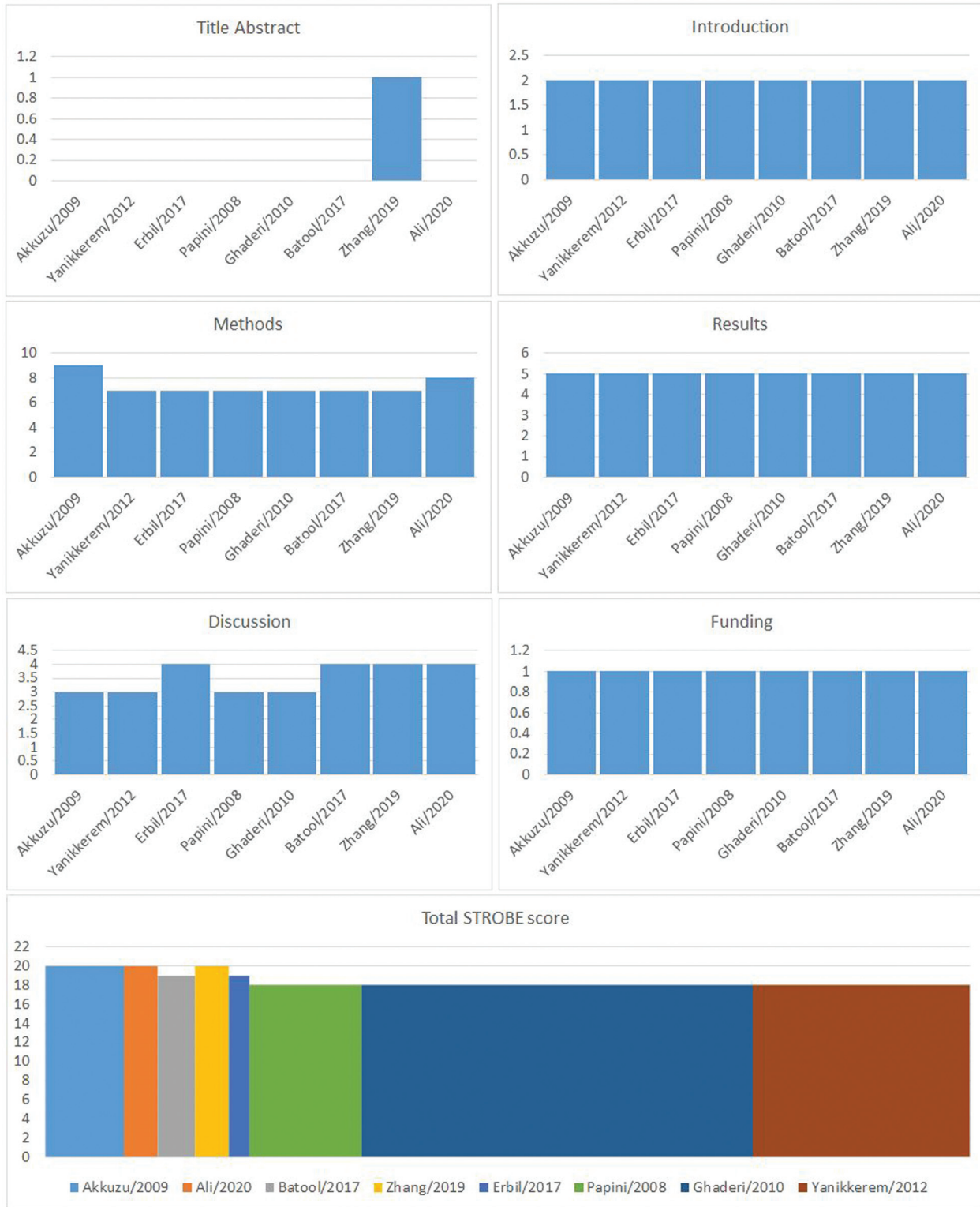


FIG. 2. Score of each article based on article sections using STROBE checklist.

($n = 1$), Pakistan ($n = 1$), the United States ($n = 1$), and the United Arab Emirates ($n = 1$). The overall number of study participants was 1,383 women at different life stages, ranging from premenopausal to postmenopausal periods. Table 1

presents the characteristics and findings of the reviewed studies.

The studies varied to a great extent in terms of sample size, measurement tools, participants, definitions of menopause,

TABLE 1. Characteristics and findings of the included studies

Author /year	Sample size	Country	Scale(s)	Findings
Akkuzu/2009 ²²	42	Ankara, Turkey	Turkish translates of Neugar-ten and Kraine's Attitudes toward Menopause scale	Education and employment status were the influencing factors on women's attitudes toward menopause
Yanikkerem/2012 ¹⁹	494	Manisa, Turkey	Researcher-made attitudes toward menopause MENQOL	Negative attitude toward menopause was associated with high frequency of menopausal symptoms
Erbil/2017 ²⁵	109	Ordu, Turkey	ATMS BDI	Natural menopause was related to positive attitudes toward menopause compared with surgically induced menopause. Attitudes toward menopause were related to depressive symptoms and body image.
Papini/2008 ²³	169	Illinois, USA	Bowles' Menopause Attitude Scale modified version of the menopausal symptoms checklist	Positive attitudes toward menopause were mostly found among women at postmenopausal period followed by perimenopause, premenopausal period, and surgical menopausal induction. Age and education level were positively related to positive attitudes toward menopause.
Ghaderi/2010 ²⁰	378	Shiraz, Iran	ATMS	In multiple regression, for the assessment of the relationship between the total attitude score and important factors, a statistically significant relation was observed between menopause symptom (hot flashes, night sweats, and depressed mood) and total score of attitude in multiple regression analysis. ($P < 0.05$), and other factors did not have any effect on attitude. Education level was also related to attitudes toward menopause.
Batool/2017 ²⁴	80 (40 perimenopausal, 40 postmenopausal)	Lahore, Pakistan	ATMS Greene Climacteric Survey	Nurses and postmenopausal women had positive attitude toward menopause
Zhang/2019 ²⁶	98 (51 Mosuo ethnicity and 47 Han ethnicity)	Yunnan, China	KMI SSICHSB MAQ	The major ethnicity had more positive attitudes toward menopause. Ethnicity was correlated with feminist and society view subscales of attitudes toward menopause.
Ali/2020 ²¹	60	Dubai, UAE	MENQOL ATMS	Severe menopausal symptoms and psychological distress were associated with negative attitudes toward menopause.

ATMS, Attitude Toward Menopause Scale; BDI, Beck Depression Inventory; KMI, Modified Kupperman Menopause Index; MAQ, Menopause Attitude Questionnaire; MENQOL, Menopause-specific Quality of Life; SSICHSB, Self-rating Scale of Illness Conception and Health Seeking Behavior; UAE, United Arab Emirates; USA, United States of America.

positive or negative attitudes, and study location. The most commonly used questionnaire to assess attitudes toward menopause was the Attitudes Toward Menopause Scale (ATMS). ATMS is a 20-item questionnaire that includes 2 negative statements and 18 positive statements. The highest achievable score in this questionnaire is 80 and scores above 40 reflect positive attitudes.¹⁷ Other tools that were used in the studies were a 15-item researcher made attitudes toward menopause questionnaire and the Menopause Attitude Questionnaire (MAQ). MAQ is a 33-item questionnaire with five subscales, including menstruation as a debilitating event, menstruation as a bothersome event, menstruation as a natural event, anticipation and prediction of the onset of menstruation, and denial of any effects of menstruation.¹⁸

The most commonly reported influencing factor of attitudes toward menopause was menopausal symptom severity, which was reported in three studies with an overall population of 941 women.¹⁹⁻²¹ Yanikkerem et al¹⁹ examined 494 women, including 8.1% in the premenopausal period, who were referred to an Obstetrics and Gynecology Outpatient Department in Manisa, Turkey. Their study excluded women with a history of hormonal medication and assessed the women's attitudes using a 15-item, researcher-made, attitudes toward

menopause questionnaire. The frequency of menopausal symptoms was significantly higher in the women with negative attitudes toward menopause compared with the women who did not have such an attitude.¹⁹ In the study by Ghaderi et al,²⁰ 378 postmenopausal women who had been referred to five primary health centers in different geographical regions of Shiraz, Iran, were selected based on cluster sampling. Their attitudes toward menopause were assessed using the ATMS. The study showed that menopausal symptoms, including hot flashes, nocturnal perspiration, and depressed mood, were associated with negative attitudes toward menopause.²⁰ In the study by Ali et al,²¹ 60 menopausal women were selected from two public health centers in Dubai, United Arab Emirates. Their attitude toward menopause was assessed using the Arabic translation of the ATMS. They reported that negative attitudes increased with an increase in the level of anxiety ($r = -0.374$), depression ($r = -0.309$), psychological distress ($r = -0.390$), fatigue ($r = -0.304$), and vasomotor symptoms ($r = -0.358$). No significant correlation was found between the ATMS score and sociodemographic and clinical characteristics of the women in that study.²¹ Akkuzu et al²² only found a significant correlation between attitudes toward menopause and social withdrawal and vaginal itching. They

reported that women with vaginal symptoms had lower ATMS (negative attitudes) scores compared with women without such symptoms.²²

Education was another influential factor that was reported in three studies with an overall population of 596 women.^{20,22,23} Ghaderi et al²⁰ reported that the ATMS score was significantly lower in women with a university degree (91.9 ± 14.9) compared with illiterate women (102 ± 11.1 , $P = 0.010$), and those with primary or junior high school education (103.7 ± 11.9 , $P = 0.003$), high school education (103.7 ± 14.0 , $P = 0.010$), and high school diploma (103.7 ± 11.6).²⁰ Although the difference was statistically significant, the ATMS scores were above the cutoff for positive attitudes in all the groups, and no significant relationship was thus observed between education and attitudes toward menopause.²⁰ In the study by Akkuzu et al,²² 42 women, including 21 women in the premenopausal period, were selected based on stratified random sampling from a single health center in Ankara, Turkey. These women's attitudes toward menopause were assessed using the Turkish translation of the ATMS. The study found that education ($P = 0.012$) was a factor influencing women's attitudes toward menopause, and ATMS scores were the highest among the illiterate women (60.54 ± 10.62), followed by women with primary school education (60.35 ± 9.70) and school education (36.00 ± 8.82).²² Their findings suggested that women with school education had significant negative attitudes toward menopause compared with the illiterate women and those with primary school education, both of which fell in the reported cutoff for positive attitudes.²² In the study by Papini et al,²³ 169 middle-aged community-dwelling women were selected from the parents of students participating in another study in Illinois, USA. Their attitudes toward menopause and menopausal symptoms were assessed using Bowles' Menopause Attitude Scale and the modified version of the Menopausal Symptoms Checklist, respectively. The study showed that positive attitudes toward menopause increase with an increase in age and education.²³

Employment was also reported as a factor influencing attitudes toward menopause by two studies with an overall population of 122 women.^{22,24} In the study by Akkuzu et al²² in Ankara, Turkey, employment status was reported as a factor influencing attitudes toward menopause ($P = 0.011$). In another study, Batool et al²⁴ investigated 80 nurses and teachers, including 40 perimenopausal and 40 postmenopausal women with an equal profession distribution, who were selected from four governmental colleges and hospitals in Lahore, Pakistan, by purposive sampling. These women's attitudes toward menopause was assessed using the ATMS. The study showed that attitudes toward menopause correlated significantly with profession, indicating that nurses had more positive attitudes toward menopause due to their significantly higher ATMS scores (positive attitudes) compared with the teachers (56.05 ± 7.02 in the nurses vs 48.70 ± 12.10 in the teachers, $P = 0.001$).²⁴ Akkuzu et al²² also showed that employed women had more positive attitudes toward menopause compared with unemployed women.

Age was reported as an influencing factor for attitudes toward menopause in one study ($n = 169$), indicating that older age was associated with more positive attitudes toward menopause compared with premenopausal age.²³ Batool et al²⁴ also reported that the stage of menopause correlated significantly with the attitudes toward menopause, indicating that postmenopausal women had more positive attitudes toward menopause compared with premenopausal women.

Surgically induced menopause was reported as an influencing factor for attitudes toward menopause in one study ($n = 109$).²⁵ Erbil et al²⁵ used convenience sampling to select 109 outpatient menopausal women who were referred to an obstetrics and gynecology clinic in the northern Turkish province of Ordu and assessed their attitude toward menopause using the ATMS. Based on the study hypothesis, ATMS scores higher than 40 indicated positive attitudes toward menopause. The study reported that natural menopause had a positive effect on attitudes toward menopause compared with surgically induced menopause, indicating that women with natural menopause had more positive attitudes toward menopause compared with women with surgically induced menopause.²⁵ Pappini also found significantly higher negative attitudes toward menopause in women with surgically induced menopause compared with women who had reached menopause naturally.²³

One study ($n = 51$) reported that being a member of a minority culture was associated with negative attitudes toward menopause.²⁶ In the study by Zhang et al,²⁶ women in their postmenopausal period from two different ethnicities in Yunnan, China (51 from the Mosuo minority and 47 from the Han majority) were selected by convenience sampling. The women's attitudes toward menopause were assessed using the MAQ. They reported a significant difference in attitudes toward menopause between the ethnicities, suggesting that women in the minority ethnicity group had more negative attitudes toward menopause compared with the women who belonged to the majority ethnicity group ($P < 0.001$). The subscale analysis revealed that feminist views ($P < 0.05$) and society's views ($P < 0.01$) were the subscales of attitudes toward menopause that were significantly higher among the major ethnicity compared with the minority ethnicity.²⁶

Finally, Akkuzu et al²² found that the ATMS scores were significantly higher (positive attitudes) in the women who reported social withdrawal compared with the women without the feeling of social withdrawal. Regardless of the statistical difference, the mean score for both variables was within the positive attitudes range used in the study by Akkuzu et al²² (ATMS score > 40).

DISCUSSION

This systematic review showed that menstrual symptom severity, education, age, and employment as well as ethnicity (minority) can influence attitudes toward menopause.

Menopausal symptoms and attitudes toward menopause

The reviewed studies showed that depression correlated with attitudes toward menopause; however, due to the cross-sectional nature of the studies, the cause of this link could not be determined. Previous studies have shown that major depression impairs pain sensation and increases pain sensitivity^{27,28}; this mechanism might explain how depressive symptoms affect attitudes by changing the perception of menopausal symptoms. A systematic review showed that, among the determinants of depression severity, interoceptive deficits had a high prevalence among the participants with moderate depression.²⁷ The findings of interventional studies on the effect of depression on attitudes and menopausal symptoms are controversial. It has been reported that depression treatment can reduce the severity of menopausal symptoms; meanwhile, HT has also been found to reduce depressive symptoms in women.²⁹ The study by Yanikkerem et al¹⁹ revealed a relationship between menopausal symptoms and attitudes toward menopause. Nonetheless, as stated by the authors, these findings might have been affected by the high prevalence of housewives (67.6%) and postmenopausal women (91.9%) in their study. Furthermore, the selection of women from an outpatient obstetrics and gynecology clinic might have led to the high tendency to use medications for treating menopausal symptoms.¹⁹ Moreover, the inclusion of postmenopausal women in their study must have affected the reported attitudes toward menopause, as women who experience menopause might have a different attitude compared with women who expect menopause.^{30,31}

Erbil et al²⁵ reported lower levels of depressive symptoms in women with positive attitudes toward menopause compared with women with negative attitudes. Furthermore, as the study was cross-sectional and could not determine causation, depression can be considered an influencing parameter on attitudes toward menopause. This finding was in line with the results of previous studies^{21,32}; however, other studies have reported the relationship in an opposite direction.^{33,34} As mentioned before, these studies were cross-sectional and cannot not indicate causation or hierarchy.

In the study by Akkuzu et al,²² vaginal symptoms correlated with worse attitudes toward menopause, although the ATMS scores of the participants with vaginal symptoms and those without symptoms both fell in the range of positive attitudes. Since only a small number of the participants reported vaginal symptoms ($n = 6$), the findings of the study should be interpreted with caution.

Education and attitude toward menopause

In two studies,^{22,23} education was found to be an influencing factor on attitudes toward menopause, while in another study, no relationship was found between education and attitudes toward menopause.²⁰ The findings of the study by Akkuzu et al²² showed that women with low levels of education (school) had a mean ATMS score within the range of negative attitudes toward menopause, while women with primary school education and literate women had scores

within the range of positive attitudes toward menopause. Nonetheless, the relationship between education and other study parameters was not assessed in the study by Akkuzu et al.²² This finding may be affected by the high frequency of low levels of education (50%) and unemployment (88.1%) in the study population, the small sample size and being a single-center study. Moreover, Ghaderi et al²⁰ hypothesized that cultural factors might have a great influence on attitudes and the effect of education might thus be minimal. Overall, it can be concluded that education might not be a strong predictor of attitude toward menopause, as this attitude might be affected by many factors. There is still a need for further studies with larger sample sizes before reaching a definite conclusion in this regard.

Employment and attitude toward menopause

In the study by Batool et al,²⁴ nurses had more positive attitudes toward menopause compared with teachers. In that study, nurses reported longer daily work hours (7.15 h) and higher monthly incomes (63650.00 Pak Rs) compared with teachers (4.88 h and 100175.00 Pak Rs). In addition to knowledge and the nature of the profession itself, one of the reasons for the reported difference by profession in the attitude toward menopause might be the confounding role of different monthly incomes and work hours. Nevertheless, this study did not disclose participants' education level in the two professions.²⁴

In the study by Akkuzu et al,²² employment was related to positive attitudes toward menopause. Although the mean ATMS score in both employed ($n = 37$, 9.72 ± 1.59) and unemployed ($n = 5$, 6.34 ± 2.83) participants was low and fell in the negative category, these findings should be interpreted with caution, as the majority of the participants in the study were employed. Akkuzu et al did not disclose the income and socioeconomic level of the participants, but hypothesized that economic status and income might be the reason for the observed correlation between employment and attitudes toward menopause.

Overall, the effect of employment on attitudes toward menopause might be attributed to the economic status of women; however, larger studies are needed to prove this hypothesis.

Age and attitude toward menopause

The association between age and attitudes toward menopause was assessed differently in the reviewed studies. Only one study assessed the relationship between age and attitudes toward menopause.²³ Another study assessed the relationship between premenopausal and postmenopausal periods and attitudes toward menopause.²⁴ These findings may indicate that age alone might not be related to attitudes toward menopause compared with the more significant relationship between menopausal status and attitudes. Similarly, another study found that the surgical induction of menopause was associated with more negative attitudes toward menopause.²¹ These findings may indicate

that it is the menopause status that affects attitudes toward menopause and age might not influence attitudes toward menopause.

Furthermore, as aging is associated with signs and symptoms of menopause, some women consider menopause synonymous to aging.³⁵ The woman's perceived loss of femininity or sexual function may reflect the role of cultural beliefs that equal aging with disease. In some cultures, childbearing constitutes the primary role of women. Moreover, studies conducted in industrialized countries have questioned the clichés of older women playing the grandmother role in society. Nowadays, self-esteem is not related to somatic and sexual function. In contrast, self-esteem is related to social and family achievements. Therefore, menopause is not associated with the loss of sexual power in societies where women have a higher social status, and this change in point of view has resulted in more positive attitudes toward menopause in postmenopausal women in this generation compared with the previous generation. Rejecting the idea that menopause is related to aging has reduced negative attitudes of women at the perimenopausal age by minimizing their perception of the importance of physical and sexual function. Some women consider menopause a favorable period of life, as they no longer need contraception and tampons and their sexual activity is thus not limited by these issues. Unlike menopause, women continue to have a negative attitude toward aging. Therefore, separating aging from reproductive aging and menopause may favor positive attitudes toward menopause in women.³⁵

Ethnicity and attitude toward menopause

The study by Zhang et al²⁶ showed that menarche age and family income were significantly lower in the minority ethnicity compared with the major ethnicity in the region ($P=0.001$, $P<0.001$, respectively), while family size was significantly higher among the minority ethnicity compared with the majority ethnicity ($P<0.001$). Regarding the differences in ethnicity, it can be inferred that social views and feminist views can influence attitudes toward menopause. This study revealed that women who were members of minority groups had negative social and feminist views and thereby negative attitudes toward menopause. Moreover, due to the observed differences in family income and menarche age, it can be hypothesized that ethnicity can affect attitudes toward menopause due to genetic factors as well as social factors, family income, and probably employment type. Genetic factors can affect menarche age.

Limitations

One of the limitations of this review was the heterogeneity of the included studies in terms of participants, sample size, measurement tool, and geographic region. Furthermore, the studies had assessed different aspects of quality of life and psychological factors, which may be interpreted differently based on the cultural context and measurement tool used. As the studies used different tools to assess attitudes toward

menopause, this review tried to minimize the effect of this limitation by focusing on the reported correlations between the scores and the other parameters. Nevertheless, due to the mentioned limitations, there is a need for further regional and national studies to identify the factors influencing attitudes toward menopause.

CONCLUSION

Based on the findings of previous studies, the attitudes of women toward menopause vary in different regions and cultures. Comparing the results of the studies showed that attitudes toward menopause differ between countries. Given that only three studies were from a single country (Turkey), it can be inferred that attitudes toward menopause might also vary between different regions in the same country. The study conducted on two ethnicities in China also revealed that attitudes toward menopause vary between different ethnicities and social minorities.

Overall, the most-cited factor influencing attitudes toward menopause was menopausal stage. This finding indicates that women in postmenopause have more positive attitudes toward menopause compared with pre- or perimenopausal women. Therefore, age can be considered an influencing factor on attitudes toward menopause, as it is an indirect indicator of the menopausal stage. Furthermore, women with surgically induced menopause were more likely to experience negative attitudes toward menopause. Also, socioeconomic factors, including family income and social views regarding menopause, could be related to attitudes toward menopause. Depression was among the frequently cited psychological conditions that were related to attitudes toward menopause. The presence of menopausal symptoms and their severity can be considered other influencing factors of the attitudes toward menopause. As this review was conducted on cross-sectional studies, the findings can provide a hypothetical model that can affect attitudes toward menopause; therefore, studies with a different design are needed to assess causation. The socioeconomic aspect, psychological aspect, and symptomatology of menopause should be taken into account when designing interventions to improve attitudes toward menopause in women.

Menopause is a natural period of life and attitudes toward menopause can be considered a normal finding in this period of life. The reviewed studies showed that attitudes toward menopause are different among women with different characteristics. Therefore, it can be inferred that attitudes toward menopause are affected by a set of different factors. Our systematic review excluded studies on women with underlying conditions, therefore, the findings of this review are related to the normal menopausal experience of women and thus reflect the different aspects of a normal finding during the menopausal period.

The findings of this study may lead to theories that can be used to improve risk factors and predictors of negative attitudes toward menopause as well as quality of life in postmenopausal women.

Acknowledgments: The authors are grateful for the support from the research council of Gonabad University of Medical Sciences.

REFERENCES

1. Memon FR, Jonker L, Qazi RA. Knowledge, attitudes and perceptions towards menopause among highly educated Asian women in their midlife. *Post Reprod Health* 2014;20:138-142.
2. Zhang L, Ruan X, Cui Y, Gu M, Mueck AO. Menopausal symptoms and associated social and environmental factors in midlife Chinese women. *Clin Interv Aging* 2020;15:2195-2208.
3. Lee P-S, Lee C-L. Prevalence of symptoms and associated factors across menopause status in Taiwanese women. *Menopause* 2021;28:182-188.
4. Santoro N, Roeca C, Peters BA, Neal-Perry G. The menopause transition: signs, symptoms, and management options. *J Clin Endocrinol Metab* 2021;106:1-15.
5. Gannon L, Ekstrom B. Attitudes toward menopause: the influence of sociocultural paradigms. *Psychol Women Quarterly* 1993;17:275-288.
6. Ayers B, Forshaw M, Hunter MS. The impact of attitudes towards the menopause on women's symptom experience: a systematic review. *Maturitas* 2010;65:28-36.
7. Jurgenson JR, Jones EK, Haynes E, Green C, Thompson SC. Exploring Australian Aboriginal Women's experiences of menopause: a descriptive study. *BMC Womens Health* 2014;14:47.
8. Bahri N, Latifnejad R, Tohidinik HR, Sadeghi R. Attitudes towards menopause among Iranian women: a systematic review and meta-analysis. *Iran Red Crescent Med J* 2016;18:e31012.
9. Hoga L, Rodolpho J, Gonçalves B, Quirino B. Women's experience of menopause: a systematic review of qualitative evidence. *JBI Database System Rev Implement Rep* 2015;13:250-337.
10. Dasgupta D, Ray S. Is menopausal status related to women's attitudes toward menopause and aging? *Women Health* 2017;57:311-328.
11. Adler SR, Fosket JR, Kagawa-Singer M, et al. Conceptualizing menopause and midlife: Chinese American and Chinese women in the US. *Maturitas* 2000;35:11-23.
12. Bahri N, Yoshany N, Morowatisharifabad MA, Noghabi AD, Sajjadi M. The effects of menopausal health training for spouses on women's quality of life during menopause transitional period. *Menopause* 2016;23:183-188.
13. Bahri N, Latifnejad Roudsari R. Moving from uncertainty toward acceptance: a grounded theory study on exploring Iranian women's experiences of encountering menopause. *J Psychosom Obstet Gynecol* 2020;41:154-164.
14. Bahri N, Latifnejad Roudsari R, Azimi Hashemi M. Adopting self-sacrifice: how Iranian women cope with the sexual problems during the menopausal transition? An exploratory qualitative study. *J Psychosom Obstet Gynecol* 2017;38:180-188.
15. Vandembroucke JP, Von Elm E, Altman DG, et al. Strengthening the Reporting of Observational Studies in Epidemiology (STROBE): explanation and elaboration. *PLoS Med* 2007;4:e297.
16. Luchini C, Veronese N, Nottegar A, et al. Assessing the quality of studies in meta-research: review/guidelines on the most important quality assessment tools. *Pharmaceutical Statistics* 2021;20:185-195.
17. Neugarten BL, Wood V, Kraines RJ, Loomis B. Women's attitudes toward the menopause. *Vita humana* 1963;6:140-151.
18. Brooks-Gunn J, Ruble DN. The menstrual attitude questionnaire. *Psychosom Med* 1980;42:503-512.
19. Yanikkerem E, Koltan SO, Tamay AG, Dikayak Ç. Relationship between women's attitude towards menopause and quality of life. *Climacteric* 2012;15:552-562.
20. Ghaderi E, Ghazanfarpour M, Kaviani M. Evaluation of menopausal women's attitudes towards menopause in Shiraz. *Pakistan J Med Sci* 2010;26:698-703.
21. Ali AM, Ahmed AH, Smail L. Psychological climacteric symptoms and attitudes toward menopause among Emirati women. *Int J Environ Res Public Health* 2020;17:5028.
22. Akkuzu G, Örsal Ö, Kecialan R. Women's attitudes towards menopause and influencing factors. *Türkiye Klinikleri Tıp Bilimleri Dergisi* 2009;29:666-674.
23. Papini DR, Intrieri RC, Goodwin PE. Attitude toward menopause among married middle-aged adults. *Women Health* 2002;36:55-68.
24. Batool S, Kausar R, Naqvi G, Javed A, Tufail H. Menopausal attitude and symptoms in peri and post-menopausal working women. *Pakistan J Psychol Res* 2017;55-75.
25. Erbil N. Attitudes towards menopause and depression, body image of women during menopause. *Alexandria J Med* 2018;54:241-246.
26. Zhang Y, Zhao X, Leonhart R, et al. A cross-cultural comparison of climacteric symptoms, health-seeking behavior, and attitudes towards menopause among mosuo women and Han Chinese Women in Yunnan, China. *Transcult Psychiatry* 2019;56:287-301.
27. Eggart M, Lange A, Binser MJ, Queri S, Müller-Oerlinghausen B. Major depressive disorder is associated with impaired interoceptive accuracy: a systematic review. *Brain Sci* 2019;9:131.
28. Vadivelu N, Kai AM, Kodumudi G, Babayan K, Fontes M, Burg MM. Pain and psychology—a reciprocal relationship. *Ochsner J* 2017;17:173-180.
29. Soares CN. Taking a fresh look at mood, hormones, and menopause. *Menopause* 2020;27:371-373.
30. Li S, Ho SC, Sham A. Relationship between menopause status, attitude toward menopause, and quality of life in Chinese midlife women in Hong Kong. *Menopause* 2016;23:67-73.
31. Marván ML, Espinosa-Hernández G, Martínez-Garduño MD, Jasso K. Attitudes toward menopause, sexual function and depressive symptoms in Mexican women. *J Psychosom Obstet Gynecol* 2018;39:121-127.
32. Fu J-X, Luo Y, Chen M-Z, et al. Associations among menopausal status, menopausal symptoms, and depressive symptoms in midlife women in Hunan Province, China. *Climacteric* 2020;23:259-266.
33. Campbell KE, Dennerstein L, Finch S, Szoek CE. Impact of menopausal status on negative mood and depressive symptoms in a longitudinal sample spanning 20 years. *Menopause* 2017;24:490-496.
34. Wariso BA, Guerrieri GM, Thompson K, et al. Depression during the menopause transition: impact on quality of life, social adjustment, and disability. *Arch Womens Ment Health* 2017;20:273-282.
35. Dillaway H. Living in uncertain times: experiences of menopause and reproductive aging. In: Bobel C, Winkler IT, FAHS, B, et al., editors. *The Palgrave Handbook of Critical Menstruation Studies*. Singapore: Palgrave Macmillan; 2020. pp. 253-268.