Hemşirelik Bilimi Dergisi

Journal of Nursing Science

http://dergipark.gov.tr/hbd

e-ISSN:2636-8439

DOI: https://doi.org/10.54189/hbd.1275435

**Systematic Review**

# Using Maca (Lepidium Meyenii) to Treat Sexual Dysfunction in Menopausal Women: A Systematic Review

# Menopozal Dönemdeki Kadınlarda Cinsel Disfonksiyonu Tedavi Etmek İçin Maca (Lepidium Meyenii) Kullanımı: Sistematik Derleme

Belma TOPTAŞ ACAR *[,a], Emine GERÇEK ÖTER [b],

[a] *Res. Assist. Dr.,* Aydın Adnan Menderes University, Faculty of Nursing, Department of Obstetrics-Gynecology and Diseases Nursing, AYDIN, TÜRKİYE

[b] *Prof. Dr.,* Aydın Adnan Menderes University, Faculty of Nursing, Department of Obstetrics-Gynecology and Diseases Nursing, AYDIN, TÜRKİYE

**ABSTRACT**

**Background:** With an increase in life expectancy and elderly population in the world, women experience a longer postmenopausal period and more menopausal symptoms. Maca can be used to cope with these symptoms. Maca plant is used to treat female sexual dysfunction. Maca belongs to the Cruciferous family and is cultivated in Peru. This systematic review aimed to determine the effects of maca on the treatment of sexual dysfunction during menopause.

**Methods:** Searches in this systematic review were made from the Web of Science, PubMed, Scopus, Cochrane and EBSCOhost search engines between November and December 2022. The keywords lepidium meyenii, maca, lepidium meyenii and sexual dysfunction, lepidium meyenii and menopause, maca and sexual dysfunction, maca and menopause were used in the searches. Randomized controlled studies published in English in the years 2000-2022 were reviewed in the systematic review.

**Results:** Three studies involving a total of 85 participants were reviewed. In one study, it was found that maca increased sexual desire, in one study maca did not affect sexual desire, and in another study, maca improved sexual arousal and orgasm.

**Conclusion:** It was concluded that the use of maca has an effect on sexual dysfunctions.

**Keywords:** Lepidium Meyenii, Maca, Menopause, Sexual Dysfunction, Woman

**ÖZET**

**Giriş:** Dünyada ve ülkemizde yaşlı nüfusun artması ile kadınların menopoz sonrası yaşadıkları dönem uzamakta ve kadınlar daha fazla menopozal semptomlara maruz kalmaktadırlar. Bu semptomlarla baş edebilmek için maca kullanılabilmektedir. Maca bitkisi kadın cinsel disfonksiyonu tedavi etmek için kullanılır. Maca, turpgiller familyasına aittir ve Peru'da yetişmektedir. Bu sistematik derleme, maca'nın menopoz dönemindeki cinsel disfonksiyonun tedavisindeki etkilerini belirlemeyi amaçladı.

**Yöntem:** Bu sistematik derlemede taramalar Kasım-Aralık 2022 tarihleri arasında Web of Science, PubMed, Scopus, Cochrane ve EBSCOhost arama motorlarından yapıldı. Taramalarda lepidium meyenii, maca, lepidium meyenii ve sexual dysfunction, lepidium meyenii ve menopause, maca ve sexual dysfunction, maca ve menopause anahtar kelimeleri kullanıldı. Sistematik derlemede 2000-2022 yıllarında İngilizce olarak yayınlanan randomize kontrollü çalışmalar incelendi.

**Bulgular:** Toplam 85 katılımcıyı içeren 3 çalışma incelendi. Bir çalışmada macanın cinsel isteği arttırdığı, bir çalışmada macanın cinsel istek üzerinde etkili olmadığı, bir diğer çalışmada ise macanın cinsel uyarılma ve orgazmı iyileştirdiği saptandı.

**Sonuç:** Maca kullanımının cinsel fonksiyon bozukluklarında etkisinin olduğu sonucuna ulaşıldı.

**Anahtar Kelimeler:**Lepidium Meyenii, Maca, Menopoz, Cinsel disfonksiyon, Kadın

* Corresponding Author: Belma TOPTAŞ ACAR

Addresses: Aydın Adnan Menderes University, Faculty of Nursing, Department of Obstetrics-Gynecology and Diseases Nursing, AYDIN, TÜRKİYE

E-mail: belma.toptas@adu.edu.tr

Received Date: 01.04.2023 Accepted Date:12.09.2023

## INTRODUCTION

With an increase in life expectancy and elderly population in the world, women experience a longer postmenopausal period and more menopausal symptoms. The age to enter menopause ranges from 50 to 52 years in the world (Royal College of Obstetrıcs and Gynecology, 2022; The American College of Obstetricians and Gynecologists, 2020). According to the results of Turkey Population and Health Survey in 2018, 45.1% of the women aged 48-49 years and 10.3% of women aged 30-49 years go through menopause (Turkey Population and Health Survey, 2018).

Depending on decreased estrogen during menopause, physical and psychological changes, mood swings and vasomotor, urogenital and emotional symptoms occur in the female body (Erbil, 2018; Ünsal Atan & Yiğitoğlu, 2015). Physical and psychological changes in premenopausal, perimenopausal and postmenopausal periods cause a decrease in sexual desire, sexual arousal and satisfaction, orgasmic dysfunction, lack of lubrication and dyspareunia (Aslan Demirtaş et al., 2022; Liu et al., 2015). The prevalence of sexual dysfunction in postmenopausal women is reported to vary from 68% to 86.5%.

Women utilize various treatment methods to live comfortably and to cope with changes during menopause, one of the long, valuable stages of life. They prefer complementary therapy rather than hormone replacement therapy due to their worries about an increase in the risk of cancer, breast tenderness, headache and abnormal uterine bleeding dyspareunia (Aslan Demirtaş et al., 2022; Baber et al., 2016; Brotto, 2017; Engin & Aydın Kartal, 2020; Liu et al., 2015). Phytotherapy, a type of complementary therapy, can be used to relieve menopausal symptoms. In addition to the plants Tribulus Terrestris, Yohimbin, Ginseng, Crocus Sativus, Ashwagandha, Mucuna Pruriens, Muira Puama, Ginkgo, Damiana and Black Cohosh, maca is frequently used to treat female sexual dysfunction. Maca belongs to the Brassicaceae family and is cultivated in Peru. It grows on the Andes as high as 4000 meters and has a straight stem over the ground and hypocotyls and roots under the ground. There are three types of maca based on its white, yellow and black hypocotyls. Naturally dried hypocotyls have long been utilized for its aphrodisiac effects, to improve fertility and to treat women with menopause (e.g. improvement of libido and general well-being). Treating sexual problems with maca has gained popularity in North America especially in recent years. Sterols found in maca can increase the production of hormones creating aphrodisiac effects (Beharry & Heinrich, 2018; Rowland & Tai, 2003; Shin et al., 2010). In a study with 17 women and three men, sexual dysfunction was alleviated in the participants given 3gr maca per day for 12 weeks (n=12), but no improvement was observed in the participants given 1,5gr maca per day for 12 weeks (n=12). It was concluded that effects of maca on sexual dysfunction could be dose-dependent (Dording et al., 2008). Maca has not been reported to have many side-effects and has been considered as a reliable plant. However, its optimum dose or side-effects are not known precisely (Rowland & Tai, 2003; Shin et al., 2010). To our knowledge, there is only one systematic review of studies on the effects of maca on the treatment of sexual dysfunction performed through April 2010 (Shin et al., 2010). Therefore, the present review is significant in terms of updating available evidence and contributing to the relevant literature. The findings of the present systematic review on the effects of maca on the treatment of sexual dysfunction during menopause will contribute to the relevant literature, healthcare practices related to sexual dysfunction and scientific studies in the future.

This systematic review aimed to determine the effects of maca on the treatment of sexual dysfunction during menopause. To achieve this aim, answers to the following questions were sought:

1. Does using maca during menopause have an effect on sexual desire?

2. Does using maca during menopause have an effect on sexual arousal?

3. Does using maca during menopause have an effect on orgasm?

## MATERIALS AND METHODS

A systematic review was carried out to reveal the effect of maca on the treatment of sexual dysfunction in menopausal women. Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) 2020 guidelines were followed for writing a systematic review (Page et al., 2020).

### Search Strategy

It was searched in the databases Web of Science, PubMed (including MEDLINE), Scopus, Cochrane and EBSCOhost to access randomized controlled studies published in the English language between 2000 and 2022. Data was collected between November-December in 2022. The keywords were searched from Medical Subject Heading (MeSH) terms. Keywords and their synonyms were combined using the following search string: (Menopausal Women OR Women OR Menopause AND Sexual Dysfunction (Desire OR Pleasure) AND (Improvement OR Recovery OR Recruitment) AND (Maca OR Lepidium Meyenii Walp OR Lepidium Meyenii OR L. Meyenii) AND Randomized Controlled Trial OR Randomized Controlled Study.

Menopausal Women OR Women OR Menopause AND Sexual Dysfunction (Orgasm OR Female Orgasm) AND (Improvement OR Recovery OR Recruitment) AND (Maca OR Lepidium Meyenii Walp OR Lepidium Meyenii OR L. Meyenii) AND Randomized Controlled Trial OR Randomized Controlled Study.

Menopausal Women OR Women OR Menopause AND Sexual Dysfunction (Sexual Arousal) AND (Improvement OR Recovery OR Recruitment) AND (Maca OR Lepidium Meyenii Walp OR Lepidium Meyenii OR L. Meyenii) AND Randomized Controlled Trial OR Randomized Controlled Study).

### Eligibility criteria

The PICOS (population, intervention, comparison, outcome, study design) framework was used to establish inclusion and exclusion criteria in this review (Centre for Reviews and Dissemination, 2009).

**Table 1. Inclusion and exclusion criteria**

| PICOS | Inclusion Criteria | Exclusion Criteria |
|---|---|---|
| **Population** | The studies with a target population including menopausal women amenorrhoeic for 12 months or longer. | The studies including menopausal women but not dealing with sexual dysfunction or studies dealing with sexual dysfunction but not including menopausal women. The studies including women receiving hormone replacement therapy in the prior six months were also excluded. |
| **Intervention** | Interventions involving the use of maca (maca powder, roots or capsules) for 6-12 weeks | Interventions without the use of maca |
| **Comparison** | Placebo exactly looking like maca | Herbal agents frequently used to treat sexual dysfunction like Ginseng, Tribulus Terrestris, Yohimbin, Crocus Sativus, Mucuna Pruriens, Muira Puama, Ginkgo, Damiana and Black Cohosh |
| **Outcome** | Primary outcomes will be sexual desire/pleasure, sexual arousal and orgasm | Outcome measures that have not been recorded before and after using maca |
| **Study design** | Randomized controlled studies | All studies conducted before 2000 |

### Data screening and extraction

The studies with an unknown design, without a full text, based on observations or animal experiments and using maca for the treatment of conditions other than menopause were excluded. Only the studies dealing with the effects of maca on sexual dysfunction (sexual desire, sexual arousal and orgasm related dysfunction) in menopausal women were selected for the present systematic review. In the first stage of the study, summaries, titles and keywords in databases were examined through MeSH terms and key words and duplicated studies were extracted. Next, the researchers evaluated all the articles by reading the title and abstract. Then the articles with the potential to meet the inclusion criteria were read thoroughly and kept to evaluate their eligibility. Figure 1 presents the flow chart for selection of the studies included in the systematic review. Eligibility evaluation and data extraction were performed by two researchers independently. The data extraction form was composed of items about authors, year of publication, study design, sample size, number of cases, country where the studies were conducted, mean age, type of intervention and effects on sexual dysfunction in menopausal women. The researchers discussed discrepancies and reached consensus.

### Assessment of methodological quality

The methodological quality of the studies included in the present systematic review was assessed by using checklists prepared by Joanna Briggs Institute. The quality of the randomized controlled studies was assessed with a 13-item checklist. Assessment of each item is made by marking “yes”,

"no" or "unclear" and "inapplicable". This procedure was followed for each study and carried out independently by two researchers. The authors' independent assessments were compared. Any disagreement between the authors was resolved by consensus and cooperation. The findings from the assessment of each study are shown in Table 3.

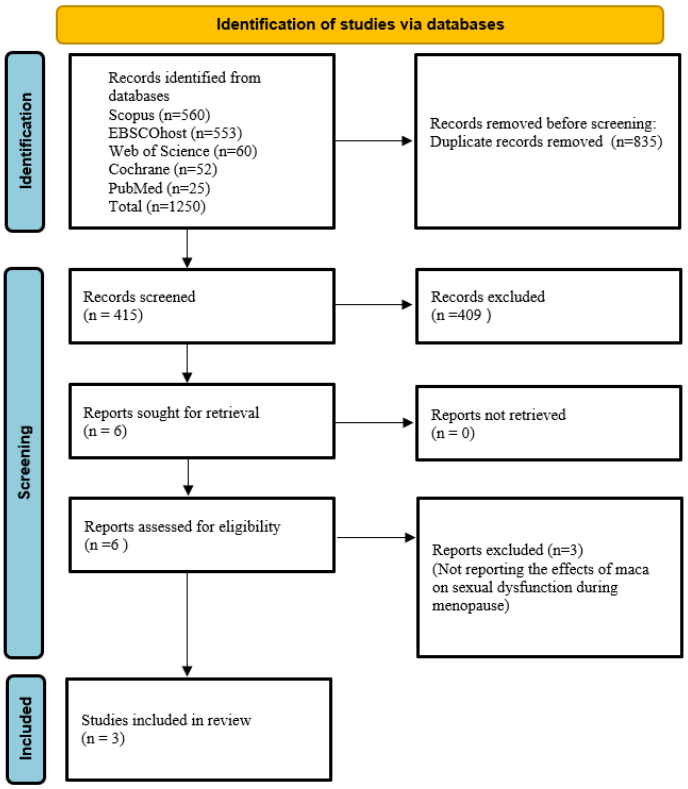


**Figure 1**. PRISMA flow diagram.

## Synthesis of Data

It can be utilized to synthesize both quantitative and qualitative studies and when results of experimental and quasi-experimental studies included in a systematic review are not sufficiently similar to conduct a meta-analysis (Ryan, 2013; Snilstveit et al., 2012). The studies included in the present systematic review displayed differences in study design, type, dose and duration of maca use, effects of maca on sexual dysfunction in menopausal women and data collection methods. Therefore, the results of the studies were presented by using narrational synthesis.

## RESULTS

In this section, firstly, the characteristics of the studies included in the systematic review are presented. Then, the findings of the studies evaluating whether the use of maca is effective on sexual desire, sexual arousal and orgasm are presented.

## Study Characteristics

Characteristics of three studies including a total of 85 participants, carried out in China, the USA and Australia and published between 2008 and 2015 are presented in Table 1. Data collection was performed by using Greene Climacteric Scale (GCS), The SF-36 Health Survey, The Women's Health Questionnaire (WHQ), Utian Quality of Life Questionnaire, Arizona Sexual Experience (ASEX) and the Questionnaire of Sexual Function of the Massachusetts General Hospital (MGH-SFQ). The women included in the studies were experiencing premenopausal and postmenopausal periods and their mean age was over 41 years.

## Assessment Risk of Bias

The bias risk of all three studies included in this systematic review was classified into three: low, uncertain and high (Higgins et al., 2021) (Figure 2). The risk of biases related to concealing of information about randomization, missing data, reporting and other biases was low in all three studies. The risk of bias related to allocation sequence and blinding of participants and staff was uncertain in one study. The risk of bias related to blinding of outcome assessment was also uncertain in all three studies.

| | Insufficient generation of allocation sequence (selection bias) | Concealing of information about allocation (selection bias) | Blinding of participants and staff (performance bias) | Blinding of outcome assessment (detection bias) | Missing data (attrition bias) | Selective reporting (reporting bias) | Other biases |
|---|---|---|---|---|---|---|---|
| Stojanovska et al., 2015 | + | + | + | ? | + | + | + |
| Dording et al., 2015 | ? | + | ? | ? | + | + | + |
| Brooks et al., 2008 | + | + | + | ? | + | + | + |

**Figure 2.** Assessment of bias risk: +: low risk;?: uncertain risk; -: high risk.

## Effects of maca on sexual dysfunction

Menopause is an important stage of life for women and many aspects of their life and health are affected. Sexual dysfunction is one of the most frequently experienced menopausal symptoms. In three studies fulfilling the criterion of using maca alone, the effects of this plant on female sexual

dysfunction were examined in the premenopausal (Brooks et al., 2008) and postmenopausal periods (Brooks et al., 2008; Dording et al., 2015; Stojanovska et al., 2015). Obtained findings were presented below.

**Effects of maca on sexual desire**

Out of three studies included in this systematic review, two examined the effects of maca on sexual desire. In the randomized controlled study performed by Stojanovska et al. (2015) in China, maca 3.3 g/day for six weeks did not create an increase in sexual desire in postmenopausal women. However, in the randomized controlled study conducted by Brooks et al. in Australia (2008), maca 3.5 g/day for six weeks improved sexual desire in 14 healthy postmenopausal women. The score on the subscale of sexual problems in GCS was reported to be 34.6% after maca intake, which showed a significant decrease in sexual problems.

**Effects of maca on sexual arousal**

One of three studies examined the effect of maca on sexual arousal. The study had a placebo-controlled design and was performed on 45 women with sexual dysfunction by Dording et al. in the USA (2015). Maca 3 g/day for 12 weeks was shown to improve sexual arousal in premenopausal women but did not produce any effects on sexual arousal in postmenopausal women. The total score on ASEX was ≤ 10 (9.5% for the maca group and 4.8% for the placebo group) and the score on MGH-SFQ was ≤ 12 (30.0% for the maca group and 20.0% for the placebo group). Using maca was shown to be effective in sexual arousal.

**Effects of maca on sexual orgasm**

In two of three studies reviewed, the effect of maca on orgasm was investigated. Dording et al. found in their study in 2015 that orgasm became better in postmenopausal women but did not change in premenopausal women. Brooks et al. (2008) revealed an improvement in orgasm. In fact, they reported that the total score on ASEX was ≤ 10 (9.5% of the maca group and 4.8% of the placebo group) and that the score on MGH-SFQ was ≤ 12 (30% for the maca group and 20.0% for the placebogroup).

**Table 3. Characteristics and results of the studies using maca to treat sexual dysfunction and included in the systematic review**

| Authors (year) | Study Design | Data Collection Tools | Country | Intervention | Sample Size | Mean Age (SD) | Sample Characteristics | Main Results | Quality Score* |
|---|---|---|---|---|---|---|---|---|---|
| **Stojanovska et al., 2015** | A single-center, randomized, double-blind, placebo-controlled, crossover trial | Hormone profile, Greene Climacteric Scale (GCS), SF-36, The Women's Health Questionnaire (WHQ), Utian Quality of Life Questionnaire | China | Each participant was given a maca capsule 3.3 g/day or a placebo capsule looking like maca capsules for six weeks. | Maca group:15 Placebo group: 14 | 52.4± 2.7 | 34 postmenopausal women experiencing menopausal symptoms, amenorrhoeic for 12 months or more and aged 46 -59 years | The postmenopausal women taking capsules of 3.3 g maca powder for 6 weeks did not experience an improvement in sexual desire. | **Yes 11/13 No 2/13** |
| **Dording et al., 2015** | Randomized, double-blind, placebo-controlled study | Arizona Sexual Experience (ASEX) and the Questionnaire of Sexual Function of the Massachusetts General Hospital (MGH-SFQ) | USA | 45 female outpatients with sexual dysfunction were given maca roots 3g/day for 12 weeks. | Maca group: 21 (14 premenopausal women and 7 postmenopausal women) Placebo group: 21 (16 premenopausal women and 5 postmenopausal women) | 41.5 ± 12.5 | Women taking SSRI, venlafaxine or tri/heterocyclic antidepressant in stabile doses for at least 4 weeks for the treatment of depression, experiencing clinically marked sexual arousal disorder or orgasm disorder for at least four weeks appearing after taking the currently prescribed antidepressant, having a kind of regular sexual activity minimum twice a month before treatment with an antidepressant and willing to continue to have sexual activity once a week during the study. | Maca was shown to improve orgasm in postmenopausal women, but did not affect orgasm in premenopausal women. Maca was found to improve sexual arousal in premenopausal women (but not in postmenopausal women). | **Yes 11/13 Uncertain 2/13** |
| **Brooks et al., 2008** | Randomized, double-blind, placebo-controlled, crossover study | Hormone profile, Greene Climacteric Scale (GCS) | Australia | 14 postmenopausal women were randomly assigned into two crossover groups. They received either maca powder 3,5 g/day or a placebo looking like maca powder for 6 weeks. Maca was put in cereals, soup or milkshake. | Maca group:7 Placebo group:7 | 53.5 ± 10.8 | 16 healthy postmenopausal women aged 50-60 years, experiencing menopausal symptoms and amenorrhoeic for 12 months | Using maca 3.5 g/day was shown to increase sexual drive in postmenopausal women regardless of estrogenic and androgenic activity). | **Yes 9/13 No 1/13 Uncertain 3/13** |

## DISCUSSION

In this systematic review, the effects of using maca on sexual dysfunction during menopause were reviewed based on a limited number of studies fulfilling the inclusion criteria. In the studies, maca roots, capsules and powder were used in the doses of 3-3.5 g/day for 6 or 12 weeks. As an important stage of life, menopause affects many aspects of women's life and health. It is also a well-known fact that sexual functioning is affected by menopause. Women adopt both pharmacological and nonpharmacological methods to treat sexual dysfunction during menopause. Brooks et al. (2008) revealed that the use of maca increases sexual desire in postmenopausal women. On the other hand, Stojanovska et al. (2015) revealed that uthe use of maca had no impact on sexual desire in postmenopausal women. The reason for different results in studies may be maca usage dose or sociodemographic characteristics.

It has been reported in the literature that the frequency of sexual arousal decreases in menopausal women (Aslan Demirtaş et al., 2022; Kömürcü & İşbilen, 2011). Dording et al. (2015) found that use of maca improved sexual arousal in premenopausal women, but did not create any effects on sexual arousal in postmenopausal women. The lack of an effect of maca on sexual arousal in postmenopausal women can be ascribed with the dose of maca, time of maca intake, duration of maca use or a sociodemographic factor. Regarding orgasm during menopause, several studies have revealed a decrease in orgasm among menopausal women (Aslan Demirtaş et al., 2022; Bozkurt & Sevil, 2016; Kömürcü & İşbilen, 2011). Dording et al. (2015) showed that using maca did not make a difference in orgasm in premenopausal women, but improved orgasm in postmenopausal women. In study by Dos Reis et al. (2018), postmenopausal women in the intervention reported that maca significantly improved sexual desire, sexual arousal and orgasm and significantly decreased dyspareunia in 90 days. Since only Abstract of the study by Dos Reis et al. was published in the English language, it could not be included in the present systematic review. However, their study is important in that its results point out to positive effects of maca on sexual functioning. The studies examined in the current review revealed positive outcomes of using maca. The findings of this review are significant since they showed that using maca alone can offer positive effects on sexual functioning in menopausal women.

### *Limitations of The Study*

This systematic review has some limitations. First, the number of randomized controlled studies about the effects of maca on sexual dysfunction was limited. Second, only studies published in the English language were included and studies published in other languages could not be reviewed. Third, effects of using maca on sexual dysfunction in menopausal women were assessed by using different measurement tools. Therefore, the results of this review may display differences compared to evidence likely to be obtained through standardized measurement tools and evaluations made by clinical specialists. Finally, the dose, form and duration of maca differ between the studies.

## CONCLUSION

In two studies, using maca has been observed to treat or alleviate sexual dysfunction (sexual desire, sexual arousal and orgasm-related dysfunction). But available evidence about doses, duration and long-term effects of maca is insufficient. Further studies should focus on the effects of using maca in doses of minimum 3 g/day for at least 12 weeks on sexual functioning in menopausal women to provide stronger support and to confirm the currently available evidence. It is necessary to conduct randomized, controlled studies with a well-defined methodology and meta-analyses on these randomized, controlled studies to obtain sufficient evidence to recommend maca for the improvement of sexual functioning in menopausal women.

### *Funding*

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

### *Data Availability Statement*

The data that support the findings of this study are available from the corrosponding author upon reasonable request.

### *Disclosure Statement*

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## REFERENCES


1. Aslan Demirtaş, F. A., Fırat, B., Sahin, N. (2022). Menopoz ve cinsel yaşam: Sistematik derleme. Androloji Bülteni (Andrology Bullettin), 24(2), 155-162.
2. Baber, R., Panay, N., Fenton, A. (2016). IMS Recommendations on women's midlife health and menopause hormone therapy (MHT), Climacteric, 19 (2), 109- 150.
3. Beharry, S., Heinrich, M. (2018). Is the hype around the reproductive health claims of maca (Lepidium meyenii Walp.) justified?. Journal of Ethnopharmacology, 211, 126-170. doi:10.1016/j.jep.2017.08.003.
4. Bozkurt, Ö. D., Sevil, Ü. (2016). Menopoz ve cinsel yaşam. Celal Bayar Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi, 3(4), 497-503.
5. Brooks, N. A., Wilcox, G., Walker, K. Z., Ashton, J. F., Cox, M. B., Stojanovska, L. (2008). Beneficial effects of Lepidium meyenii (Maca) on psychological symptoms and measures of sexual dysfunction in postmenopausal women are not related to estrogen or androgen content. Menopause, 15(6), 1157-1162.
6. Brotto, L. A. (2017). Evidence-based treatments for low sexual desire in women. Frontiers in Neuroendocrinology, 45, 11-17. doi:10.1016/j.yfrne.2017.02.001.
7. Centre for Reviews and Dissemination, University of York. (2008). Systematic Reviews CRD's guidance for undertaking reviews in health care https://www.york.ac.uk/media/crd/Systematic_Reviews.pdf
8. Dording, C. M., Fisher, L., Papakostas, G., Farabaugh, A., Sonawalla, S., Fava, M., Mischoulon, D. (2008). A double-blind, randomized, pilot dose-finding study of maca root (L. meyenii) for the management of SSRI-induced sexual dysfunction. CNS Neuroscience & Therapeutics, 14(3), 182-191. doi:10.1111/j.1755-5949.2008.00052.x.
9. Dording, C. M., Schettler, P. J., Dalton, E. D., Parkin, S. R., Walker, R. S., Fehling, K. B., Mischoulon, D. (2015). A double-blind placebo-controlled trial of maca root as treatment for antidepressant-induced sexual dysfunction in women. Evidence-Based Complementary and Alternative Medicine, 1-9. doi:10.1155/2015/949036.
10. Dos Reis, B. F., Rolim Lima, S. M., Silva, G. M. D., Postigo, S., Francisco, A. M. C., Barbosa, L. C. R., Brunet Filho, O. (2018). The effects of Lepidium meyenii Walp (Peruvian maca) on the sexual function of postmenopausal women. Menopause (New York, N.Y.). 25(12) (2018) 1518. doi:10.1097/GME.0000000000001251.
11. Eftekhar, T., Dashti, M., Shariat, M., Haghollahi, F., Raisi, F., Ghahghaei-Nezamabadi, A. (2016). Female sexual function during the menopausal transition in a group of Iranian women. Journal of Family & Reproductive Health, 10(2), 52.
12. Engin, B., Aydın Kartal, Y. (2020). Menopozal semptomlar ile baş etmede kullanılan tamamlayıcı ve alternatif tedavi yaklaşımları. Journal of Health Professionals Research, 2(2), 80-87.
13. Erbil, N. (2018). Attitudes towards menopause and depression, body image of women during menopause. Alexandria Journal of Medicine, 54(39), 241-246. doi:10.1016/j.ajme.2017.05.012.
14. Higgins JPT, Thomas J, Chandler J, Cumpston M, Li T, Page MJ, Welch VA (editors). Cochrane Handbook for Systematic Reviews of Interventions version 6.2 (updated February 2021). Cochrane, 2021, https://training.cochrane.org/handbook
15. Kömürcü, N., İşbilen, A. (2011). Adaptation of women to sexual life during the postmenopausal period/Postmenopozal dönemde kadınların cinsel yaşama uyumu. Turkish Journal of Urology, 37(4), 326-331.
16. Liu, P., Yuan, Y., Liu, M., Wang, Y., Li, X., Yang, M., Yao, C. (2015). Factors associated with menopausal symptoms among middle-aged registered nurses in Beijing. Gynecological Endocrinology, 31(2), 119-124. doi:10.3109/09513590.2014.971237.
17. Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D, Moher, D. (2021).
18. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. Systematic reviews, 10(1), 1-11.
19. Rowland, D. L., Tai, W. (2003). A review of plant-derived and herbal approaches to the treatment of sexual dysfunctions. Journal of Sex &Marital Therapy, 29(3), 185-205.
20. Royal College of Obstetrıcs and Gynecology. (2022). Menopause -a life stage. https://www.rcog.org.uk/en/patients/menopause/menopause---a-life-stage
21. Ryan, R. (2013). Cochrane Consumers and Communication Review Group. Cochrane consumers and communication review group: data synthesis and analysis, Cochrane consumers and communication review group. 1–5.
22. Shin, B. C., Lee, M. S., Yang, E. J., Lim, H. S., Ernst, E. (2010). Maca (L. meyenii) for improving sexual function: a systematic review. BMC Complementary and Alternative Medicine, 10(1), 1-6.
23. Snilstveit, B., Oliver, S., Vojtkova, M. (2012). Narrative approaches to systematic review and synthesis of evidence for

international development policy and practice. Journal of Development Effectiveness, 4(3), 409-429. doi:10.1080/19439342.2012.710641.

**24.** Stojanovska, L., Law, C., Lai, B., Chung, T., Nelson, K., Day, S., Haines, C. (2015). Maca reduces blood pressure and depression, in a pilot study in postmenopausal women. Climacteric, 18(1), 69-78. doi:10.3109/13697137.2014.929649

**25.** Tezce, M.A., Beydağ, K.D. (2021). Menopausal perspective and sexual quality of life of women in menopause menopozdaki kadınların menopoza bakış açısı ve cinsel yaşam kalitesi. Sağlık ve Toplum 31 (1), 175-186.

**26.** The American College of Obstetricians and Gynecologists. (2020). The Menopause Years. https://www.acog.org/womens-health/faqs/the-menopause-years

**27.** Tufanaru, C., Munn, Z., Aromataris, E., Campbell, J., Hopp, L. (2017). Systematic reviews of effectiveness. Joanna Briggs Institute Reviewer's Manual. Adelaide: Joanna Briggs Institute.

**28.** Turkey Population and Health Survey. (2018). http://www.sck.gov.tr/wp-content/uploads/2020/08/TNSA2018_ana_Rapor.pdf

**29.** Ünsal Atan, Ş., Yiğitoğlu, S. (2015). Menopozda semptom yönetimi ile ilgili kanıta dayalı uygulamalar. Uluslararası Hakemli Kadın Hastalıkları ve Anne Çocuk Sağlığı Dergisi, 3, 35-59.