Attitudes Towards Menopause Among Iranian Women: A Systematic Review and Meta-Analysis

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Abstract

Context: Women's attitudes towards menopause have an important impact on menopausal experiences, including the perceived severity of symptoms and women's general lifestyles during menopause. Therefore, such attitudes should be considered when developing management and counseling programs for women in menopausal transition. This systematic review and meta-analysis was conducted to examine Iranian women's attitudes towards menopause.

Evidence Acquisition: In this study, searches for English articles were conducted using PubMed, Scopus, Science Direct, and Google Scholar databases, and searches for Persian articles were conducted using Magiran, SID, and Google Scholar. All articles published until April 30, 2015 were considered, using the keywords "Menopause," "Attitude," "Iran," and "Iranian women." Out of 1160 potentially relevant publications, 21 documents met the inclusion criteria. Then, the quality of the studies was examined by two reviewers independently using additional pre-specified criteria. Measures of the effects were pooled, and random effect meta-analysis was conducted using Stata software version 11.

Results: Out of the 21 selected documents, 11 studies were eligible for inclusion in the meta-analysis. The results of the meta-analysis on 3453 participants showed that 25% of Iranian women had positive attitudes, 58% had neutral attitudes, and 17% had negative attitudes towards menopause.

Conclusions: The majority of Iranian women had neutral attitudes towards menopause, which may be evidence of poor knowledge about menopause. Therefore, it is suggested that appropriate educational programs be developed and implemented by policymakers in order to increase knowledge and raise awareness among women about menopause.

Keywords: Menopause, Attitude, Review, Systematic, Meta-Analysis, Iran

1. Context

The global trend of an aging population and the subsequent increase in the population of postmenopausal women has currently made the health of women of menopausal age a major health issue (1). WHO has reported that in 2030, the total number of postmenopausal women will reach 1.2 billion, and the ratio of postmenopausal women in industrialized and developing countries will be 24% and 76%, respectively (2). Iran, like many developing countries, is experiencing significant demographic and epidemiological changes, and based on the statistics provided by the Iranian Ministry of Health in 2013, the number of 45-60 year old women in Iran was approximately 2,215,000 (3). It is predicted that in 2021, about 5 million women of menopausal age will be living in Iran (4). In the not too distant future, the increase in the population of postmenopausal women will turn the issue from a limited natural and physiological problem to one of the most important health problems of women in many countries (5). These statistics show the need for careful planning by health system policymakers to meet the needs of this growing population.

Menopause is a multifaceted process and a bio-psycho-social phenomenon. During their passage through menopause, women experience some physiological symptoms that may be influenced by a range of psychological, social, and cultural factors (6). Women experience menopause in different social contexts, and therefore, their experiences reflect different meanings as a result of this process (7). In fact, although the biological and hormonal events associated with menopause around the world are generally the same, the attitudes towards menopause among those from different cultures, religions, and societies are very different (8-10). For instance, Sievert (2012) (11) has shown how various attitudes exist towards menopause among those of different religions.

Muslim women may have positive attitudes because they cannot pray and read the Qur'an during their menstrual periods; Hindu women cannot wash the images of deities during their menstrual periods, and menopause can therefore help them to perform these rituals more consistently. In a study conducted in 2014 in the United Arab Emirates, 60% of women had a positive attitude towards menopause (12). Memon et al. (2014) (13) has also reported that 87% of educated women in Hyderabad, Pakistan had positive attitudes towards menopause. Concerning the deep cultural differences in terms of attitudes towards menopause in women among different communities, Brown has stated that in non-western societies, menopause changes social roles, reduces limitations such as those imposed by certain taboos, and increases the authority of elderly women (14). On the other hand, in western societies, where physical and sexual attractiveness as well as youth and reproductive capacity are seen as valuable female qualities, negative attitudes towards menopause and aging can be observed among women in a large proportion of these communities (15).

Different attitudes towards menopause determine how women define menopause as well as how they interpret its effects on their lives (16). One study has indicated that attitudes towards menopause, which evolve in the context of a community and are influenced by social beliefs, affect women's lifestyles during menopause (17). Accordingly, it can be said that cultural values, beliefs, and attitudes about menopause could have a positive or negative impact on the lives of women during the menopausal years. Moreover, attitudes towards menopause have been mentioned as one of the reasons that justify the different experiences of menopausal symptoms (18-21). Based on the evidence that has been presented in some studies, women's attitudes towards menopause affect the severity of menopause symptoms, such that negative attitudes are associated with greater symptom severity (15, 22, 23).

1.1. Objectives

Considering the importance of the impact of women's attitudes towards menopause on their general experiences, the perceived severity of symptoms, and even their lifestyles during menopause, it is essential that these attitudes be investigated in order to promote more careful and appropriate health planning for women in menopausal transition within a particular cultural context. This systematic review and meta-analysis is therefore aimed at examining Iranian women's attitudes towards menopause.

2. Evidence Acquisition

In this systematic review, the suggested reporting items for systematic review and meta-analysis provided in the established guidelines (PRISMA and MOOSE) were followed (24, 25).

2.1. Search Strategy

A systematic literature review was conducted using the PubMed, Scopus, Science Direct, and Google Scholar databases for English articles, as well as Magiran, SID, and Google Scholar for Persian articles; all articles up to April 30, 2015 were considered. The search was conducted on the titles, abstracts, or keywords of each article using keywords and phrases separated by the Boolean operators "AND" and "OR": menopause "AND" attitude "AND" Iran "OR" Iranian women. To locate additional published studies not found by online searches, the reference lists of all retrieved articles were searched manually at the same time. We also searched for theses and dissertations using the Irandoc (Irandoc.ac.ir) and proQuest databases. All searches were performed independently by two investigators, and in case of disagreement about a particular paper, a third reviewer was consulted.

2.2. Study Selection

A total of 1166 studies were retrieved in the initial search from online databases, which included 207 articles from PubMed, 305 from Scopus, 261 from Science Direct, 312 from Google Scholar, 25 from SID, 50 from Magiran, and six from grey literature including theses and dissertations. 138 articles were excluded due to duplication, and 1028 publications remained. After assessing the titles and abstracts, 952 publications were excluded by applying the study inclusion criteria, and 76 publications remained for full-text assessment. After applying inclusion criteria in the full-text evaluation, 55 publications were excluded, and finally, 21 studies were considered to be potentially eligible. From those 21, 11 studies were deemed to be eligible for quantitative analysis and were included in the meta-analysis. The flowchart of the study selection process has been shown in Figure 1.

2.3. Inclusion Criteria

A computerized literature search was carried out to identify studies which investigated the attitudes of Iranian women towards menopause. The selected articles had to meet the following criteria: (1) peer-reviewed and published in English or Persian; (2) content evaluated the attitudes of Iranian women towards menopause as a primary or secondary outcome; and (3) content was in the form
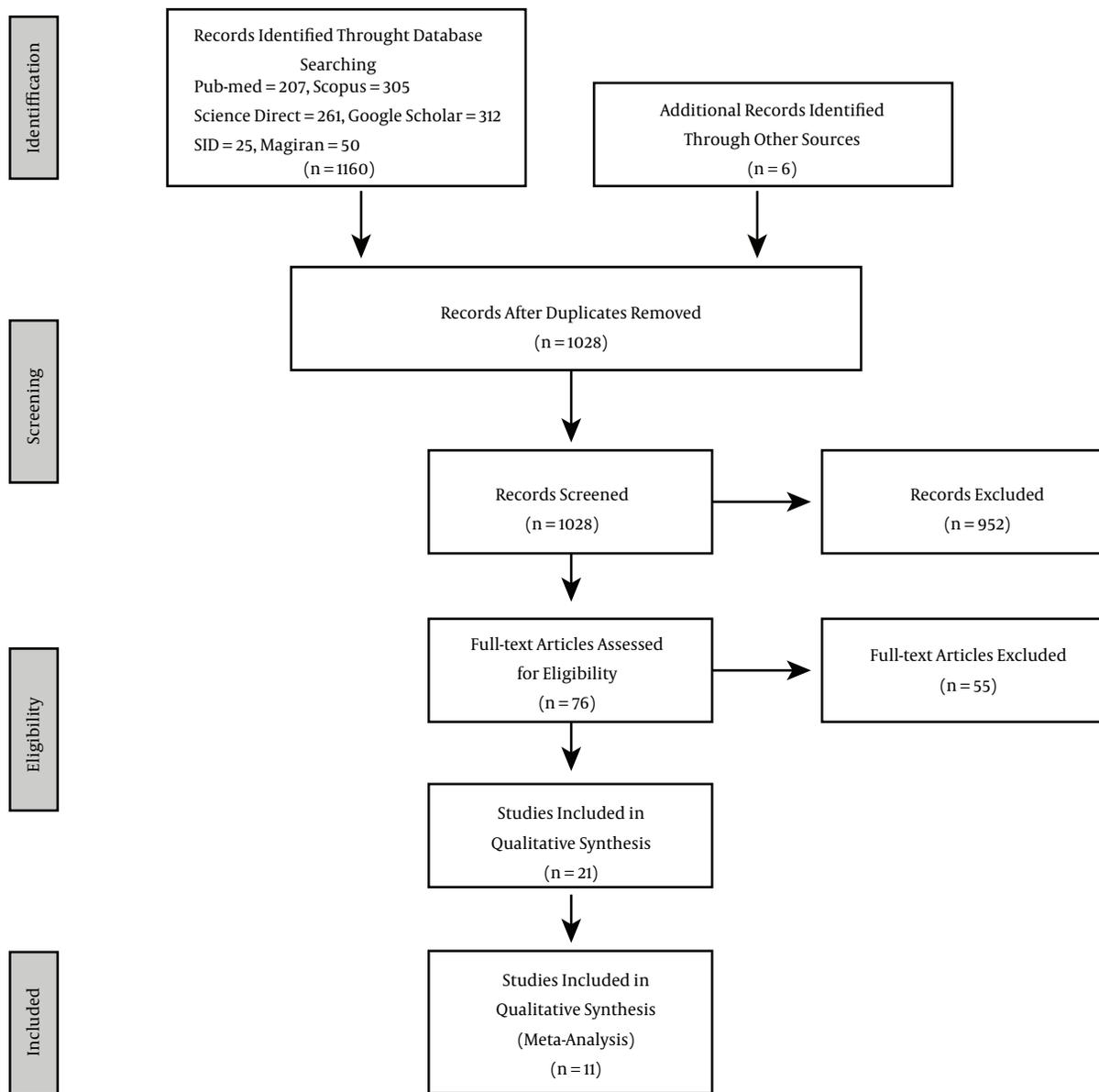
Figure 1. PRIZMA Flowchart of the study Selection Process

of an original article or brief communication. Therefore, reviews, editorials, debates, letters, case reports, meeting abstracts, and non-peer-reviewed articles were excluded from the analysis.

2.4. Data Extraction

The titles and abstracts of the articles were evaluated to select eligible studies. Some articles were excluded at this stage for not meeting the inclusion criteria. Then, the full-texts of the selected articles were evaluated to determine whether or not they actually fulfilled the inclusion criteria. The data were extracted according to the pre-defined criteria arranged in the form of a checklist, including the article's title, authors, year of publication, the name of journal, setting, sample size, sampling method, inclusion criteria, exclusion criteria, age of participants, the type of questionnaire for assessing attitudes towards menopause, the way in which the questionnaire was scored, the reliability of the questionnaire, and the main results. Data extraction was carried out in duplicate by the first and second

authors.

2.5. Quality Assessment

A checklist was designed to assess the quality of the included studies (Table 1). This checklist was derived from a CASP tool for descriptive/cross-sectional studies (26) as well as the Newcastle-Ottawa quality assessment scale for cohort studies (27), which was used in some previous systematic reviews (28, 29) and adjusted for this particular research question. The questionnaire included 18 items; each item was scored between 0 - 1. A score of 1 was given if the study met the criterion and a score of zero was given if the study had insufficient or no description of the criterion. The total score of the checklist was between 0-18 points. We stratified all studies based on their scores into three levels: (1) "High quality studies," which included studies scoring 75% or more of the maximum attainable score (score $\geq$ 13 points); (2) "Moderate quality studies," including studies scoring between 50% and 75% of the maximum attainable score (score between 9 and 12 points) and 3); and (3) "Low quality studies," which included studies scoring lower than 50% of the maximum attainable score (score $\leq$ 8 points).

Table 2 shows the methodological assessment of the quality of the included studies. The results of quality assessment revealed that 13 (65%) studies were graded as high, six (30%) studies were graded as moderate, and one (5%) study were graded as low quality. Three studies were theses and dissertations, and 16 studies were original articles. Six of these studies had a quasi-experimental design and we used their pre-test data in this study.

2.6. Data Synthesis and Analysis

Eleven studies with a total of 3453 participants were included in the meta-analysis, and the rest of studies were used only for systematic review. All of the included studies reported the attitudes towards menopause as positive, neutral, or negative.

A binomial distribution formula was used to calculate the variance of positive, neutral, and negative attitude prevalence in each study. Heterogeneity among the studies was assessed via the χ^2-based Q test and I^2 statistic. $P < 0.1$ was considered statistically significant for the Q test. Since there was heterogeneity among the studies, a random effects model was used to estimate the overall prevalence. A forest plot was used for graphical presentation of the results, where $P < 0.05$ was considered statistically significant. All statistical analysis was performed using Stata 11 (Stata Corp, College Station, TX, USA).

Table 1. List of Criteria for Assessing the quality of Studies on Attitudes of Iranian Women Towards Menopause

Value	Study participants
A	Was the sample representative of a defined population?
B	A description is included of at least two socio-demographic variables (e.g., age, sex, economical status, educational status, etc.)
C	Inclusion and/or exclusion criteria are provided
D	Participation rates (defined as the % age of eligible patients who gave their informed consent) are included and these rates exceed 70%
E	Information is given about the ratio between non-responders versus responders
	Attitude assessment
F	A standard questionnaire is used
G	Are measurement tools available or described?
H	Is the method of reliability and its measures justified?
	Study design
I	Is the setting for data collection justified?
J	Is the sample size sufficient?
K	Is the method of sampling justified?
L	A primary objective of the study is to examine the attitude towards menopause
M	It is clear how the data were collected (e.g., interview, questionnair)
	Results
N	Are the results significant and meaningful (P-value)?
O	Is there a summary of the bottom-line result of the trial in one sentence (key findings)?
P	Is there an in-depth description of the analytic process?
Q	Is sufficient data presented to support the findings?
R	Are the findings explicit?

3. Results

3.1. Overview of Selected Studies

Table 3 provides a summary of the 21 studies that met the inclusion criteria. These included studies that evaluated the attitudes of Iranian women towards menopause as either a primary or secondary objective.

The majority of the included studies (12 studies) were cross-sectional in design (30, 31, 33-37, 44, 45, 48-50), two of them was correlation studies (32,39), and six of the included studies were semi-experimental with pre-posttest design (38, 41-43, 46, 47). Of the latter, only the pre-test data was considered in this study.

Evaluating the settings of the studies showed that almost all areas of Iran were covered. Six studies were conducted in Tehran, the capital of Iran (31, 32, 34, 37, 38, 41), three were done in Mashhad and Birjand in northeast Iran

Table 2. Methodological Assessment of Study Quality

Studies		Criteria for Methodological Assessment of Study Quality																		Score	Quality
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R		
1	Seyedi-Alavi et al., 1998 (30)	+	+	+	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	15	High
2	Eftekhari et al., 1999 (31)	+	+	-	-	-	-	+	-	+	+	-	+	+	-	+	+	-	+	10	Moderate
3	Jamshidimanesh et al., 1999a (32)	+	+	-	+	-	-	-	+	+	+	+	+	+	-	+	+	+	+	13	High
4	Bakhtiari et al., 2000 (33)	+	+	+	-	-	-	+	-	+	+	+	+	+	+	+	-	+	+	13	High
5	Shojaeizadeh et al.,2002 (34)	+	+	-	-	-	-	-	-	+	+	+	+	+	+	+	-	+	+	11	Moderate
6	Pazande et al., 2003 (35)	-	-	-	-	-	-	+	+	+	+	+	+	+	-	+	-	+	+	10	Moderate
7	Ghandchiler et al., 2003 (36)	+	-	-	-	-	-	-	+	+	-	+	+	-	+	-	-	+	+	8	Low
8	Khademi et al., 2003 (37)	-	+	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	14	High
9	Rostami et al., 2003b (38)	+	+	+	-	-	-	+	+	+	+	+	-	+	+	-	-	+	+	12	High
10	Ganani et al., 2003a (39)	+	+	+	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	15	High
11	Shafiei et al., 2005b (40)	+	-	-	-	-	-	+	-	+	+	+	-	+	-	+	-	+	+	9	Moderate
12	Ghebe et al., 2005b (41)	+	+	-	-	-	-	+	+	+	+	+	-	+	+	+	+	+	+	13	High
13	Hasanpour et al., 2006b (42)	+	+	-	-	-	-	+	+	+	+	+	-	+	+	+	+	+	+	13	High
14	Mansourian et al., 2007b (43)	+	-	-	-	-	-	+	+	+	-	+	-	+	+	+	+	+	+	11	Moderate
15	Hedayati et al., 2008 (44)	+	+	-	-	-	-	+	-	+	+	+	+	+	+	+	+	+	+	13	High
16	Ghaderi et al., 2010 (45)	+	+	+	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	16	High
17	Mohammadi Zeidi et al., 2013b (46)	-	+	+	-	-	-	+	+	+	+	+	-	+	-	+	+	+	+	12	Moderate
18	Taherpour et al., 2013a (47)	+	+	-	-	-	-	+	+	+	+	+	-	+	+	+	+	+	+	13	High
19	Noroozi et al., 2013 (48)	+	+	-	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	14	High
20	Ghorbani et al., 2014 (49)	+	+	-	-	-	-	+	-	+	+	+	-	+	+	+	+	+	+	12	High
21	Zargar shoushtari et al., 2014 (50)	+	+	+	-	-	-	+	-	-	+	+	+	+	+	+	+	+	+	13	High

a Thesis or dissertation.
b Experimental study design.

(30, 42), two were conducted in Ghazvin in northwest Iran (46, 47), three were carried out in Babol, Guilan, and Gorgan, in northern Iran (33, 40, 43), and other studies were conducted in Kermanshah and Khoramabad, western Iran (35), Tabriz, in northwest Iran (36), Shiraz and Ahvaz (49), in southwest Iran (45), Isfahan, the center of Iran (48), and Semnan, in the northern half of Iran (49).

With respect to the attitude measures, Khademi et al. (37) used the menopause attitude scale (MAS) developed by Bowles, which is a semantic differential instrument that measures women's attitudes towards menopause with 20 bipolar adjective scales (e.g. ugly-beautiful; clean-dirty). Respondents rated each scale from 1 (most negative) to 7 (most positive), with 4 being regarded as neutral towards both adjectives. Respondents answered with regard to how, in their opinion, a woman in menopause felt (17). Ghaderi et al. (45) used the attitude towards menopause scale (ATM) developed by Neugarten, which is a 35-item measure including items on negative affect, postmenopausal recovery, extent of continuity, control of symptoms, psychological losses, unpredictability, and sexuality. Respondents indicated their level of agreement with each statement on a 4-point scale; scores were summed and range from 35 (a very negative attitude) to

140 (a very positive attitude). All of the remaining studies used self-structured questionnaires that varied in the number of items and the scoring. The numbers of items on the questionnaires varied from 8 (31), 10 (42, 50), 11 (48), 12 (41, 46), 14 (33, 39, 43, 47), 16 (44), 17 (32) and 19 (40). In the other studies, there was no information about the number of items in the questionnaires (30, 34-36, 38).

The included studies differed in the type of scoring used to evaluate the attitudes towards menopause. The majority of the studies (11 studies) designed scoring in terms of positive, neutral, and negative attitudes (30, 33-36, 39, 40, 42, 43, 47, 49). Two of the studies scored attitudes towards menopause as either positive or negative (48, 50). Eftekhari et al. (31) reported attitudes only as negative, and Jamshidimanesh (32) reported them only as positive. Other studies scored attitudes as mean scores (37, 38, 41, 44-46). Only studies that scored attitudes as positive, neutral, and negative were included in the meta-analysis.

3.2. Findings from the Studies

The point prevalence of positive attitudes ranged from 1% to 59% in the different studies, and the pooled prevalence was 25% (95% CI: 15% to 35%) with a high amount of

heterogeneity between studies ($I^2 = 98\%$, Q = 811, P < 0.001) (Figure 2).

The prevalence of neutral attitudes varied from 19% to 71%, and the pooled prevalence was 58% (95% CI: 44% to 71%). Heterogeneity among the studies was significantly high ($I^2 = 98.7\%$, Q = 743, P < 0.001) (Figure 3).

The range of negative attitude prevalence was found to be between 1% and 55%, and combined prevalence was 17% (95% CI: 9% to 25%). Again, there was evidence of heterogeneity between the studies ($I^2 = 98.9\%$, Q = 879, P < 0.001) (Figure 4).

4. Conclusions

Attitudes towards menopause are an important influence on the lifestyles of women during menopause, including their experiences of the menopausal transition period and the perceived severity of menopausal symptoms (14, 15, 17-23). The purpose of this systematic review and meta-analysis was to assess the attitudes of Iranian women towards menopause.

The results of the meta-analysis revealed that 25% of Iranian women had positive attitudes, 58% had neutral attitudes, and 17% had negative attitudes towards menopause. These results show that the majority of Iranian women have a positive or neutral attitude towards menopause.

Menopause is a natural condition for all women, but studies reveal that attitudes towards menopause vary from society to society (9). Similar findings as our results have been reported in previous studies. For instance, in a systematic review, Ayers et al. (2010) (15) reported that many studies have found that overall attitudes towards menopause have been more positive or neutral than they have been negative. In the Massachusetts women's health survey (MWHS), which followed 2545 women aged 45 - 55 for five years, the majority of women reported positive or neutral attitudes towards menopause, and the experience of menopause was generally associated with more positive attitudes (51). Olofsson (2000) reported that more than half of the surveyed Swedish women (51%) had positive attitudes, 24% had negative attitudes, and 25% had neutral attitudes towards menopause (10). Foo-Hoe (2007) reported that among Indian women, menopause is generally viewed as positive because Indian women tend to elevate to a higher social status with aging (13). In a qualitative study, Mackey (2014) interviewed 58 Chinese, Malay, and Indian women in the multi-ethnic cultural context of Singapore. He described an attitude of acceptance surrounding menopause and the changes associated with it among all three ethnicities (51). Furthermore, according to Marvan et al. (2013) (52), Mexican perimenopausal and

postmenopausal women showed higher scores for positive rather than negative attitudes.

In contrast, women in some societies have had negative attitudes towards menopause, although these attitudes are sometimes mixed. According to Kisa, (2012) Turkish women 40 years and older had negative attitudes towards menopause, and their primary concern was sexuality after menopause (13). Also, earlier studies in Turkey indicated that Turkish women had negative attitudes due to the loss of their respected roles as mothers, feminine attractiveness, and physical power, and as a whole, they perceived menopause as marking the end of their sexual life (13). Conversely, another study in Turkey reported that menopause is seen as a positive event because women no longer have to deal with problems associated with the monthly menstrual cycle, including the purchasing of sanitary products, or worry about getting pregnant (5).

Socio-cultural factors may influence the menopausal transition, and there is some evidence that social context may also influence the menopausal experience and the resulting attitudes towards menopause (5, 9, 13). In societies where women tend to be valued primarily for their physical and sexual attractiveness as well as reproductive capacity and youthfulness, menopause is perceived as signifying the loss of such features, and therefore women believe that during this period, they will lose their sense of achievement and status in the society (25, 53). As a result, some studies have suggested that women in developed countries have negative attitudes towards menopause. Furthermore, in societies where women have a low status, menopause is associated with the loss of fertility (13). In contrast, societies in which the social status of women is elevated after menopause view this event as positive. For example in Thailand, China, and India, women have reported that they feel relaxed and independent when they experience menopause (52).

The results of this analysis must be interpreted in the context of the study's limitations. One of the limitations was the use of non-standard questionnaires in the majority of the selected studies which resulted in only 11 studies being used in the meta-analysis. Another limitation was the inclusion of "neutral" attitudes in categorizing attitudes towards menopause. This category prevents a clear interpretation of the results since it is neither positive nor negative. In this study, a "neutral attitude" accounted for 58% of prevalence. The results might have changed if attitudes were strictly classified as either "positive" or "negative." In this case, the results would have been more precise and the interpretation of the results was more objective.

There are also other possible limitations of this study. For instance, despite trying to find all of the relevant studies, a publication bias may have occurred. Further-
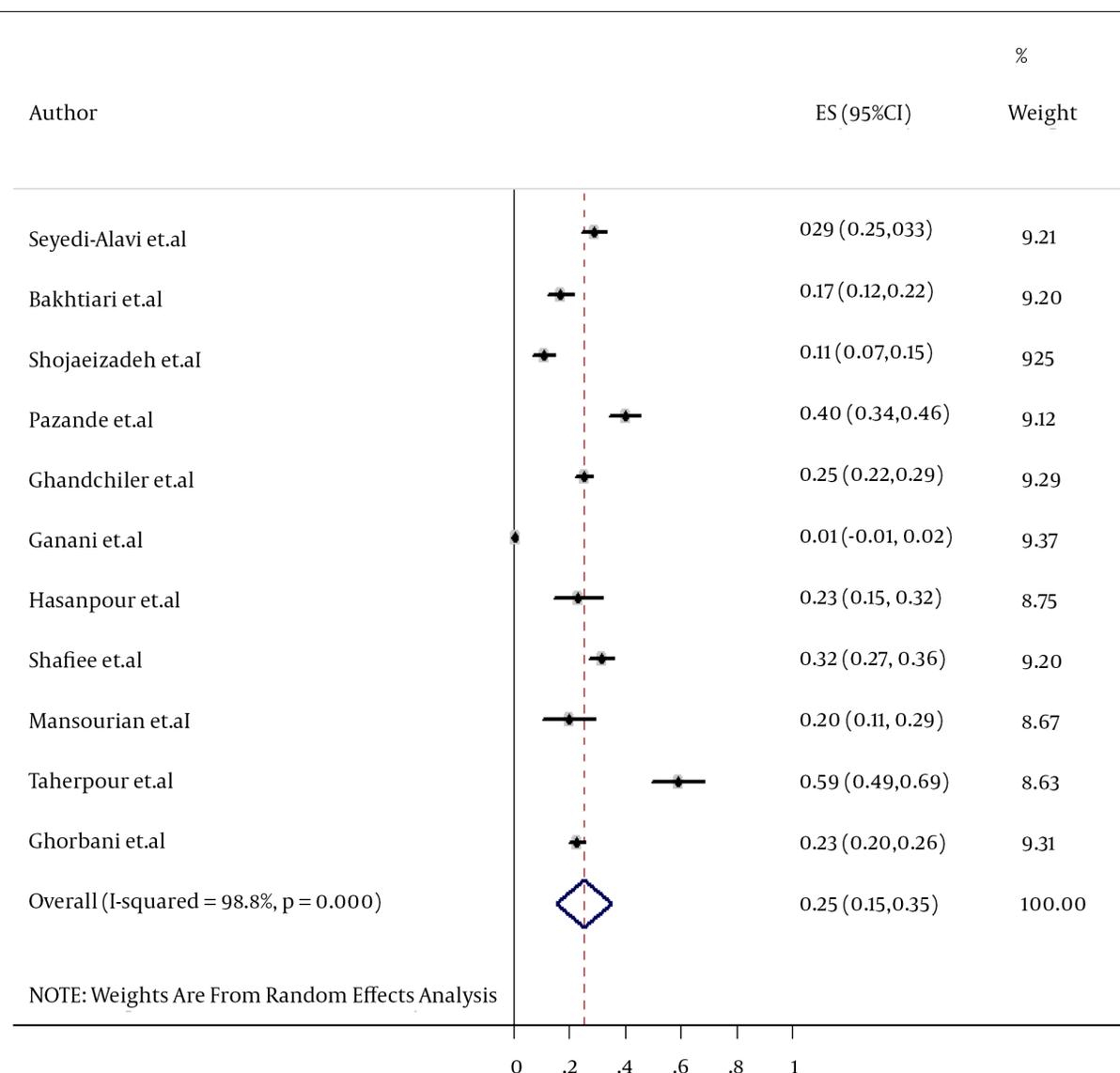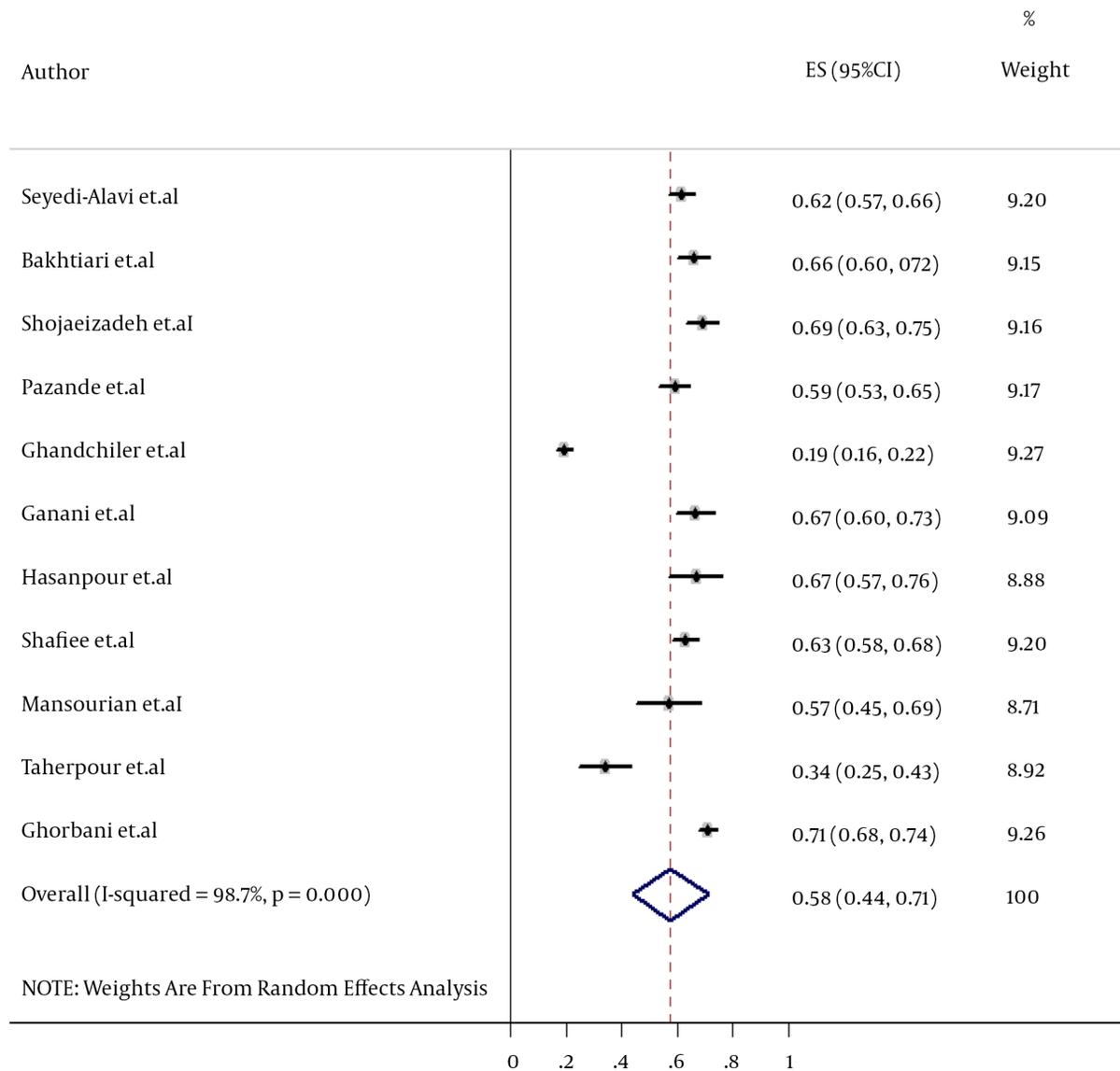
Figure 2. Forest Plot Displaying the Prevalence of Positive Attitudes and 95% CI of Each Study, Their Weight, and Pooled Prevalence (Diamond) Estimated by Random Effect Model Meta-Analysis

more, the complete report of one dissertation could not be found. Also, it is possible that some studies in the grey literature were missed because there was no standard system for recording studies during the last decade in Iran. Finally, only articles in English and Persian were retrieved, so a language bias is evident.

The present systematic review and meta-analysis shows that the majority of Iranian women have neutral attitudes towards menopause. Neutral attitudes may be evidence of limited knowledge regarding the effects of menopause. Therefore, this finding can motivate policy-

makers to design appropriate educational programs for increasing knowledge and awareness about menopause among women.

It is recommended that future studies use standardized questionnaires in order to assess attitudes towards menopause, including the Attitude towards Menopause scale (ATM) (17) or the menopause attitude scale (MAS) (54). However previous study showed that only 10.52 % of published studies had been used of the standard questionnaire (55). It is also advised that qualitative studies be designed to explore more in-depth insights, perceptions, and

| | | | | % |
| Author | | ES (95%CI) | | Weight |

Seyedi-Alavi et.al	0.62 (0.57, 0.66)	9.20
Bakhtiari et.al	0.66 (0.60, 072)	9.15
Shojaeizadeh et.al	0.69 (0.63, 0.75)	9.16
Pazande et.al	0.59 (0.53, 0.65)	9.17
Ghandchiler et.al	0.19 (0.16, 0.22)	9.27
Ganani et.al	0.67 (0.60, 0.73)	9.09
Hasanpour et.al	0.67 (0.57, 0.76)	8.88
Shafiee et.al	0.63 (0.58, 0.68)	9.20
Mansourian et.al	0.57 (0.45, 0.69)	8.71
Taherpour et.al	0.34 (0.25, 0.43)	8.92
Ghorbani et.al	0.71 (0.68, 0.74)	9.26
Overall (I-squared = 98.7%, p = 0.000)	0.58 (0.44, 0.71)	100

NOTE: Weights Are From Random Effects Analysis

0   .2   .4   .6   .8   1

Figure 3. Forest Plot Displaying the Prevalence of Neutral Attitudes and 95% CI of Each Study, Their Weight, and Pooled Prevalence (Diamond) Estimated by Random Effect Model Meta-Analysis

perspectives of Iranian women towards menopause.

Footnote

Authors' Contribution: Narjes Bahri, Robab Latifnejad Roudsari, and Ramin Sadeghi had the original idea. Narjes Bahri and Robab Latifnejad Roudsari conceptualized the
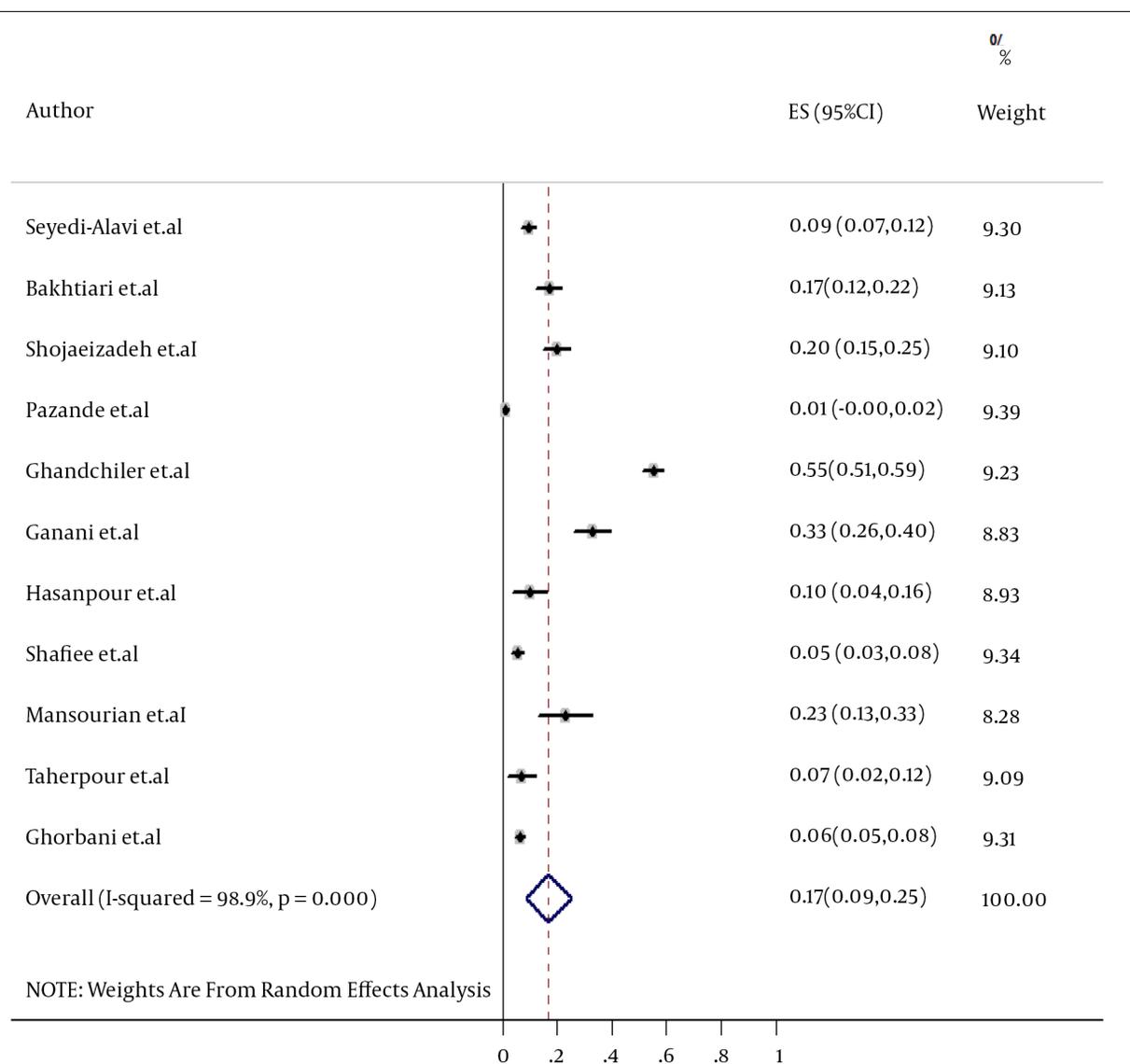
Figure 4. Forest Plot Displaying the Prevalence of Negative Attitudes and 95% CI of each Study, Their Weight, and Pooled Prevalence (Diamond) Estimated by Random Effect Model Meta-Analysis

systematic review, and screened the citations. Narjes Bahri and Robab Latifnejad Roudsari extracted the data. Hamid Reza Tohidinik and Ramin Sadeghi analyzed the data. Narjes Bahri, Robab Latifnejad Roudsari, and Hamid Reza Tohidinik drafted the manuscript. All authors revised and approved of the final version of the article for publication.

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Table 3. Characteristics of Included Studies

Studies	Design	Setting	Sample Size	Age of Sample	Sampling Method	Questionnaire	Attitudes	Score
Seyedi-Alavi et al. (1998) (30)	Cross-sectional study	Mashhad	400	45 - 60 years	Cluster sampling	Self-structured	Positive = 29%; Neutral = 61.5%; Negative = 9.6%	15
Eftekhari et al. (1999) (31)	Cross-sectional study	Tehran	400	40 - 45 years	Quota sampling	Self-structured	Negativ e= 51.3 - 56.2%	10
Jamshidimanesh et al. (1999) (32)	Correlational study	Tehran	190	20 - 52 years	Stratified sampling	Self-structured	Positive = 100%	13
Bakhtiari et al. (2000) (33)	Cross-sectional study	Babol	250	31.4 ± 6.8 years	Census	Self-structured	Positive = 17%; Neutral = 66%; Negative = 17%	13
Shojaeizadeh et al. (2002) (34)	Cross-sectional study	Tehran	250	50 - 60 years	Convenience sampling	Self-structured	Positive = 11%; Neutral = 69%;Negative = 20%	11
Pazande et al. (2003) (35)	Cross-sectional study	Kermanshah	300	56.5 ± 4.9 years	Stratified sampling	Self-structured	Positive = 40.3% Neutral = 59.7%; Negative = 0%	10
Ghandchiler et al. (2003) (36)	Cross-sectional study	Tabriz	700	47.38 ± 5.54 years	N/A	Self-structured	Positive = 25.45%;Neutral=19.42%; Negative = 55.13%	8
Khademi et al. (2003) (37)	Cross-sectional study	Tehran	119	N/A	Convenience sampling	Menopause attitude scale (developed by Bowles)	Mean Score: 18.80 - 20.30	14
Rostami et al. (2003) (38)	Semi-experimental (Pre-Posttest)	Rey	50	45 - 55 years	Convenience sampling	Self-structured	Mean Score: 19.6 ± 11.3	12
Ganani (2003) (39)	Correlational study	Khoramabad	180	50 - 55 years	Convenience sampling	Self-structured	Positive = 0.6%; Neutral = 66.6%; Negative = 32.8%	15
Ghebe et al. (2005) (41)	Semi-experimenta (Pre-Posttest)	Tehran	90	30 - 50 years	Stratified sampling	Self-structured	Mean Score: 50.96	13
Hasanpour et al. (2006) (42)	Semi-experimental (Pre-Posttest)	Mashhad	90	40 - 60 years	Convenience sampling	Self-structured	Positive = 23.3%; Neutral = 66.7%; Negative=10%	13
Shafiee et al. (2006) (40)	Semi-experimental (Pre-Posttest)	Guilan	386	20 - 50 years	Multistage sampling	Self-structured	Positive = 31.6%; Neutral = 63%; Negative = 32.8%	9
Mansourian et al. (2007) (43)	Semi-experimenta (Pre-Posttest)	Gorgan	70	31.6 years	Cluster sampling	Self-structured	Positive = 31.6%; Neutral= 63%; Negative= 23.1%	11
Hedayati et al. (2009) (44)	Cross-sectional study	Birjand	107	> 40 years	Census	Self-structured	Mean Score: 60	13
Ghaderi et al. (2010) (45)	Cross-sectional study	Shiraz	378	54.9±5.5 years	Cluster sampling	Attitude Towards Menopause scale (ATM)	Mean Score: 102 ± 11.8	16
Mohammadi Zeidi et al. (2013) (46)	Semi-experimental (Pre-Posttest)	Ghazvin	100	51.33 ± 4.13 years	Random allocation	Self-structured	Mean Score: 14.34 ± 4.31	12
Taherpour et al. (2013) (47)	Semi-experimental (Pre-Posttest)	Ghazvin	100	45 - 60	Random allocation	Self-structured	Positive = 59 %; Neutral=34 % Negative = 7 %	13
Noroozi et al. (2013) (48)	Cross-sectional study	Isfahan	400	40 - 45	Cluster sampling	Self-structured	Positive = 81.5 %; Negative = 18.5 %	14
Ghorbani et al. 2014 (49)	Cross-sectional study	Semnan	747	45 - 60	Multistage Sampling	Self-structured	Positive = 22.8 %; Neutral = 71 %; Negative = 6.2%	12
Zargar-shoushtari et al. (2014) (50)	Cross-sectional study	Ahvaz	400	40 - 60	Convenience sampling	Self-structured	Positive = 85.5 % Negative = 14.5 %	13