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Development of an educational guide for postpartum sexual health promotion: The Delphi method

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Abstract:

BACKGROUND: The Promotion of sexual health has been emphasized in Sustainable Development Goals (SDGs). As a primary prevention strategy, the promotion of sexual knowledge can reduce the incidence of postnatal sexual disorders. This study aimed to develop an educational guide for postpartum sexual health promotion.

MATERIALS AND METHODS: This qualitative study was conducted in 2021 in Tehran. The steps of developing the educational guide were based on the model of the National Institute for Health and Clinical Excellence (NICE). First, the related guidelines, books, booklets, and original articles were comprehensively reviewed. Based on the scientific evidence, the educational content was compiled. Then, the quality of this content was evaluated using the Delphi method; It was performed using expert opinions with the Appraisal of Guidelines for Research and Evaluation (AGREE) tool.

RESULTS: The educational content was developed in three chapters as follows: basic sexual education, postpartum changes and prevalent sexual problems of this period, and strategies for solving or adapting to postpartum sexual problems. This guide was developed in two separate sections for healthcare providers and mothers. The content was of excellent quality in all 6 domains of the AGREE tool (>90%); and evaluated to be optimal in terms of scientificity, significance, and feasibility with the consensus of experts (>95%).

CONCLUSIONS: In this research, the steps of developing a comprehensive evidence-based educational guide for sexual health services in postpartum care were described, and its content was presented. The validity of the compiled content was also confirmed.

Keywords:

Delphi technique, postpartum period, sexual health

Introduction

The postpartum period is an important transitional period when men and women adapt to the role of parenthood.[1,2] Numerous challenges may occur in this transitional process; Hormonal changes caused by breastfeeding, insomnia caused by night care of the baby, exhaustion, birth-related perineal trauma, changes in women's body image, mood changes caused by baby blues and postpartum depression, and women's loss of sexual desire affect the relationship of spouses.[2-4] In this regard, the sexual relationship is one of the most vulnerable parts.[2] In the first 3 months of the postpartum period, 20-68% of primiparous mothers experience some kind of sexual dysfunction, and this figure is reduced to 5-37% in the 12th month of this period.[5] Low sexual desire, reduced number of coitus, dyspareunia, inability to achieve orgasm, and sexual dissatisfaction are the most prevalent sexual problems during this period.[1,3] These problems reduce general health and result in negative consequences such

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as postpartum depression, marital conflicts, and unfavorable parenting.[5]

Sexual health is one of the substantial aspects of health which should be given special attention in primary health care to improve the general health and well-being of women.[1] Moreover, according to the Sustainable Development Goals (SDGs), the promotion of sexual health and having a safe and satisfactory sexual life is considered to be among reproductive and sexual rights.[6] Therefore, sexual counseling is a key aspect of postpartum care, which is unfortunately overlooked in some countries as it is not provided properly and comprehensively.[3] As such, many women face sexual problems during this period, which may be untreatable if they become long-term and chronic.[1]

For effective sexual services, reliable clinical resources should be provided so that healthcare providers can offer evidence-based services based on these resources and women can be referred to them and enhance their sexual knowledge.[7] In 2010, the World Health Organization (WHO) proposed the design and use of evidence-based sexual education content to improve healthcare processes and outcomes.[8] At the international level, some clinical guidelines related to postpartum care, such as the postpartum care guidelines of the American College of Obstetricians and Gynecologists (ACOG),[9] the Canadian Guidelines for Sexual Health Education,[10] the English postpartum care guidelines[11] and the WHO's postpartum care guidelines[12] all indicate the need for providing sexual counseling at the 2-6 weeks of the postpartum visit.

However, based on the sexual education guidelines, the content of this education should be developed based on culture and appropriate to the socio-cultural background of each society.[10] There is no comprehensive and specific scientific content for providing postpartum sexual services in Iran. Safe motherhood guideline is the only source in which the need for providing mental and sexual health education and counseling have been emphasized. In the explanations of this guideline, the provision of these services has been limited to education about the appropriate time of resuming sexual relations and sexual hygiene with an emphasis on high-risk behavior.[13] Therefore, given the lack of a reliable sexual education guide for specific sexual problems in the postpartum period, the present study was conducted to design and validate an educational guide to postpartum sexual health promotion.

Material and Methods

Study design and setting

This qualitative study was conducted in 2021 in Tehran, Iran. The aim of the study was to design, develop and validate an educational guide for postpartum sexual health promotion. Clinical guidelines for health should be developed based on the best available evidence and systematically.[14] The National Institute for Health and Clinical Excellence (NICE) model is one of the scientific and valid frameworks for writing health guidelines.[14] According to the steps of the NICE guidelines, first, the parameters and framework of the guideline should be determined, and a multidisciplinary team should be appointed for writing. Then, the search process is conducted to identify, evaluate and synthesize research evidence. In the next step, the opinions of the experts on the initial version of the guide are collected and compiled and, after the revisions, the final guide is published. This version needs to be checked regularly for updates.[15]

First, to explain the main subject area of the guide, among the many definitions of sexual health in scientific texts, that of the WHO (2002) was considered the main concept. The WHO defines sexual health as "a state of physical, emotional, mental and social well-being related to sexuality; it is not merely the absence of disease, dysfunction or infirmity".[16] Then, the target group and audience of the guide were checked and the present guide was developed in two separate sections: the first section for postpartum healthcare providers (such as midwives, general practitioners, gynecologists,…) and the second section for mothers who had childbirth recently. In the next step, the researchers identified the most important problems and sexual needs of women who had childbirth by searching in qualitative studies; then, reviewing these studies, they extracted the underlying factors of these problems. Next, scientific solutions should be extracted for solving these sexual problems.

In this study, educational content was developed for the promotion of postpartum sexual health by adapting the NICE model in the following four main stages:

Scoping

At this stage, via a comprehensive and systematic search in electronic databases (PubMed, Scopus, Embase, Web of Science, ProQuest, Cochrane Library, and ClinicalTrials.gov) and the Google Scholar search engine, all experimental and quasi-experimental studies with the subject of improving sexual outcomes in the postpartum period were searched and extracted. Related guidelines, scientific books, and handbooks in other countries (such as England, Canada, Australia, etc.) and WHO were also examined.

Guideline development

In this stage, derived from the second stage of the NICE model,[15] the initial draft of the educational content was prepared. The scientific content of this initial draft was derived from the highest level of scientific evidence

extracted from the related articles, scientific books, and guidelines in the world. Given the emphasis of the guidelines on the need for providing culture-based sexual education,[10] all the recommendations and strategies of sexual education were adapted to the Iranian culture to maximize its acceptance among the target audience. The practicality of the education should also be considered. In our national guideline for safe motherhood, three routine visits are considered for the postpartum period (day 1-3, day 10-15, and day 30-42).[13] In order not to impose additional care on the health system and to make the implementation of the program cost-effective, the entire content was developed in three educational sessions. As such, one session should be held in the last month of pregnancy which coincides with the last session of childbirth preparation classes, and the second and third sessions should be held during the second (day 15-10) and third (day 30-42) postpartum visit. In doing so, the mother does not need any additional referrals.

Validation

This phase consists of three main steps as follows[15]:

- Consultation: getting the opinions of experts about the initial draft
- Revision: exchange of opinions of the editing committee and modification and revision of the content based on the opinions of experts
- Responding: providing answers to the opinions of experts

In the consultation step, the Delphi technique was used to get the opinions of experts. Delphi is a systematic method that is used to arrive at the opinions of a group of experts about a specific issue on a wide geographical level. It includes rounds of the questionnaire with the anonymity of the respondents, and these rounds are repeated until a group consensus is reached.[17] Delphi members must have scientific knowledge and expertise, desire, and adequate time for evaluation. The number of participants is usually less than 50 subjects and most studies have used 15-20 subjects.[18,19] In previous studies, no specific method of sampling has been recommended[18] and the purposive sampling method has been used almost in all of them. The non-randomness of sampling is not of great importance in the Delphi method and the scientific expertise of the members is more significant.[17]

Study participants and sampling

In this research, using the purposive sampling method, 20 experts from the areas of reproductive and sexual health, midwifery, sexual medicine fellowship, clinical psychology, reproductive biology, and medical education were selected from various provinces of Iran (e.g. Tehran, Gilan, Hormozgan, Hamedan, West Azarbaijan, and Fars).

Data collection tool and technique

The AGREE questionnaire was used for the validation of the developed content. It is designed to guide researchers in developing and investigating the quality of health-related guidelines at the national and international levels and examines potential biases during the guideline development, the validity of recommendations, and their applicability. The AGREE includes 23 criteria and six domains: Scope and Purpose (criteria 1-3), Stakeholder Involvement (criteria 4-7), Rigor of Development (criteria 8-14), Clarity of Presentation (criteria 15-17), Applicability (Criteria 18-21), and Editorial Independence (criteria 22-23). The questions are answered based on a 7-point Likert scale. Score 1 (strongly disagree) indicates that the information related to a criterion is not mentioned or is reported so weakly; score 7 (strongly agree) refers to the excellent quality of reporting information related to that criterion in the mentioned content.[20,21] The scores of the six domains are independent of each other and there is no overall score for the tool. The scoring system for each domain is as follows:

Maximum possible score = 7 (strongly agree) × Number of items of the domain × Number of appraisers

Minimum possible score = 1 (strongly disagree) × Number of items of the domain × Number of appraisers

$$\textit{The scaled domain score} = \frac{\textit{Obtained score} - \textit{Minimum possible score}}{\textit{Maximum possible score} - \textit{Minimum possible score}} \times 100$$

A score above 70% means high quality of guidelines in that domain and high validation.[21] There are two final questions at the end of the AGREE tool:

1. Rate the overall quality of this guideline (1: Lowest possible quality; 7: Highest possible quality)
2. I would recommend this guide for use (Yes; Yes, with modifications; No).

Three researcher-made items were also provided to the appraisers to measure the educational content in terms of being scientific (very high = 4, high = 3, low = 2, very low = 1), practicality, and applicability (completely agree = 4 to completely disagree = 1) and significance (completely agree = 4 to completely disagree = 1). Regarding these three items, 70% consensus was considered as acceptable desirability based on scientific sources.[22]

In this research, the opinions and scores of 20 experts were obtained in two rounds of the questionnaire. Revisions were made and necessary corrections were

applied based on these comments until the validity of the final version of the educational content was approved by all experts. Moreover, to determine Qualitative Face Validity, the section related to mothers the educational content was provided to 10 women who were in their postpartum period. They were asked to comment on the level of difficulty, consistency, and ambiguity of the phrases and text of the educational content.

Publication

The final version was sent to experts who commented on the first draft guideline and, after the final approval of the experts, it was submitted to the University Publications Council for the peer review process. Finally, the present content was published in the form of a book by Shahid Beheshti University of Medical Sciences publication, with Book ID (ISBN):978-622-5946-48-4.

Statistical analysis

For quantitative data analysis, SPSS software (SPSS Inc., Chicago IL, USA, version 23) and descriptive statistics (absolute and relative frequency tables) were used.

Ethical consideration

This research is related to a project with registration number: 33008, with a code of ethics: IR.SBMU.RETECH.REC.1401.479 from Shahid Beheshti University of Medical Sciences, Tehran, Iran.

Results

In the first stage, in accordance with the first stage of the NICE model, a comprehensive search was performed in the scientific literature of the world. The sexual health section of postpartum guidelines from England,[23] Canada,[24] Australia,[25] India,[26] Malaysia,[27] as well as those of the WHO[28] and ACOG[9] were reviewed. Doing a systematic search in electronic databases, all related Persian and English language articles were also collected. The postpartum section of the books Your Orgasmic Pregnancy[29] and Berek and Novak's Gynecology[30] was also used in content editing.

In the second stage, the content of postpartum sexual education was developed in the form of three chapters for three educational sessions [Table 1]. This content was developed in two separate sections for health service providers and puerperium women. The first section included all the scientific details and medical terms. By contrast, the section related to mothers was written in simple language, without medical terminology, and more concisely; additionally, in order to make it more attractive for the audience, more figures, colors, and various fonts were used in it.

In the third stage, 10 postpartum women with different literacy levels (under diploma, diploma, and university education) studied the mother's section of the content to assess Qualitative Face Validity. After reading the educational content, the participants identified phrases and words whose meaning was insufficient and difficult for them to understand. Then, the writing of the mentioned phrases was modified according to the suggestions of the participants.

Then, the initial version in the form of the Delphi technique was provided to experts to evaluate the educational content using the AGREE questionnaire. The characteristics of Delphi team members are reported in Table 2. After making corrections and exchange

Table 1: Content of the sexual health improvement educational guide in postpartum period

Session	Content
First Session: late pregnancy period	Anatomy of female and male reproductive system; Sexual response cycle, stages and factors affecting it; Physiology of sexual response; Differences between men and women in sexual matters; Genital and non-genital erogenous zones in the body of women and men; Three main stages of sexual activity (foreplay, penetration, afterplay); The importance of sexual relationship and its physical and psychological benefits
Second Session: 10-15 days after delivery	Changes in postpartum period: Physical changes; Urinary-genital changes; Hormonal changes; Psychological changes; Introduction of common and possible postpartum sexual problems
Third Session: 30-42 days after delivery	Teaching ways to solve sexual problems after childbirth: - Best time to resume intercourse - Interventional approach to improve sexual desire - Interventional approach to eliminate vaginal dryness - Interventional approach to resolve sexual pain disorder - Interventional approach to overcome the fear of penetration in the first sexual intercourse after childbirth - Interventional approach to improve body image satisfaction (sexual attractiveness) - Interventional approach to strengthen the pelvic floor muscles - Interventional approach to manage nipple sensitivity - Interventional approach to manage milk discharge during orgasm - Interventional approach to manage sexual challenges related to accepting the role of parenting: excessive fatigue, sleep disorders, quantitative and qualitative deterioration of marital relations, fear of waking up the child

Table 2: Characteristics of experts present in the Delphi validation phase

Characteristics	Experts profile
Age, year (mean±SD)	42.85±8.31
Education Status, *n* (%)	
B.sc	1 (5)
M.sc	3 (15)
Ph.D.	16 (80)
Specialized Field, *n* (%)	
Sexual and Reproductive Health	10 (50)
Psychology	2 (10)
Reproductive Biology	1 (5)
Midwifery	4 (20)
General medicine, Sex Therapy	1 (5)
Medical Education	2 (10)
Occupational Status, *n* (%)	
Assistant Professor	10 (50)
Associate Professor	5 (25)
Health care provider	5 (25)

of educational content in two evaluation rounds, the validity of the final version was confirmed by obtaining a score of > 70% in all 6 domains [Table 3]. All experts (100%) recommended the use of this educational guide and reported the highest level of quality for it. The educational guide was approved in terms of its scientific aspect (97.50% consensus), practicality and applicability aspect (93.75% consensus), and significance (100% consensus).

Discussion

In this research, a sexual education guide for the postpartum period was developed by adapting the stages of the NICE model. The validity of the guide was confirmed by the Delphi technique with the presence of 20 experts and by using the AGREE tool. The guide was prepared in two separate sections for two main audiences, namely, postpartum healthcare providers and mothers who had childbirth.

The review of international sexual education guidelines revealed that many countries such as Australia, England, and Canada start sexual education from childhood or adolescence and schools develop sexual education curricula. As such, at older ages, such education are limited to the specific needs of each period.[8] For example, during pregnancy or after childbirth, education are confined to specific sexual issues of this period, such as the right time for resuming postpartum intercourse.[28] In Iran, structured sexual education is not provided from childhood and adolescence, and the first education is offered during premarital tests.[31] Therefore, couples receive inadequate sexual education. In the later stages of life such as during pregnancy and the postpartum period, when sexual relations face certain challenges, sexual education is an undeniable necessity. The origin of sexual problems in many middle-aged couples who refer to sex therapy clinics goes back to the birth of their first child.[2] Thus, providing such education during pregnancy and the postpartum period, as a type of first-level prevention, can prevent the incidence of future sexual disorders.

One of the important issues mentioned in the guidelines is the time for resuming the coitus. According to the WHO guidelines, in the first postpartum care, the need to refrain from sex until the healing of the perineal wound should be mentioned. In the follow-up care (weeks 2 to 6), women should be asked about it. In case of resuming the coitus, women should be consulted about choosing the right contraceptive method.[28] The American College of Obstetricians and Gynecologists (ACOG) also emphasizes that healthcare providers should guide women about the specific sexual issues of this period and the appropriate time of resuming the coitus.[9] According to the perinatal care guide developed by the Malaysian Ministry of Health, couples should decide together and with the advice of their healthcare provider when to resume intercourse. It is recommended to resume sexual relations after the cessation of vaginal bleeding and the recovery of labor sutures.[27] Many couples resume sexual activity 6 to 8 weeks after delivery.[30]

Another important point is the need to reassure women about postpartum sexual issues.[23,26] According to the guidelines of the Federation of Obstetrics and Gynecology Societies of India, women should be reassured that they can return to satisfactory sexual relations after their childbirth experiences (e.g. 2nd degree rupture and above). This reduces the concerns of mothers.[26] According to the postpartum care section of the Public Health Agency of Canada's guide, both women and healthcare providers often have difficulty talking about sexual issues. However, receiving support from a healthcare provider can effectively improve women's health.[24] Confirmation of and discussion about natural fluctuations in sexual desire and frequency of sexual activity during and after pregnancy can help couples increase their knowledge of such issues.[30]

At first, intercourse may be painful, and many women fear the first postpartum intercourse. It is recommended by the ACOG that women be counseled about dyspareunia.[9] Therefore, a part of postpartum sexual counseling should deal with this problem. In order to control dyspareunia, existing guidelines recommend the use of water-based lubricant gel or positions that allow the woman to control penile penetration.[9,27,32] Being gentle during the first postpartum intercourse and avoiding hurry and pressure are also recommended.[33] Additionally, Lamont *et al*.[32] recommended in the "Female Sexual Health Consensus Clinical Guidelines" that if intercourse

Table 3: Results of validity assessment of the sex educational guide based on Appraisal of Guidelines for Research and Evaluation (AGREE) tool

Expert	Item													
	Scope and Purpose			Stakeholder Involvement				Rigour of Development						
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14
1	7	7	7	7	7	7	7	7	7	7	7	7	7	7
2	7	7	7	7	7	7	7	7	7	7	7	7	7	7
3	7	7	7	7	7	7	7	7	7	7	7	6	7	7
4	7	7	7	7	7	7	6	7	7	6	7	7	7	6
5	7	6	7	7	5	7	7	6	6	6	6	6	6	6
6	7	7	7	7	7	7	7	7	7	7	7	7	7	7
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	7	7	7	6	6	7	7	7	7	7	7	7	6	5
9	7	7	7	7	7	7	7	7	7	7	7	7	7	7
10	7	6	6	7	7	7	7	7	7	7	7	7	7	7
11	7	7	7	7	7	7	7	7	7	7	7	7	7	7
12	7	7	7	7	7	7	7	7	7	7	7	7	7	7
13	7	7	7	7	7	7	7	7	7	7	7	7	7	7
14	6	6	7	6	6	6	6	6	6	6	7	6	6	5
15	7	7	7	7	7	7	7	3	4	3	7	7	7	7
16	6	4	7	4	5	6	4	6	4	4	6	2	7	6
17	7	7	7	7	7	7	7	7	5	5	7	7	7	7
18	7	7	7	7	7	7	7	7	7	7	7	7	7	7
19	7	7	7	7	7	7	7	7	7	7	7	7	7	7
20	7	6	7	7	7	7	7	5	7	7	6	7	7	5
Quality score (%)	97.22			96.25				93.57						

Expert	Item								
	Clarity of Presentation			Applicability				Editorial Independence	
	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23
1	7	7	7	7	7	7	7	7	7
2	7	7	7	7	7	7	7	7	7
3	7	7	7	7	7	7	7	7	6
4	7	7	7	6	7	7	7	6	7
5	7	6	6	6	6	6	5	6	6
6	7	7	7	7	5	7	7	7	7
7	7	7	7	7	7	7	7	7	7
8	7	7	7	7	7	6	7	7	7
9	7	7	7	7	7	7	7	7	7
10	7	7	7	7	7	6	7	7	7
11	7	7	7	7	7	7	7	7	7
12	7	7	7	7	6	7	7	7	7
13	7	7	7	7	7	7	7	7	7
14	5	6	6	7	5	6	5	5	5
15	7	7	7	7	7	7	7	7	7
16	6	5	6	7	4	5	3	5	5
17	6	7	7	6	5	4	4	6	7
18	7	7	7	7	7	7	7	7	7
19	7	7	7	7	7	7	7	7	7
20	7	7	7	6	7	7	4	7	7
Quality score (%)	96.94			92.08				94.58	

is difficult, painful, or prohibited for medical reasons, women should be educated about a wide range of non-penetrative intercourse. They emphasized the significance of the quality of lovemaking instead of the multiplicity of sexual intercourse to achieving sexual pleasure and satisfaction.

The increase of prolactin and suppression of estrogen production in breastfeeding mothers causes vaginal dryness and sexual problems, which can be managed by using vaginal lubricant.[29] Exhaustion and disturbed sleep patterns due to the constant care of the infant can decline women's sexual desire.[27,30] In this regard, couples

seek support from family and friends, arrange private time for themselves without the presence of the baby, and allocate time for having romantic marital relationships.[33] Physical changes caused by pregnancy and childbirth can decrease women's body image satisfaction as well as their sense of sexual attractiveness.[29,30] Receiving psychological support from the spouse, doing regular exercise, and having a healthy diet can improve the body image.[29] Strengthening and rehabilitating pelvic floor muscles through Kegel exercises can also be useful in improving postpartum sexual relations.[9,23]

McBride *et al*. (2017)[34] designed a sexual education program for the postpartum period. This program, which was held in four educational sessions, included education on the cycle of sexual response, biological, psychological, and hormonal factors affecting postpartum sexual desire, training on relaxation techniques for reducing anxiety and stress of the mother, and education on effective communication (sexual and non-sexual) for the promotion of intimacy in couples, use of lubricants for vaginal dryness, pelvic physiotherapy, and strategies to increase sexual desire (e.g. reading erotic books). Evcili *et al*. (2020)[3] also designed a postpartum sexual education program that included 7 educational sessions. The education included postpartum physical and psychological changes, factors affecting postpartum sexual relations, time of resuming sexual intercourse, proper sexual position for this period, pelvic floor muscle training, the effect of breastfeeding on sexual function, and the effect of sexual activity on milk discharge, pregnancy prevention methods, the principles of self-care and mother's care against fatigue and solving vaginal dryness with lubricant.

Finally, according to all effective strategies extracted from the above sources, practical strategies were presented in this educational content to solve or adapt to any of the possible sexual problems of the postpartum period. These strategies included teaching the right time for resuming sexual intercourse, increasing foreplay time and using lubricant gel to reduce vaginal dryness, appropriate sexual positions to reduce sexual pain, non-penetrative sex training to have sexual pleasure, proper nutrition and regular exercise to improve body image, sexual imagination, proper nutrition, and Sensate focus to increase sexual desire, self-care, and relaxation techniques to overcome the fatigue of mothers, and Kegel exercises to strengthen pelvic floor muscles and improve orgasm. This educational content achieved a score of > 90% in all six domains of the AGREE tool, indicating its excellent quality. Moreover, the content's scientific features, practicability, and significance were considered to be acceptable by the experts.

Previously, Alizadeh *et al*. (2022)[8] developed a sexual education package for pregnancy in Iran. Methodologically, the process of writing this package was similar to our research and based on the stages of the NICE model. This three-section package was developed for three educational sessions (one session in each trimester of pregnancy). The first session included teaching the components of the reproductive system, physiological changes during pregnancy, and cases where sexual relations need to be restricted in the first trimester of pregnancy. The second session included changes in sexual issues during pregnancy, cases where sexual relations need to be restricted in the second trimester of pregnancy, and personal and sexual hygiene during this time. The third session included the training of appropriate sexual positions for the third trimester of pregnancy, the cases where sexual activity needs to be prohibited and the factors increasing marital intimacy. The validity of this educational package was checked by the Delphi method and AGREE tool. In the six domains of the AGREE, the scores of 95, 93.1, 94.4, 95.5, 92.2, and 89.16 were obtained respectively, and their validity was confirmed by experts.

Given the lack of clinical resources in the area of postpartum sexual education in Iran, the design of a comprehensive, evidence-based, and adapted sexual education package for providing sexual health services was one of the strengths of the present research. It should be noted that the validity of this package was confirmed by experts from different parts of Iran.

Limitation and recommendation

Since this content was written in Persian, of the limitations was that we could not use the opinions of experts from other countries in the validation process. By translating this educational content into English, we hope the content can be validated internationally. It is suggested to assess the effectiveness of the present content in interventional studies.

Conclusion

Sexual health promotion guide for the postpartum period in two sections (healthcare providers and new mothers) was designed and validated. The design of this content is such that its implementation in the health system will be possible in the context of routine care and no new service will be added to the system. Provision of this educations and improvement of couples' sexual knowledge about likely sexual problems is a type of first-level prevention that reduces the incidence of sexual disorders in the postpartum period.

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Registration and Ethics approval

This research is related to a project with registration number: 33008, with a code of ethics: IR.SBMU.RETECH.REC.1401.479 from Shahid Beheshti University of Medical Sciences, Tehran, Iran. (URL: https://ethics.research.ac.ir/ProposalCertificateEn.php?id = 289940&Print = true&NoPrintHeader = true&NoPrintFooter = true&NoPrintPageBorder=true&LetterPrint = true)

Author contribution

All authors approved the submitted and published manuscript.

All authors contributed substantially to the initial conception of the study, data collection, interpretation of results, and the final drafting and revision of the study. GO is the guarantor and accepts full responsibility for the conduct of the study, had access to the data, and controlled the decision to publish. TD is the primary author and was involved in the conception of the study, data collection, and analysis, interpretation of the results, and drafting and revision of the manuscript. ZK was involved in the conception of the study, drafting, and revision of the manuscript. MN was involved in the conception of the study and data analysis. AK and FR were involved in the data collection, interpretation of the results, and drafting of the manuscript.

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Conflicts of interest

There are no conflicts of interest.

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