

Sexual Satisfaction during Pregnancy and Its Related Factors: A Scoping Review

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ARTICLE INFO	ABSTRACT
Article type: Review article	Background & aim: Considering the importance of sexual satisfaction in women's lives and its physiological changes during pregnancy, which form the basis of sexual well-being, this study aimed to assess sexual satisfaction in pregnant women and its related factors.
Article History: Received: 26-Aug-2023 Accepted: 22-Nov-2023	Methods: This scoping review was conducted in five steps according to the rules of JBI methodology. A comprehensive search was performed in the databases of PubMed, Scopus, Science Direct, SID, Magiran, Irandoc, and the Google Scholar search engine using keywords including "individual factors," "obstetric factors," "socio-economic factors," "psychological factors," "sexual satisfaction," "couples," "pregnant women," and their Persian equivalents. Relevant studies published between 2010 and 2023 were examined. Among 446 retrieved articles, 13 eligible studies were ultimately reviewed using a qualitative synthesis.
Key words: Sexual Satisfaction Related Factors Women Pregnancy	Results: The findings of the study were classified into four main categories including: 1) individual factors which encompassed age, educational level, duration of marriage, knowledge about sexuality, and the number and pattern of sexual activity during and before pregnancy 2) obstetric and physical health factors included the number of pregnancies and deliveries, gestational age, history of fetal death and abortion, willingness or unwillingness to continue the current pregnancy, and the woman's overall physical health status 3) socio-economic factors comprised of financial status, place of residence, and occupation 4) psychological factors involved sexual dysfunctions with a psychological origin and a history of psychiatric disorders, particularly anxiety disorders. Conclusion: Sexual satisfaction during pregnancy is influenced by multiple factors, which can be categorized to better understand and improve the underlying determinants. Recognizing and addressing these separate categories can help to enhance sexual satisfaction during pregnancy.

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Introduction

Pregnancy is one of the unique experiences throughout the lives of women which has a wide impact on all aspects of a woman's life (1-2). Pregnancy is associated with complex physiological and psychological changes that

affect all aspects of life, including sexual aspect issues (2-3). The changes in sexual relations in pregnant women include physiological and anatomical changes, feeling guilty about having sex during pregnancy and avoiding it, changes in

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body image, feeling less attractive to husband, and fear of the consequences of sexual intercourse on the outcome of pregnancy such as miscarriage, damage to the fetus and premature birth (4-7).

Sexual satisfaction is also defined as an emotional response resulting from a person's subjective assessment of positive and negative dimensions related to sex (8). In general, it is achieved when the wife's level of satisfaction with the level of her expectations about what she deserves to receive exceeds, or when the level of satisfaction for both partners is approximately equal (9-10). Sexual relations during pregnancy undergo significant changes, and consequently, changes may occur in the husband (11). Some studies state that these changes are largely unpredictable and apparently related to various factors (12). In general, the effect of pregnancy on marital relations can be interpreted in two ways (12). Pregnancy sometimes can lead to the deepening of sexual relations in couples, or sometimes it can lead to its separation (13). In a meta-analysis study conducted on 59 studies in the field of sexual activity during pregnancy, the results showed that if couples have enjoyable sexual activity during pregnancy, their family relationships improve up to three years and four months after childbirth, and the relationships will also be more stable (10).

According to the studies, various factors have contributed to the level of sexual satisfaction during pregnancy. The results of a study showed that increasing self-awareness will lead to an increase in the ability to establish sexual relations and strengthen marital relations in pursuit of sexual activity during pregnancy (9). In two studies in 2019, length of marriage (14) and number of sexual intercourses per week (15) were reported as measures of sexual satisfaction. In this context, various factors influence the level of sexual satisfaction, and addressing those factors can help to enhance the positive contributors to sexual satisfaction while mitigating the negative ones.

The current study is a scoping review, which, as its name suggests, is an ideal tool to determine the scope or coverage of a set of studies on a given topic. Scoping reviews are useful for examining emerging evidence. The

goals of scoping studies include identifying existing evidence in a given field, clarifying key concepts or definitions in studies, examining how research is conducted in a specific topic or field, identifying key features or factors related to a concept, serving as a precursor to a systematic review, and identifying and analyzing gaps in knowledge (16-17). A preliminary search of the MEDLINE database of Cochrane systematic reviews showed that no scoping review has been conducted in this field, and since previous studies have neglected to comprehensively and specifically examine the factors related to sexual satisfaction during pregnancy, there is a gap in the available evidence. Therefore, the present scoping review aimed to determine sexual satisfaction in pregnant women and its related factors.

Methods

This scoping review was conducted in five steps according to the rules of JBI methodology. These steps are: 1-Identifying the research question, 2-Searching and identifying relevant studies, 3-Selecting studies, 4-Tabulating and summarizing data, and 5-Reporting the results (17).

Using the mentioned keywords, a total of 446 (441 articles were identified through advanced search and 5 articles through manual search) articles were initially retrieved. Information resource management software (EndNote) was employed to organize the references. Additionally, five articles were identified through manual searching. In the next step, by using EndNote and carefully reviewing the titles and abstracts based on the inclusion criteria, a large number of unrelated articles were excluded. After removing duplicate records, the number of articles was reduced from 324 to 104. Further screening of titles and abstracts led to the exclusion of additional irrelevant studies. After this step, 22 articles remained. Of these, 9 were excluded after abstract review and 2 more after full-text review. Ultimately, 13 studies were selected and included in the systematic review (Figure 1).

Identifying the research question

What are the factors related to sexual satisfaction in pregnant women?

Keyword extraction

The researchers used the following keywords and their Persian equivalents in the search strategy: "Pregnant women" AND "Sexual satisfaction" AND ("Relationship" OR "Related factors") "Cultural factors" AND "Social factors" AND "Economic factors" AND "Physical factors" AND "Psychological factors" AND "Individual factors" AND "Medical factors"

Searching in existing databases

At first, the research topic was selected by the research team, and based on it, the research question was formulated. Then, the relevant keywords were extracted using the MeSH strategy. All related studies were retrieved during the search process. After removing

duplicates, irrelevant articles were excluded based on their title, abstract, and full text. Final eligible articles were selected independently by two reviewers (SZH and MNA), with no disagreement reported between them. The search was conducted in October 2023 across the following databases: SID, PubMed, Magiran, Irandoc, Science Direct, Scopus, and the Google Scholar search engine. In addition, the reference lists of included articles were manually reviewed to identify any additional relevant studies. The final search update was completed on October 15, 2023.

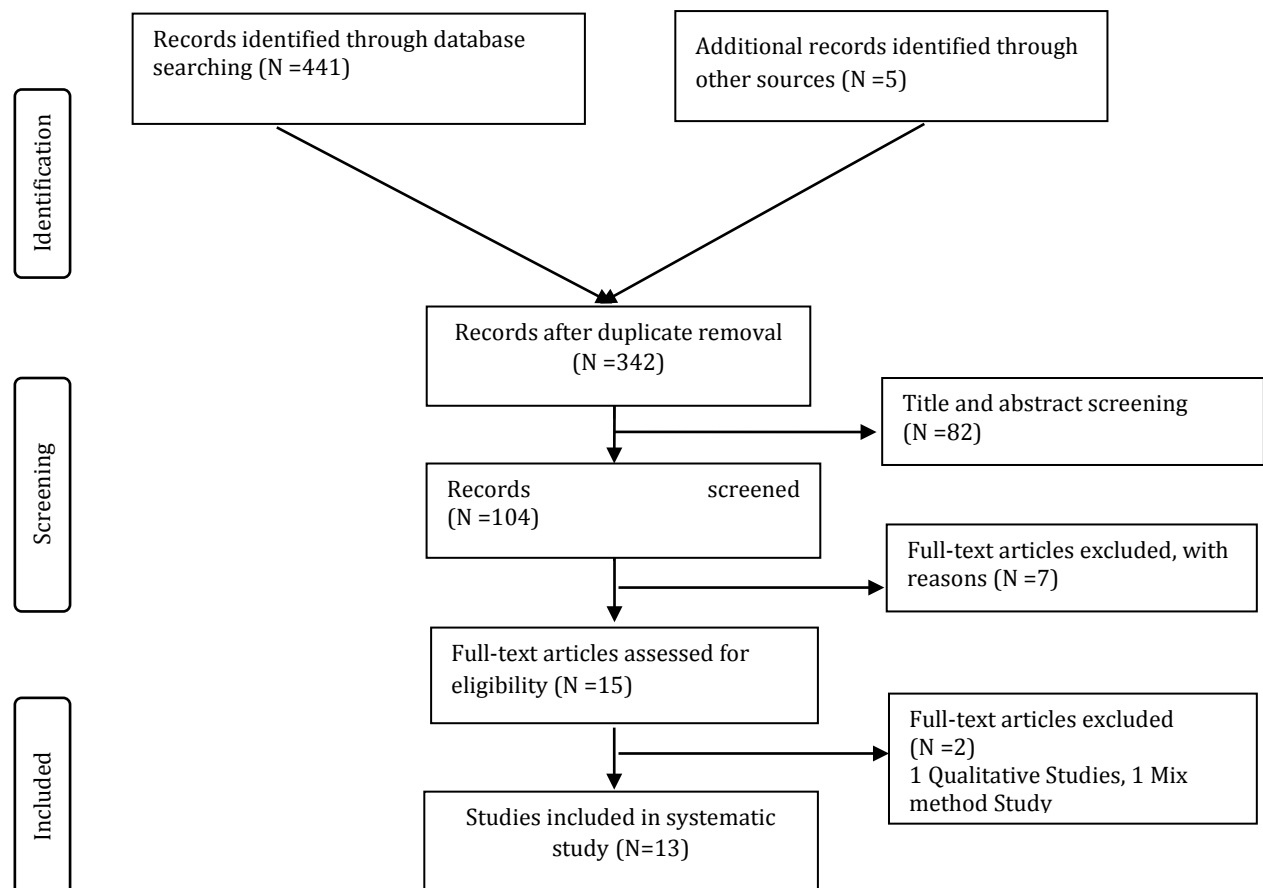


Figure 1. PRISMA 2020 flow diagram of the systematic search strategy

Inclusion and exclusion criteria for the study

The following items were considered as inclusion criteria, and all the eligible studies were reviewed:

Descriptive, cross-sectional, and analytical studies that investigated the factors related to sexual satisfaction in pregnant women, and studies in which the sample size and the study results were fully reported, were included. However, studies were excluded if they did not mention participant characteristics, did not provide a summary, were presented only at conferences, or their full text was not available.

In this study, the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) checklist was used to guide the reporting and ensure the transparency and completeness of the included

observational studies. The checklist specific to cross-sectional studies was applied, some of these titles are divided into other subcategories. Totally, this statement consists of 22 paragraphs. Out of the total of 22 clauses in this statement, 18 clauses are generally used in all types of observational studies, including cohort, case-control and cross-sectional, and 4 clauses are considered specialized according to the type of the study (18-19).

Data extraction

After studying the full text of the eligible articles, the desired data were extracted. The extracted data for each study included the name of the author, year of publication, place of study, aim of study, sample size, tool, investigated variables and the results including the related factors to sexual satisfaction. Finally, the data extracted from the articles were classified, and presented as a table (Table 1).

Table 1. Data extraction from selected articles

Author's name/ Year of study	Place of study	Aim of study	Study design	Sample size	Variables measured	Tool	Findings (Related factors to sexual satisfaction)
Ahmadi z 2010 (20)	Iran	Determining sexual satisfaction and factors related to it in pregnant women	Cross sectional	230 primiparous pregnant women	Sexual satisfaction and related factors	Demographic questionnaire, pregnancy characteristics and Hudson's sexual satisfaction	Husband's and wife's age, duration of marriage, spouse's education level, employment status, desire for pregnancy, awareness, having or not having common pregnancy problems and fear of fetal or maternal complications due to intercourse.
Memarian Z 2013 (21)	Iran	The level of sexual satisfaction of primiparous women in the third trimester	Cross sectional	110 primiparous pregnant women in the third trimester	Sexual satisfaction and related factors	Hudson's sexual satisfaction (ISS)	Age of pregnant women, age of husband, education of pregnant woman, economic status of the family, employment status and desire of pregnancy, sexual desire of women in the third

		of pregnancy and its related factors					trimester of pregnancy
Andalib M 2022 (22)	Iran	Predicting sexual satisfaction based on body image and perfectionism in pregnant women	Cross sectional	160 pregnant women	Sexual satisfaction on the basis of body image and perfectionism	Hudson's sexual satisfaction (ISS)	Positive body image and improvement of social-oriented perfectionism and role self-control
Tabandeh A 2016 (23)	Iran	Investigating the level of sexual satisfaction of pregnant women with gestational diabetes	Cross sectional	150 pregnant women	Sexual satisfaction and related factors	ENRICH Marital Satisfaction Scale and Female Sexual Function Index (FSFI)	Physical health, the severity of diabetes, the correct level of sexual function
Branecka-Woźniak D 2018 (24)	Poland	Sexual and Life Satisfaction of Pregnant Women	Cross sectional	181 pregnant women	Sexual Satisfaction and the Satisfaction with Life	Sexual Satisfaction Questionnaire and the Satisfaction with Life Scale (SWLS)	Economic status, physical health, proper sexual function.
Zareei S 2019 (25)	Iran	Comparison of basic psychological needs, pregnancy anxiety and sexual satisfaction in pregnant women with and without history of	Cross sectional	120 pregnant women	Female sexual function and associated factors	Gardia, Deci & Ryan Psychological Needs Questionnaire, abbreviated form of Wendenburg pregnancy anxiety questionnaire, and Larson sexual satisfaction Questionnaire	Anxiety, depression and psychological disorders

Behzadipour s 2018 (26)	Iran	abortion in Javanrood city Sexual satisfaction and intimacy during pregnancy and after childbirth The Relationship of Sexual	Cross sectional	430 pregnant women	Sexual satisfaction and related factors	Sexual Satisfaction Questionnaire (LSSQ; Larson et al., 1998) and Marital Intimacy Needs Questionnaire (Bagarozzi, 1997)	Marital satisfaction and level of intimacy in non-sexual relationships.
Ramezani s 2015 (15)	Iran	Satisfaction and Marital Satisfaction with Domestic Violence against Pregnant Women Sexual Activity and Attitudes as Predictors of Sexual Satisfaction During Pregnancy Sexual Intimacy in First-time Mothers: Associations with Sexual and Relationship Satisfaction Across Three Waves	Cross sectional	430 pregnant women	Domestic violence and sexual satisfaction	ENRICH Marital Satisfaction Scale and the researcher made a questionnaire	Domestic violence and marital intimacy
Jawed- Wessel s 2019 (14)	USA	Sexual Activity and Attitudes as Predictors of Sexual Satisfaction During Pregnancy Sexual Intimacy in First-time Mothers: Associations with Sexual and Relationship Satisfaction Across Three Waves	Cross sectional	116 couples	Sexual Satisfaction and Sexual Behavior	ENRICH Marital Satisfaction Scale and the researcher made a questionnaire	between sexual behavior in couples such as the type of intercourse, duration and sexual satisfaction
Natalie O 2020 (27)	Canada	Associations with Sexual and Relationship Satisfaction Across Three Waves	Cross sectional	171 pregnant women	Sexual satisfaction and factors related to it	Hudson sexual satisfaction questionnaire	Demographic variables including age, education, economic status
David B	USA	Variable Sexual	Cohort	523 couples	Sexual	Hudson sexual	Depression and anxiety and

2021 (28)		Satisfaction in Pregnancy: A Latent Profile Analysis of Pregnant Wives and Their Husbands				satisfaction and psychological factors	satisfaction questionnaire	records of depression and anxiety
Shabanian S 2022 (29)	Iran	Role of the First Childbirth and its Associated Factors on Sexual Satisfaction and the Quality of Sexual Life of Married Women	Cross sectional	124 married women	Sexual satisfaction and psychological factors	Married Women's Satisfaction Questionnaire (MWSSQ).	Sexual	Psychological variables such as age, economic status
Dolapoğlu N 2023 (30)	Türkiye	The relationship between pregnant women and their spouses' belief in sexual myths during pregnancy, relationship satisfaction and sexual satisfaction	Cohort	51 couples				Marital and sexual relations before pregnancy and individual beliefs of people

Results

The participants in 13 studies were pregnant women, thus they were in reproductive age and their age range was 15 to 48 years (14, 15, 20-30). In three studies, the participants were couples (14, 28, 30). All studies considered the inclusion criteria for the participants to enter the study including reading and writing literacy, willingness to participate in the study, and pregnant women who were examined according to the standard tools. In some studies, in order to control the effect of confounding factors such as sexual education and counseling classes and major psychological records, it was recorded or was considered as the exclusion criterion. The total number of evaluated participants in 13 studies was 2796, of which 690 were men. The reason for the male participants was due to the studying couples (20-29). In addition, the sampling method in 11 studies was convenience and voluntary (15, 20-29), and two studies included their participants randomly (14, 30).

The findings of this study were classified into four main categories including: 1) individual factors which encompassed age, educational level, duration of marriage, knowledge about sexuality, and the number and pattern of sexual activity during and before pregnancy 2) obstetric and physical health factors included the number of pregnancies and deliveries, gestational age, history of fetal death and abortion, willingness or unwillingness to continue the current pregnancy, and the woman's overall physical health status 3) socio-economic factors comprised of financial status, place of residence, and occupation 4) psychological factors involved sexual dysfunctions with a psychological origin and a history of psychiatric disorders, particularly anxiety disorders.

Individual factors included those related to the participants (27-28). These factors comprised age, male and female education, duration of marriage, the number and pattern of sexual activity during pregnancy, and the level of information regarding sexual relations during pregnancy (30). Ahmadi et al. in 2010 (20) and Memarian et al. in 2013 (21) investigated individual factors such as age, education, duration of marriage, gestational age, and sexual satisfaction in primiparous pregnant women. A

total of 340 participants were examined in these two studies. Younger age and higher education or awareness of the pregnant women and their husbands had a direct and significant relationship with the level of sexual satisfaction ($P < 0.05$). Another study was conducted on 116 couples in 2019 in the United States by Jawed-Wessel, who examined the sexual behavior and sexual patterns of couples. This study showed that pregnancy and pre-pregnancy marital relations were among the factors that determined the level of sexual satisfaction during pregnancy (14).

Regarding obstetric and physical health factors' Ahmadi et al. (2010) considered pregnancy-related problems and diseases as contributing factors to reduced sexual satisfaction in women (20). In 2019, Zarei et al. (2019) examined women with a history of abortion during pregnancy and stated that abortion, as a medical condition, led to decreased sexual desire during pregnancy (25). In relation to physical health, Tabandeh et al. (2016) conducted a study on 150 pregnant women with diabetes and reported that sexual satisfaction had a direct and significant relationship with the severity of the disease (23).

Socio-economic and social factors included matters related to individuals' presence in society and were influenced by their social engagement. Financial status, income level, and place of residence were also categorized under economic factors (27, 29). Ahmadi (20), Memarian (21), Shabanian (29) and Dolapoğlu (30) found that high-income employment and urban residency had a greater effect on sexual satisfaction.

Psychological factors were identified as significant elements that influenced nearly all aspects of human life (29). In a study by Jawed-Wessel in the United States, the sexual behavior and satisfaction of couples during pregnancy were evaluated. The study concluded that correct and healthy sexual behavior led to increased sexual satisfaction, while the use of sexual accessories or inappropriate sexual behaviors—when one partner was dissatisfied—resulted in decreased sexual satisfaction (14). Another study conducted by Zarei et al (2019) and colleagues in 2019 in Iran considered post-traumatic stress disorder

(PTSD) caused by abortion as a destructive factor for sexual satisfaction in women. The women with a history of abortion and PTSD were more likely to experience sexual dissatisfaction (25). In the study by Andalib et al (2022) a direct and significant relationship was found between positive perfectionism and positive body image (22). In 2015, Ramezani et al (2015) investigated the relationship between domestic violence and sexual satisfaction in pregnant women. They reported that women with a history of domestic violence experienced lower sexual satisfaction than others. These women stated that their sexual desire was negatively affected by their partners' sexual behaviors (15).

Discussion

Sexual activity is one of the dimensions of human sexual health. This activity is joyful for most people and is related to a wide range of factors. The findings of this scoping review, which was focused on related factors of sexual satisfaction in pregnant women, were classified into four main categories including individual, obstetric, socio-economic and psychological factors (31-32). Among individual factors influencing sexual satisfaction during pregnancy, variables such as the woman's age, spouse's age, length of marriage, level of education of both partners, employment status, desire to become pregnant, and receiving counseling from healthcare providers were shown to play a significant role. In a study by Ahmadi et al (2010) on 230 primiparous women, higher levels of satisfaction were associated with younger age, possibly due to greater energy and emotional engagement. Furthermore, couples with higher education levels and those who received professional consultation about sexual matters during pregnancy reported increased satisfaction, likely due to greater awareness and confidence in managing sexual activity during this period (20). Additionally, gestational age, though an obstetric rather than a purely individual variable, was found to influence desire: sexual satisfaction typically increased during the second trimester and declined in the first and third, which was attributed to the body's physiological adaptation patterns and discomfort levels (21).

Respecting obstetric factors, it should be noted that pregnancy may affect sexual satisfaction due to extensive changes in all physical, psychological, and even social and economic dimensions of women's lives. Hormonal and physiological changes in pregnancy are the first extensive changes that affect all aspects of women's lives during pregnancy (20-30). Since sexual satisfaction is one of the subgroups of human health, it is considered important and may be affected by pregnancy (33).

With regard to socio-economic factors, sexual satisfaction appeared to be linked to variables such as occupation, income, and living environment. Memarian et al (2013). Found that women with more stable jobs and higher socio-economic status reported higher satisfaction levels (21). Access to better healthcare services, educational materials, and supportive resources is more common among individuals with higher income and urban residency, which may enhance awareness and reduce stress related to sexual relations during pregnancy. Moreover, job security and household stability can lead to reduced anxiety and greater intimacy between partners, thus positively affecting sexual well-being (20-21,29-30).

In terms of psychological factors, studies demonstrated that mental health history, emotional well-being, and interpersonal dynamics within the couple's relationship substantially affected sexual satisfaction during pregnancy. For instance, Jawed-Wessel in the U.S. and Zaree et al. (2021) in Iran reported that a history of mental health disorders such as PTSD resulting from abortion was negatively correlated with satisfaction (14,25). Similarly, couples who engaged in mutually respectful and fulfilling sexual behavior were more satisfied, whereas poor communication and emotional distance were linked to lower satisfaction levels (14,28). Exposure to domestic violence, whether physical, psychological, or sexual, also significantly reduced the likelihood of sexual satisfaction—by approximately 0.6 times—compared to those without such experiences (15). Additionally, psychological perceptions such as body image and self-confidence, especially in the later stages of pregnancy when physical changes become more visible, were

shown to influence emotional and sexual experiences. Negative perceptions of body image could lead to decreased confidence and, consequently, reduced sexual satisfaction (22).

Finally, physical and medical-obstetric factors also played a major role in shaping women's sexual satisfaction during pregnancy. Medical complications such as gestational diabetes, history of abortion, or any chronic condition were consistently found to reduce satisfaction, often due to discomfort or medical restrictions on sexual activity. For example, Tabandeh et al (2016). Found that the severity of diabetes was inversely related to sexual satisfaction (23). Ahmadi et al (2010). Also emphasized that common pregnancy-related problems like fatigue, nausea, or high-risk conditions could decrease interest in and enjoyment of sexual activity (20). Furthermore, in pregnancies where no major complications were present, appropriate sexual behavior helped promote intimacy between partners, reinforcing both emotional and physical closeness (24). However, in situations involving disease or complications, medical advice to avoid intercourse could result in stress and lowered satisfaction (21,25)

Among the limitations of this study was the possibility that some eligible articles were missed despite a systematic search. Another limitation was the heterogeneity among the included studies in terms of their instruments, which prevented meta-analysis. Moreover, some articles were excluded due to a lack of full-text access or because they were written in languages other than English or Persian. One of the strengths of this review, however, lies in its practical applications. By identifying the factors associated with sexual satisfaction during pregnancy, this study provides useful insights for reproductive health professionals, mental health counselors, midwives, and gynecologists. These findings can be used to inform educational interventions and guide the design of clinical trials aimed at improving sexual, physical, and psychological well-being in pregnant women.

Conclusion

As evidenced by the results of the present study, some factors have a direct and significant relationship with sexual satisfaction in pregnant

women, while others have a negative and inverse relationship. In this way, it is expected to increase sexual satisfaction during pregnancy by strengthening positive factors and mitigating negative factors through designing the appropriate interventions.

Declarations

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Conflicts of interest

Authors declared no conflicts of interest.

Ethical considerations

All ethical principles including proper citation, avoidance of plagiarism, and accurate reporting of the findings were observed throughout the research process.

Code of Ethics

This study has received ethical approval from Mashhad University of Medical Sciences under the code of IR.MUMS.NURSE.REC.1400.015 and complies with the ethical standards outlined by the Committee on Publication Ethics (COPE).

Use of Artificial Intelligence (AI)

Tools were used solely for language editing, paraphrasing, and formatting purposes. No part of the data analysis or interpretation was conducted by AI tools.

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Authors' contribution

All authors contributed significantly to the conceptualization, design, literature search, analysis, writing, and final approval of the manuscript. Each author approves the final

version and agrees to be accountable for the content of the article.

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