

BMJ Open What are the factors that contribute to the development of sexual dysfunction in breastfeeding women? A systematic scoping review protocol

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ABSTRACT

Introduction Female sexual dysfunction is a public health problem. Evidence suggests that the population of nursing women is more vulnerable to the phenomenon due to breast feeding. Thus, this protocol was developed to explore the factors that contribute to the development of sexual dysfunction in breastfeeding women.

Methods and analysis The systematic scoping review will be conducted in six stages, according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols. The databases used will be: PubMed, Excerpta Medica Database, Cumulative Index for Nursing and Allied Health Literature, PsycINFO, Science Direct, Web of Science and Google Scholar. The searches were made until 1 June 2018, and no retrospective time limit was used. For the organisation of the literature retrieved from the databases, the EndNote Basic manager will be used. The Cochrane model will be used for the data extraction. The analysis of the quantitative data will be carried out through descriptive statistics and the qualitative data will be submitted to thematic analysis. The methodological quality of the empirical studies will be evaluated using the Mixed Methods Appraisal Tool.

Ethics and dissemination As it will be a review study, without human involvement, there will be no need for ethical approval. The results will be disseminated in a scientific journal, as well as in various media, such as: conferences, seminars, congresses or symposia.

INTRODUCTION

Sexual dysfunction is a heterogeneous group of disorders, which affects the capacity for sexual response or sexual pleasure.¹ These disorders have been related to biological, psychological, cultural, behavioural and interpersonal determinants.²

Female sexual dysfunction (FSD) is considered a public health problem affecting more than 40% of the world population of women.³ A systematic review estimated that the prevalence of FSD in populations over 18 years

Strengths and limitations of this study

- This protocol reduces the possibility of duplication, gives transparency to the methods and processes that will be used, reduces possible biases and allows peer review.
- This scoping review will be the first to explore the factors that contribute to the development of sexual dysfunction in breastfeeding women.
- The scarcity of empirical studies, the publication bias and the methodological quality of the grey literature found may be the main limitations of the study.

ranged from 5.5% to 73.2%⁴, and a meta-analysis estimated that the prevalence of sexual dysfunction among middle-aged women is 40.9%.⁵

The literature showed that women who breast feed may have a higher risk of sexual dysfunction.⁴⁻⁸ Hyperprolactinaemia, hypo-oestrogenism and the demand for infant care may increase FSD in this period.⁷⁻¹² Despite this evidence, few studies have been conducted to identify factors that contribute to the development of FSD among breastfeeding women.^{13 14}

Previous studies have investigated sexual dysfunction in the puerperium.^{9 13 15 16} However, most of these studies combine populations of women who are breast feeding with populations of women who do not breast feed. This analysis has not allowed to identify specific risk factors for FSD in women who breast feed.

Due to the scarcity of epidemiological studies of FSD in these women, the actual prevalences and risk factors for FSD in this population are still unknown. This panorama has made it impossible, at present, to conduct classic systematic reviews. In spite of this

Table 1 Structure of the research questions of the systematic scoping review protocol

Questions	Concept	Target population	Results of interest in health
What happens to female sexual performance in the course of breast feeding?	Female sexual performance	Breastfeeding women	Female sexual performance in the course of breast feeding.
What are the biological and psychosocial aspects that interfere with the sexual function of women who breast feed?	Biological and psychosocial aspects	Breastfeeding women	Biological and psychosocial aspects that interfere with the sexual function.
What are the sexual dysfunction problems in breastfeeding women?	Sexual dysfunction problems	Breastfeeding women	The types of sexual dysfunction problems.

situation, it is possible to identify factors that contribute to the FSD of women who breast feed between grey literature, book chapters, studies in development and research with a variety of designs. This study consists of a systematic scoping review developed with the aim of exploring the factors that contribute to the development of FSD in the population of women who breast feed and to promote the development of new research.

METHODS AND ANALYSIS

This work constitutes a protocol for a systematic scoping review, which will be developed according to the steps proposed by Arksey and O'Malley¹⁷ and subsequent recommendations.^{18,19} The six stages consist of: (1) identifying the research question; (2) identifying relevant studies; (3) study selection; (4) charting the data ;(5) collating, summarising and reporting results and (6) consultation.^{17,18}

This protocol follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols guidelines (online supplementary file 1) for the bibliographic search process.²⁰ Currently, this research is in the second phase, which identifies the relevant studies.

Identifying the research question

The research questions were discussed by the authors and, from a consensus, three research questions were elaborated, articulated for the purpose of the review. The questions were broad in nature and structured from three components: (1) the definition of the concept to be researched, (2) the target population and (3) the results of interest in health¹⁸ (table 1).

In this step, the concepts and their definitions to be used to support the questions of this review were also determined (table 2).

Identification of relevant studies

Search strategy

The search strategies were articulated with the research questions and were developed by a team of librarians and researchers with experience in bibliographic searches in databases of the health area. The searches were made until 01 June 2018, and no retrospective time limit was used. The controlled vocabulary terms from the MeSH, APA thesaurus, Cumulative Index for Nursing and Allied Health Literature (CINAHL) subject headings and Entree thesaurus were used in combination with keywords and Boolean operators AND and OR. The search strategies

Table 2 Key concepts and definitions for the study questions

Concept	Definition
Breastfeeding women	Breast feeding is when the child receives breastmilk directly from the breasts and the following types are considered: exclusive breast feeding, breast feeding in combination with fluids, complementary breast feeding (breast feeding in combination with solids or semisolid). ²⁶
Sexuality	This included a broad perspective with some conceptual elements of the WHO definition. ²⁷ In which, biological and psychosocial aspects are considered.
Biological aspects	Consider the interaction of prolactin and oxytocin with female sex hormones including oestrogen and progesterone.
Psychosocial aspects of sexuality	It considers the intrapsychic and social aspects of the sexual response of women who breast feed, including depression, body image, fatigue, sleep deprivation and parental tasks.
Female sexual performance	It is a component of sexual behaviour that is a consequence of the relationship between hormonal actions in the brain, sexual arousal and expectations of sexual competence that results in the performance of the individual. ²⁸
Sexual dysfunction	Involves a group of disorders that are typically characterised by clinically significant disorders in a person's ability to respond sexually or experience sexual pleasure. ¹ These disorders affect the dimensions of desire, excitement, lubrication, orgasm, satisfaction and pain. ²⁹

were adapted according to the specificities of each database. The filters used were: literature with humans; in the Spanish; Portuguese or English languages; without any time limit or restrictions according to the type of study (online supplementary file 2).

The following multidisciplinary and health sciences electronic databases were used: PubMed, Excerpta Medica Database, CINAHL, PsycINFO, Science Direct and Google Scholar in the search for grey literature. In addition, studies will be identified through the references of the studies retrieved in the databases and selected for the review.

Study selection

The selection process will be presented through the flow chart Preferred Reporting Items for Systematic Reviews and Meta-Analyses, according to the steps: (1) identification; (2) screening; (3) eligibility and (4) inclusion²¹ (online supplementary file 3).

In the identification phase of the literature retrieved, all studies will be organised with the help of the EndNote Basic programme, which manages the organisation, storage, identification and removal of duplicate studies. Then, the references will be exported to a database constructed using Microsoft Excel V.2016.

In the screening stage, the preselection of potentially eligible literature will be performed. In order to reduce potential bias in this step, independent review of the titles and abstracts of the preselected studies will be performed independently by two reviewers (DC-R and MF-T). Using the SPSS V.23.0 software, the interobserver agreement index between the DC-R and MF-T reviewers, using the kappa criterion >80% ($p < 0.05$)²² will be calculated. In case of disagreement in the selection of the studies, a third reviewer (RA) will be consulted.

The eligibility stage will be developed by a team of two reviewers (MF-T and DC-R). To avoid possible bias, the reviewers will independently and comprehensively read the literature preselected in the screening stage. In case of disagreement, a third reviewer (RA) will be consulted.

To evaluate the inclusion or exclusion of eligible studies, reviewers will use the following criteria:

Inclusion criteria

1. Literature in English, Spanish or Portuguese, focused on the research questions detailed in [table 1](#).
2. Literature focusing on sexual dysfunction in nursing population, including: qualitative or quantitative empirical studies; studies of literature review, regardless of the method used and brief communications of ongoing studies.
3. Grey literature focusing on sexual dysfunction in the nursing population, including: annals of congresses, conferences of organisations or societies; academic dissertations, theses, books, book chapters and government documents.

4. Cohort studies focusing on the sexual function of nutritious women, who have followed up from pregnancy to post partum, will also be included.

Exclusion criteria

Studies focusing on the sexuality of pregnant women and brief communications with inconsistent results will be excluded.

Patient and public involvement

There was no participation of patients in this study.

Charting the data (extraction of the data)

In this step, the data will be extracted from the literature included, evaluating the quality of the individual studies selected.

The following data will be extracted based on the Cochrane Consumer and Communication Review Group Data Extraction Template (2015)²³: database, year, volume, pages, funding agency, country, language, title, type of study, method, inclusion and exclusion criteria, sample, characteristics of the population, place and period of the study. In addition, information will be extracted regarding the sexual behaviours of women who breast feed, the types of sexual dysfunction and the factors that contribute to FSD (online supplementary file 4).

Mapping of the literature included

In order to visualise the geographical location of the literature, the articles will be geocoded, through the correspondence address of the first author listed in the article. Through the Google Earth V.7.15 software, the geographical coordinates of these addresses will be obtained and later geocoded using the TerraView V.4.2.2 software. The final file of geocoded addresses will follow the Universal Transverse Mercator projection and the Geocentric Reference System for the Americas 2000 datum. Finally, the articles included in the scoping review will be presented on the map of the world.

Risk of bias (quality) assessment of individual studies

To reduce the potential bias, the data will be extracted by a team of six reviewers using the standardised extraction form adapted from the Cochrane Consumer and Communication Review Group Data Extraction Template (2016).²³ The quality of the empirical studies included in the review will be evaluated using the Mixed Methods Appraisal Tool.²⁴ This instrument was developed to evaluate the methodological quality of empirical studies included in systematic reviews, conducted through qualitative, quantitative and mixed methods. Subsequently, the evidence of the methodological quality of the scope of the literature will be presented, including the evidence of studies that present low scores in the quality assessment, which will not be excluded from the sample analysed.

Collating, summarising and reporting the data

The selected studies will be characterised, and the extracted data will be summarised to discuss the evidence

that will support possible answers to the research questions and recommendations for future studies.

The characterisation of the studies will cover: authors; year of publication; countries; aim of the study; population and sample size; place of study; method; results and evaluation of the methodological quality of empirical studies (online supplementary file 5). For the descriptive analysis of the characteristics of the included literature, the SPSS program is going to be applied calculating absolute frequencies and percentages.

The summary of the quantitative evidence is going to be carried out in a narrative form by identification categories.

The summary of the qualitative evidence will be presented through the themes, constructed from the thematic deductive analysis. The thematic analysis process will be performed through the following steps: (1) familiarisation with the data, (2) generation of initial codes, (3) search for themes, (4) review of themes, (5) definition of the themes and (6) articulation of the themes with the literature of the area and the production of the final analysis.²⁵

Stakeholder consultation

This is the final step of the review and will consist of a panel of experts on the clinical implications of the evidence summarised in the study.¹⁸

The panel will be made up of three specialists: a researcher with experience in the area of breast feeding; a researcher with psychology and experience in the subject of sexuality and a medical sexologist with experience in research into sexual dysfunction.

In this procedure, a synthesis with the preliminary results of the literature will be sent to the panel of specialists, later, two web-based conferences, approximately 1 hour long, will be scheduled to develop a group discussion about their views on the evidence found in the literature. In the first conference, the practical recommendations of the evidence, dissemination strategies and guidelines for future studies will be discussed. In the second conference, the final report of

the research will be presented which will conclude with the practical recommendations, dissemination strategies and outlines for future studies contributed by the panel of experts at the first meeting.

ETHICS AND DISSEMINATION

The results will be disseminated in a scientific journal, as well as in various media, such as: conferences, seminars, congresses or symposia.

The results of the review will be disseminated in an open access journal to ensure access for undergraduate and graduate students, researchers, academics and research groups and will be disseminated at conferences aimed at students, researchers, health teams and nursing women's communities.

The stages of the review will be presented in the following table 3.

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Contributors As this is a review of the scope of the literature. This review is being conducted by a team of 12 researchers. MF-T, DC-R: proposed the development of the study and coordinated the construction of this protocol. MF-T, DC-R, JCS, LAL, IAS, LCN, RAA: development of the theoretical aspects of method. MF-T, DC-R, JCS, LAL, SPO, TZB, LSA, ACABL, MY, IAS, LCN, RAA: discussed, consensus of the three research questions and articulated for the purpose of the review. MF-T, DC-R, SPO, TZB, LSA, ACABL, MY: performed the systematic search of the seven electronic databases. All authors read and approved the final manuscript.

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Patient consent Not required.

Ethics approval As it will be a review study, without human involvement, there will be no need for ethical approval.

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Table 3

Stage of review at the time of this submission	Started	Completed
Preliminary searches	4 October 2017	30 November 2017
Piloting of the study selection process	12 November 2017	5 February 2018
Formal screening of search results against eligibility criteria	08 February 2018	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

REFERENCES

1. American of Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 5th edn, 2013.
2. McCabe MP, Sharlip ID, Lewis R, *et al*. Risk factors for sexual dysfunction among women and men: a consensus statement from the fourth international consultation on sexual medicine 2015. *J Sex Med* 2016;13:153–67.
3. McCabe MP, Sharlip ID, Lewis R, *et al*. Incidence and prevalence of sexual dysfunction in women and men: a consensus statement from the fourth international consultation on sexual medicine 2015. *J Sex Med* 2016;13:144–52.
4. Abdool Z, Thakar R, Sultan AH. Postpartum female sexual function. *Eur J Obstet Gynecol Reprod Biol* 2009;145:133–7.
5. Convery KM, Spatz DL. Sexuality & breastfeeding: what do you know? *MCN Am J Matern Child Nurs* 2009;34:218–23.
6. Leeman LM, Rogers RG. Sex after childbirth: postpartum sexual function. *Obstet Gynecol* 2012;119:647–55.

7. Avery MD, Duckett L, Frantzich CR. The experience of sexuality during breastfeeding among primiparous women. *J Midwifery Womens Health* 2000;45:227–37.
8. Khajehei M, Doherty M, Tilley PJ, et al. Prevalence and risk factors of sexual dysfunction in postpartum Australian women. *J Sex Med* 2015;12:1415–26.
9. Acele EÖ, Karaçam Z. Sexual problems in women during the first postpartum year and related conditions. *J Clin Nurs* 2012;21:929–37.
10. Barrett G, Pendry E, Peacock J, et al. Women's sexual health after childbirth. *BJOG: An Int Journal Obstet Gynaecol* 2000;107:186–95.
11. Rowland M, Foxcroft L, Hopman WM, et al. Breastfeeding and sexuality immediately post partum. *Can Fam Physician* 2005;51:1366–7.
12. Shirvani MA, Bagheri-Nesami M, Bavand M. P507 Women's sexual dysfunction during the first year after child birth. *Int J Gynecol Obstet* 2009;107:S557.
13. Anbaran ZK, Baghdari N, Pourshirazi M, et al. Postpartum sexual function in women and infant feeding methods. *J Pak Med Assoc* 2015;65:248–52.
14. Malakoti J, Zamanzadeh V, Maleki A, et al. Sexual function in breastfeeding women in family health centers of tabriz, iran, 2012. *J Caring Sci* 2013;2:141–6.
15. Millheiser L. Female sexual function during pregnancy and postpartum. *J Sex Med* 2012;9:635–6.
16. Woolhouse H, McDonald E, Brown S. Women's experiences of sex and intimacy after childbirth: making the adjustment to motherhood. *J Psychosom Obstet Gynaecol* 2012;33:185–90.
17. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol* 2005;8:19–32.
18. Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. *Implement Sci* 2010;5:69.
19. Colquhoun HL, Levac D, O'Brien KK, et al. Scoping reviews: time for clarity in definition, methods, and reporting. *J Clin Epidemiol* 2014;67:1291–4.
20. Shamseer L, Moher D, Clarke M, et al. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. *BMJ* 2015;350:g7647.
21. World Health Organization. *Indicators for assessing breastfeeding practices*. Geneva, Switzerland: World Health Organization, 1991.
22. World Health Organization. *Defining Sexual Health: Report of technical consultation on sexual health 28–31 January 2002*, Geneva. *Sex Heal Doc Ser* 2006:30.
23. Pfaus JG. REVIEWS: Pathways of Sexual Desire. *J Sex Med* 2009;6:1506–33.
24. Wiegel M, Meston C, Rosen R, et al. The Female Sexual Function Index (FSFI): cross-validation and development of clinical cutoff scores. *J Sex Marital Ther* 2005;31:1–20.
25. Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med* 2009;6:e1000097.
26. Mathes T, Klaben P, Pieper D. Frequency of data extraction errors and methods to increase data extraction quality: a methodological review. *BMC Med Res Methodol* 2017;17:152.
27. Cochrane Consumer and Communication Review Group. *Data extraction template*. 2015 <http://cccr.org/author-resources>.
28. Pace R, Pluye P, Bartlett G, et al. Testing the reliability and efficiency of the pilot Mixed Methods Appraisal Tool (MMAT) for systematic mixed studies review. *Int J Nurs Stud* 2012;49:47–53.
29. Clarke V, Braun V. Teaching thematic analysis: over-coming challenges and developing strategies for effective learning. *Psychologist* 2013;26:120–3.