Woman's reproductive span: a protocol of a systematic scoping review

Ashraf Nabhan^{1,2*}, Gitau Mburu³, Farida Elshafeey¹, Menna kamel¹, Rana Magdi¹, Mohamed Elshebiny¹, Yasmeen Gamal Abuelnaga¹, Mohanad Ghonim¹, Menatallah Hatem Said Abdelhamid¹, Mohamed Ghonim¹, Passant Eid¹, Abdallah Morsy¹, Mohamed Nasser¹, Nadine Abdelwahab¹, James Kiarie³

Abstract

Objectives: The aim of this review is to map and explore published literature regarding (i) woman's reproductive span, (ii) the determinants of reproductive span, and (iii) the impact of reproductive span on population demographics and potential demand for assisted reproduction services.

Methods: This scoping review will follow the Arksey and O'Malley framework and the Joanna Briggs Institute guidelines. We will search MEDLINE, CINAHL, Scopus, reports of demographic surveys and the global burden of disease reports. We will include published reports on woman's reproductive span. Two reviewers will complete all screening and data abstraction independently. Data will be extracted onto a data charting table to create a descriptive summary of the results.

Results: This is a protocol of a scoping review.

Conclusions: This scoping review will provide a broad overview of the landscape of research in woman's reproductive span. The analysis will allow us to refine future research in this area.

Systematic review registration: Open Science Framework <https://osf.io/wysru>

Keywords

Humans, Female, Reproductive span, menarche, menopause, demography, Assisted reproduction, Infertility

¹ Egyptian Center for Evidence Based Medicine, Egypt

² Department of Obstetrics and Gynecology, University of Ain Shams, Egypt

³ Department of Sexual and Reproductive Health and Research, The World Health Organization

*Corresponding author: Prof. Ashraf NABHAN, Email: anabhan@med.asu.edu.eg

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1. Introduction

women's reproductive span is the time interval between menarche and menopause. While life expectancy is increasing in many countries as a result of advances made in medicine and public health [1], the reproductive span shows little change [2]. As a result, the reproductive span has become short relative to the total life span [3].

women's reproductive span has an impact on wom-

men's reproductive decisions including when to get pregnant, spacing between pregnancies, and finally when to have the last birth. The span also influences the fertility levels in the population [4].

As the age advances, women's fertility declines. The decline of the number and quality of oocytes determines the age-dependent decline and ultimately the cessation of female fertility. The tendency among women to delay child bearing further reduces the number of reproductive years, notably the most fertile years [5].

Globally, infertility is considered a major public health issue, affecting approximately 8-12 percent of couples or 186 million people [3, 6]. Infertility affects

8 percent of women aged 19-26 years, 13-14 percent of women aged 27-34 years and 18 percent of women aged 35-39 years [7]. Infertility remains a woman's social burden. Unfortunately, areas of the world with the highest rates of infertility are often those with poor access to assisted reproductive techniques (ARTs). In such settings, women may be abandoned to their childless destinies.

Under most demographic circumstances, reproduction is the most important determinant of population dynamics and growth. It follows that understanding the changes in women's reproductive span is fundamental to the study of demography and could provide useful information for future directions for research and intervention [8].

Objectives

The aim of this scoping review is to examine and map the extent of published literature related to (i) woman's reproductive span, (ii) the determinants of reproductive span, and (iii) the impact of changes in reproductive span on population demographics and potential demand for assisted reproduction services.

2. Methods

As the concept of women's reproductive span is broad and complex, and the literature includes studies with different methodologies, a scoping review approach appears to be the most appropriate synthesis method. The scoping approach will map the range, breadth and extent of a broad spectrum of literature and will help to identify research gaps.

The scoping review conduct will be guided by methods and framework of Arksey and O'Malley [9], subsequently adapted by Levac et al. [10] and Colquhoun et al. [11] and the Joanna Briggs Institute guidelines [12].

The protocol will be reported in accordance with the reporting guidance provided in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA-P) statement [13]. It is prospectively registered within the Open Science Framework platform <https://osf.io/wysru>.

The process of performing a scoping review will involve the following stages:

1. Identifying the research question.

2. Identifying relevant published literature.
3. Selecting which studies to include.
4. Extracting and charting the data collected from these studies.
5. Reporting and disseminating the results.

Stage 1: Identifying research questions

The following questions will guide the scoping review:

1. What are the reported working definitions of fertility span?
2. What are the reported changes in the fertility span?
3. What are the reported factors that are associated with changes in the fertility span?
4. What are the reported effects of changes of fertility span on population demography?
5. What are the reported effects of changes of fertility span on utilization of assisted reproduction?

Stage 2: identifying relevant studies

We will conduct a systematic search to identify both published and unpublished primary sources as well as reviews.

First step: We will conduct an initial limited search of one bibliographic database. We will analyze the text words contained in the title and abstract of retrieved papers, and of the index terms used to describe the articles.

Second step: all identified text words and index terms will be used to develop the search strategy by an experienced author [AN] This will further be refined through team discussion. The strategy for searching bibliographic databases includes the following terms "menopause/statistics and numerical data" [MeSH Terms] OR "menarche/statistics and numerical data" [MeSH Terms] OR "age at menarche" [Text Word] OR "age at menopause" [Text Word] OR "age at natural menopause" [Text Word].

The search strategy for different databases can be found in Appendix 1. We will search EBSCO MEDLINE, Pubmed, CINAHL, Web of Science and Scopus

electronic databases. We shall also search Global Burden of Disease Study 2019 (GBD 2019) Fertility Estimates 1950-2019 and Population Estimates 1950-2019, Organisation for Economic Co-operation and Development (OECD) Database, and Demographic and Health Surveys (DHS) datasets. We will not impose any language or date restriction.

Third step: We will hand-search the list of references of relevant articles. We will explore the "Cited by" logs of relevant articles.

Stage 3: study selection

Selection of studies will be performed in two stages. All records identified by the electronic search will be independently screened by two authors based on the titles and abstracts. The second stage of selection will be based on reviewing the full text of potentially relevant articles. If an agreement for abstract or full article inclusion cannot be reached between the two reviewers, an opinion will be requested from a third reviewer. We will consider all study types that reported woman's reproductive span.

A flow chart showing details of studies included and excluded at each stage of the study selection process will be provided.

Stage 4: Data charting process

A data-charting electronic form will be used. Two authors will independently extract data and continuously update the data-charting form.

Given the broad scope of the review, the team will regularly discuss the data and continuously update the data-charting form in an iterative process.

We will extract the following data items: report data (title (TI), publication date (DP), First author (FAU), language (LA), publication type (PT), article identifier (AID)), methodological data (research design, participants, sample if applicable, Study period, countries), and list of variables. We will contact the authors of published reports for additional information, if deemed necessary. We will not perform a formal critical appraisal of studies for this scoping review.

Stage 5: summarizing results

This section will be organized under the following categories:

1. The definition of reproductive (fertility) span
2. The changes in the reproductive span
3. The determinants of changes in the reproductive span
4. The effects of changes of reproductive span on population demography
5. The effects of changes of reproductive span on utilization of assisted reproduction

The full review will be reported according to the PRISMA-ScR [14].

3. Discussion

Key milestones in women's reproductive life span mark changing life stages with different fertility intentions and family planning needs. Knowing the typical ages at such events contributes to understanding the changes in family and population. It also helps inform needs for reproductive health services.

The review will map the published literature on woman's reproductive span, the determinants of this span, and its impact on population demographics and assisted reproduction services. By providing a broad overview, it will allow us to refine future research in this area by focusing on the most notable knowledge gaps.

The results of this scoping review will be disseminated through peer-reviewed publications and presented at international conferences.

Authors' contributions

AN, GM, and JK conceived the idea for this review. AN designed the scoping review methods.

AN and GM collaborated in writing the first draft of this manuscript.

JK, FS, Mk, RM, MS, YA, MG, MA, MG, and PE reviewed the manuscript resulting in a revision of several drafts.

All authors read and approved the final manuscript.

Authors' information

AN, Professor of Obstetrics and Gynecology at Ain Shams University, Director of Egyptian Center for Evidence Based Medicine.

FS, Mk, RM, MS, YA, MG, MA, MG, and PE: research fellows at the Egyptian Center for Evidence Based Medicine.

GM, Technical officer, CFC unit, Sexual and Reproductive Health and Research, World Health Organization.

JK, Head of the CFC unit, Sexual and Reproductive Health and Research, World Health Organization.

Availability of data and materials

All data generated or analysed during this study will be included in the published scoping review article and will be available upon request.

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

The authors have no competing interests.

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