

Model of health services for future parents: a scoping review

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ABSTRACT

The readiness of prospective parents plays a pivotal role in their journey toward parenthood, influencing their ability to navigate the transition smoothly. This readiness can be cultivated through comprehensive physical and mental health screenings, empowering them to embark on their parenthood journey with a well-prepared and healthier pregnancy plan. This scoping review aimed to identify previous research evidence regarding health service models for prospective parents. This research is a scoping review using Framework Arksey & O'Malley and PRISMA-Scr Checklist, four journal databases: Pubmed, Wiley Online Library, EBSCO, and Proquest. Apart from that, this research also used Google Scholar and official sites that support it. The keywords used are models, health services, and future parents. Article quality assessment using MMAT (Mixed Methods Appraisal Tool). A total of 2,899 articles were checked for duplication and title screening, abstract screening. A total of 21 articles were screened for the whole article, and only 11 were deemed eligible. The results of this article is that health programs during the premarital and preconception periods are important in preparing a healthy generation. Each country has premarital and preconception health programs, including providing blood supplement tablets and folic acid, mental health screening, and genetic disease screening. It is expected that cross-sector collaboration could increase the use of health services during the premarital and preconception periods. These programs serve as crucial avenues for imparting essential knowledge and fostering positive behaviors that can significantly impact the health outcomes of both parents and their future offspring. By prioritizing proactive healthcare measures and education during these pivotal stages, society lays a robust foundation for promoting the well-being and vitality of future generations.

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1. Introduction

The pre-marital period is an important event in preparing for marriage. Many countries in the world require prospective couples to take part in a premarital counseling program. Premarital counseling programs have been proven to increase the readiness of prospective bride and groom couples to enter the marriage period [1]. Premarital education is a method used for prevention and the latest approach for married couples in readiness to face problems during marriage and avoid

marital dissatisfaction [2] which aims to provide knowledge related to the purpose of marriage, psychology of women and men, concern about a good marriage and important things that must be prepared when entering marriage and sexual education [3] so that couples are able to prepare themselves to face problems that arise with their partner and with their family, increase concern for their partner and also strengthen their roles, rights and obligations in being husband and wife [4].

Couples are required to undergo premarital screening. Premarital screening aims to provide medical consultation about the possibility of transmitting the above-mentioned diseases to other partners or children and to provide options to spouses/partners that help them plan a healthy family. Premarital screening reduces the spread of the above-mentioned diseases and the financial burden of their treatment. Premarital screening is an examination for couples who are planning to get married to check for genetic disorders in the blood such as thalassemia, crescentic anemia, hepatitis B, hepatitis C and HIV/AIDS. Premarital screening provides information about diseases so that couples can plan a healthy family and prevent the burden of diseases that may arise. Premarital screening prevents social and psychological problems and increases health concerns for couples during marriage [5].

Premarital counseling can increase marital success for couples. Couples who attend premarital education have been proven to increase marital satisfaction and commitment, reduce the number of marriages, and reduce the incidence of conflict in the household. In Ghana there is an increase in the number of couples who attend premarital counseling which is carried out 3-6 months before the wedding [6]. During premarital counseling, couples are given information about family, sexual health, communication skills, household financial management, parenting patterns and roles in the household [7]. As for the purpose of scoping review was to explore scientific evidence regarding models of health services for prospective brides and grooms in the world which are related to the form of health programs provided to prospective brides and grooms, supports and barriers to health programs for prospective brides.

2. Method

This scoping review aimed to provide an overview and map research as well as identify gaps and differences between scientific research findings of research published previously. Scoping review in this literature review refers to the scoping review step of Arksey and O'Malley which includes identifying research questions, identifying relevant research articles, screening appropriate articles, conducting data charting, carrying out research data extraction (analysis of research articles through assessing the quality of research articles, reporting findings and holding discussions/discussions with relevant experts) [8].

2.1. Identify Research Questions

This used framework PEO (Population, Exposure, and Outcome) to assist in searching for articles, determining inclusion and exclusion criteria and identifying appropriate articles. Question review on scoping review was "What is the latest scientific evidence regarding to the health service models for prospective brides and grooms?".

Table 1. PEO Framework

Framework	Keywords
Population	Future bride and groom
Exposure	Health services programme
Outcomes	Model of Care

2.2. Identification of relevant article

There were article search strategy used by the author to find suitable articles, the researcher used several strategies such as using inclusion and exclusion criteria, using keywords in article searches, and using publication databases. The inclusion is a primary articles published from 2013-2023 and scientific articles in English and/Indonesian. The exclusion criteria is paper opinion, review, commentary and research article that focuses on health services for married couples for research articles used in the search strategy for relevant articles.

In selecting articles, use several search strategies such as using keywords, using medical subject heading (MesSH), use truncation, use Boolean operator (OR, AND and NOT). This scoping review used 4 journal databases, namely Pubmed, EBSCO, Proquest, Wiley, while the gray literature uses Google Scholar and supporting sites. The author uses keywords in searching articles to avoid errors in searching databases and reference lists [9]. The keywords used in searching for articles in this research are as follows:

Table 2. Keyword for literature search

Population	Exposure/ Intervention	Outcomes
Couple* OR Bride* OR Groom* AND	Health Program OR Healthcare* OR Education OR Sexual Reproductive Health OR Preconception care OR Premarital care* AND	Model OR Healthcare Model OR barriers OR Evidence

2.3. Selecting Article

In selecting articles, the author carried out several scoping review steps. The steps in selecting articles include checking for duplicate articles, screening titles and abstracts, then research articles that have been selected are thoroughly reviewed to assess the suitability of the articles for the research objectives scoping review [8]. Scoping this review uses Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) flow chart and PRISMA-ScR Checklist in documenting scientific article search protocols, writing review reports and information on research article search strategies that have been carried out [8,10].

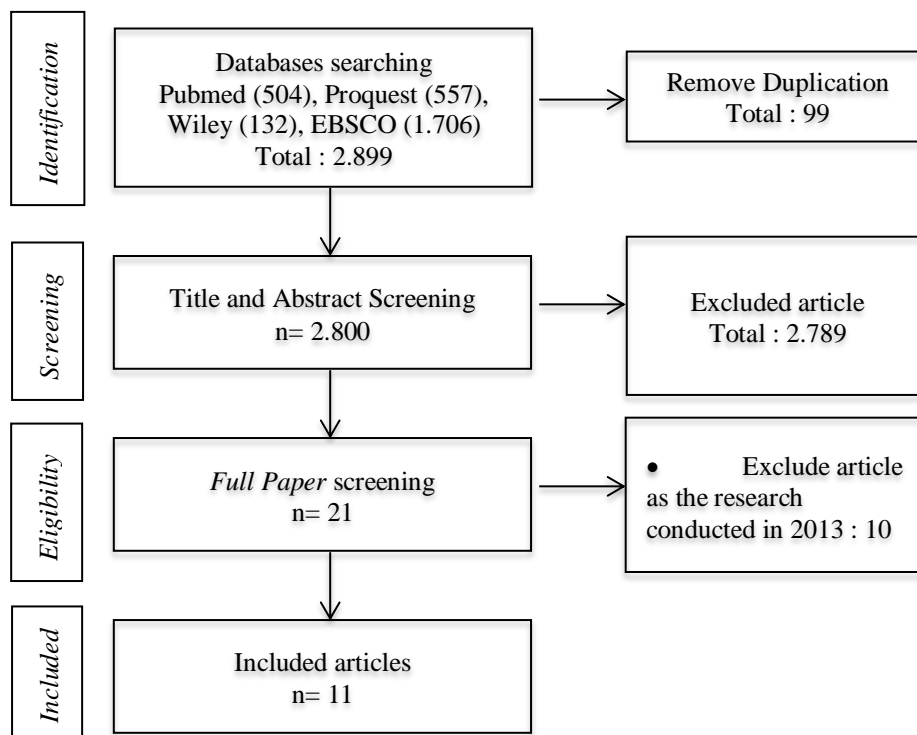


Figure 1. PRISMA Flow Chart

Based on search results using keywords in databases and search engines, 2,899 articles were obtained. All articles are included in *Mendeley* and 99 articles were removed through article duplication checking. Next, the researchers manually screened the titles and abstracts of 2,800 research articles and found that 2,789 were excluded because they did not meet the inclusion and exclusion criteria. A total of 21 articles were screened as a whole, 10 of the 21 articles were excluded because the research data collection was carried out before 2013. Article extraction and article quality assessment were carried out on the 11 articles included.

2.4. Data Charting

It uses article synthesis through charting data taken from Joanna Briggs Institute which consists of author information, article title, objectives, research methods and results of research conducted [11].

Table 3. Data Charting

Code Article	Title	Country	Objective	Research methods	Results
P1	Premarital mental health screening among the Saudi population [12]	Saudi Arabia	To assess attitudes and knowledge about readiness and premarital screening related to mental health and psychological disorders	Cross-sectional	75.81% of research respondents agreed to carry out mental health screening before marriage to prevent diseases that could be passed on to children. Health workers, ministries of health and public policy makers need to pay special attention to increasing awareness of the importance of mental health screening before marriage.
P2	Perceptions and Practice of Preconception Care by Healthcare Workers and High-Risk Women in South Africa: A Qualitative Study [13]	South Africa	To explore perceptions and practices preconception care (PCC) by health workers and high-risk women in South Africa	Qualitative descriptive	This research produced 4 main themes, namely views on PCC, services in PCC, access to information related to PCC, and benefits from PCC. Health workers believe that PCC is a preventive health service to prevent risky pregnancies. However, access to PCC is still limited and most research informants are less concerned about their reproductive readiness. PCC services provided include genetic screening and counseling, PCC counseling, preventive services and family planning. Most research informants are aware that PCC administered

Code Article	Title	Country	Objective	Research methods	Results
					adequately can reduce maternal and neonatal deaths and prevent congenital abnormalities.
P3	The effect of a local promotional campaign on preconception lifestyle changes and the use of preconception care Marjolein [14]	Holland	To determine the benefits of education on lifestyle changes during the pre-conception period and the use of PCC.	Quasi-experimental research.	This research shows that women who receive education regarding pre-conception readiness experience changes in behavior with OR 1.56 (95% CI 1.02–2.39) primarily associated with alcohol use and increased access to PCC services.
P4	Clients' Viewpoints about the Quality of Services in the Premarital Counseling Classes in Tabriz Health Centers [15]	Iran	To assess the quality of premarital counseling provided in Iran	Cross-sectional study	This research shows that the majority of women who participated in the research stated that the quality of the premarital counseling provided was good. However, a small number explained that there were weaknesses regarding sexual health information, thalassemia and several contraceptive methods such as IU and injectable contraception.
P5	Premarital Counseling Practices among Christian and Muslim Lay Counselors in Ghana [16]	Ghana	To explore the practice of premarital counseling in Christian and Islamic communities in Ghana	Qualitative research	This research shows that most premarital counseling is carried out in an unstructured manner with 2 main materials, namely medical preparation and physical preparation. In medical preparation, infectious disease screening is carried out (HIV, Hepatitis B), genetic disease screening (sickle anemia and rhesus examination).
P6	Knowledge and Perception of and Attitude toward a Premarital Screening	Qatar	To determine the level of knowledge, attitudes and factors associated with	Cross-sectional study	This research shows that 376 (79%) know about premarital screening. Students from Qatar, not carrying out genetic

Code Article	Title	Country	Objective	Research methods	Results
	Program in Qatar: Cross-Sectional Study [17]	A	behavior among unmarried students and prospective partners.		examinations on family members, and not receiving information regarding premarital screening are closely related to low levels of knowledge. Around 56% of students received inaccurate information regarding premarital screening. Research participants who canceled their marriage (37.4%) were due to poor premarital screening.
P7	Women's and Care Providers' Perspectives of Quality Preconception Care: A Qualitative Descriptive Study Abstract [18]	Iran	To identify the quality of preconception care (PCC) from the perspective of women and health workers.	Qualitative research	This research shows that midwives and women experience various obstacles in preconception care (PCC), such as management in providing health services, limited health education provided, and a lack of awareness of the importance of PCC for women.
Q8	How to improve preconception care in a local setting? Views from Dutch multidisciplinary healthcare providers [19]	Holland	To explore the views of health workers and improve PCC in work areas.	Mix-method	This research shows that most research informants agree that preconception services are provided in primary health facilities. Health workers felt less competent in providing information related to premarital care (p value = $0 < 0.001$) compared to midwives. Innovation in providing care can be improved by using social media.
P9	Knowledge and Perceptions of Preconception care among health workers and women of reproductive age in Mzuzu Malawi: a cross-sectional study [20]	Malawi	To identify knowledge and perceptions of preconception care among health workers and a group of women of childbearing age in Malawi	Cross-sectional study	This research shows that 57.7% of research participants have good knowledge regarding preconception care and this is closely related to good perceptions of preconception care (AOR 0.4; CI 0.2-0.8). The results of quantitative research show that 100% of health workers have an important role in

Code Article	Title	Country	Objective	Research methods	Results
P10	Effectiveness of the Premarital Education Programme in Iran (1)	Southern Ethiopia	To identify premarital care practices and the factors that influence them.	Cross sectional	preconception care. There are obstacles to preconception care, such as limited policies regarding preconception care and educational curricula related to preconception care. The results of this study show that there are 10 elements in preconception care. Only around 6.4% (95% CI 4.2, 8.1) of mothers received preconception care overall with the most frequently provided services being folic acid (67.2%) and vaccination (61.9%). More than half (51.6%) received preconception services at a health center. Around 96 (24.1%) had experiences related to barriers in accessing preconception care including limited privacy, limited integrated services, limited health service facilities and long waits during services.
P11	Prevalence of Hemoglobinopathies in Premarital Screening in the Province of Nigde, Turkey [21]	Türkiye	To identify the incidence of hemoglobinopathies through premarital screening in Türkiye	Retrospective study	A total of 53 (2.63%) people from the 2013 research sample were known to be carriers (carrier) B thalassemia and 5 of them were migrants from Afghanistan, Iran and Georgia. Around 183 (9.1%) of the study sample had iron deficiency anemia and thalassemia. Geographical conditions and the presence of immigrant populations influence the prevalence of haemoglobinopathy, so attention needs to be paid to maximizing haemoglobinopathy prevention programs.

2.5. Article Quality Assessment using the Critical Appraisal Tool

Critical appraisal used to assess the quality of articles resulting from research carried out carefully [22]. Research articles that eligible on scoping review This uses MMAT (Mixed Methods Appraisal Tool) for assessing the quality of research articles. MMAT (Mixed Methods Appraisal Tool) for qualitative, quantitative and mixed method research. 11 research articles were assessed for article quality using MMAT (Mixed Methods Appraisal Tool) with the assessment criteria used, namely: 2 = questions answered well and explained in detail; 1 = question answered but not explained in detail; 0 = questions not answered and/not explained in the article. After assessing the articles, it is then continued with grouping the quality of the articles into 3 criteria/grades that is: very well: final score 11-15; good: final score 6-10; and enough: final score 0-5.

3. Results and Discussion

3.1. Results

The included articles come from several countries, namely from the African continent (36%) including Malawi, Ghana, Southern Ethiopia, South Africa, from the Asian continent it comes from Iran, Qatar, Turkey and Saudi Arabia, while from the European continent it comes from the Netherlands. A total of 11 selected research articles used a qualitative research design, 3 articles (27%). Quantitative research design was 6 articles (54.5%), mixed-method research design was 2 articles (18.5%). The data shown in Table 4.

Table 4. Characteristics of Article

	Results	Articles	
		Frequency	Percentage (%)
Continent	Europe	1	9
	Asia	4	36
	Africa	6	55
Methods	Quantitative	6	54.5
	Qualitative	3	27
	Mixed Method	2	18.5

Based on the article theme analysis carried out after data analysis through data extraction and assessing the quality of research articles, the research article themes that have been selected are identified, namely:

Table 5. Analysis and Mapping of Research Article Themes

No	He	Under Theme	Research Articles
1	Service Model	Mental health screening	A1
		Preconception Care	A2, A8, A9, A10.
		Preconception education	A3
		Premarital counseling	A4, A5,
		Premarital screening	A6, A11
2	Obstacle	Implementation	P2, A5, A6, A7, P8, A9, A10
		Policy	A5, A8, A10, A11

3.2. Discussion

a. Service Model

In premarital care (premarital care) and preconception care there are several models of health services provided in several countries in the world such as mental health screening for prospective brides and grooms (P1), preconception education (P2), premarital counseling and screening (P3) (P4) (P6) (P7) (P12), preconception care (P10) (P11). Research conducted in Malawi explains that there is positive knowledge and perception from research participants regarding preconception care (P10).

This is in accordance with research conducted in Saudi Arabia where 75.81% of research respondents agreed to carry out mental health screening before marriage to prevent genetic diseases (P1). The health services provided before marriage in Ghana and Qatar show that preparations for medical examinations include infectious disease screening (HIV and Hepatitis B) and genetic disease screening (sickle anemia and rhesus examination) (P6) (P7) while preconception care the most frequently administered are folic acid, vaccination (61.9%) (P11), and blood tests (P12). The education regarding preconception readiness provided in the Netherlands provided significant results because there was a change in behavior with OR 1.56 (95% CI 1.02–2.39) was mainly associated with alcohol use and increased access to PCC services (P3) which should be provided in primary health facilities (P9). In line with research in Iran which explains that the premarital counseling provided is of good quality (P4).

Premarital and preconception health programs are implemented in many countries around the world. Premarital screening and genetic counselling (PMSGs) which is conducted in Saudi Arabia is a screening program that aims to identify and reduce problems caused by genetic diseases and sexually transmitted diseases in vulnerable groups by providing support in decision making to limit transmission to partners and/to future children [23]. Preconception care is an important health service consisting of screening, prevention and care management that can affect pregnancy [24].

The benefits of carrying out preconception care and premarital care are enormous for the readiness of the prospective bride and groom. Young couples in Iran have awareness to improve the quality of their health and prepare their marriage so that it runs smoothly [25]. Research conducted in the Netherlands showed that preconception care provided to the community was proven to increase women's knowledge about risk factors in pregnancy, increased folic acid consumption, reduced alcohol consumption during the first 3 months of pregnancy [26]. The existence of education for the public about preconception health is associated with increased healthy living behavior during the preconception period, especially regarding awareness of alcohol consumption and increased use of health services during preconception [14]. Meanwhile, research conducted in Indonesia shows that premarital counseling has a positive influence on the mental readiness of the prospective bride and groom because it has positive benefits such as the prospective bride and groom becoming more confident in getting married, having clear goals and aspirations for marriage [27]. Premarital counseling also provides benefits to prospective bride and groom couples in improving the couple's communication skills [28]. Previous research shows that to increase satisfaction with the premarital counseling provided, premarital counseling should be given 4 months before the wedding and provide care according to the couple's needs 6 months before the premarital in order to get maximum results and increase marriage readiness for the couple [28].

The premarital and preconception health programs provided to the community are carried out by involving various existing parties. Education about marriage given to prospective brides and grooms should involve professionals and professional health workers for mental health problems [25]. The premarital education program provided also involving the government, health clinics and religious institutions has proven to be effective and more accepted in society [25].

Research conducted by Torkian shows that premarital education using technology in the form of social media-based applications can improve knowledge, attitudes, behavior and problem-solving abilities in couples before marriage [29], in addition, there is the introduction of pre-marital health screening programs carried out in schools and universities are an important part that can increase motivation, strengthening and implementation of premarital screening programs for couples [30].

b. Obstacle

In health services related to premarital care and preconception care, several obstacles were found related to implementation and policy-related obstacles. The obstacles found were limited

knowledge of couples regarding premarital education (P2) (P5), such as around 56% of the research sample in Qatar received inaccurate information regarding premarital screening (P7), while in Iran there was still low awareness of the importance of preconception care for women (P8). This is in accordance with research conducted in southern Ethiopia where only around 6.4% (95% CI 4.2, 8.1) of women received preconception care overall with the most frequently provided services being folic acid (67.2%) and vaccination (61.9%) (P11). Previous research also explained that around 96 (24.1%) women in southern Ethiopia had experiences related to barriers in accessing preconception care including limited privacy, limited integrated services, limited health service materials and long wait times for services (P11), while obstacles included limited staff. health and information systems used in Iran, Ghana and the Netherlands (P5) (P6) (P9) and the existence of policy limitations related to the implementation of preconception care in Malawi (P10).

In Japan, the readiness being parents and being a couple influenced by living without parents, experiences interacting with children, desire to give birth, and desire to rear children as their own parents did [31]. In Indonesia, The adolescent parents feel pressured and are not ready to become new parents, causing stress and depression when becoming new parents. In contrast to developing countries, psychological problems in the transition to parenthood tend to focus on social support and barriers to becoming new parents [32]. Other research shows that there are various obstacles in implementing premarital and preconception care. Other research conducted in Saudi Arabia regarding mental health examinations was greatly influenced by the assessment of the stigma that existed in the community in the Al-Ahsa area where around 91.96% had moderate to low stigma, the stigma that emerged regarding mental health problems was influenced by career, age, language mastered and the influence of people around them who are diagnosed with mental health disorders [33], besides that the use of premarital services and screening is associated with marital status, age, education level and family income [34].

The influence of strong culture and religion is one of the obstacles that has an impact on reducing the effectiveness of premarital counseling in the Jazan area [34]. The influence of women's education level has an impact on the use of preconception care services [35]. This is because women with a high level of education gain access to information about preconception care and also increase women's awareness through increasing autonomy, self-confidence and ability and decision-making about their health [36]. Women's ability to make decisions in the household has a major influence on the use of preconception care services [35]. Women who have limitations in decision making in the household and whose husbands or other family members dominate in decision making have an impact on low use of preconception care services [35]. This is in accordance with other research which shows that the use of maternal health services is strongly influenced by women's ability to make decisions [37].

4. Conclusion

Based on 11 articles conducted review, it is known that health programs during the premarital and preconception periods are an important part in preparing a healthy generation. The health program during the premarital and preconception period can include health screening for genetic diseases, mental health screening, giving blood supplement tablets and folic acid to prepare for a healthy pregnancy, as well as counseling and education related to mental readiness in marriage, ability in decision making and the role of being a parent.

It is hoped that cross-sector collaboration involving health workers, the education sector, religious institutions and health organizations will increase the utilization of the premarital and preconception health programs provided, resulting in effective and high-quality premarital and preconception care. Future researchers are expected to be able to explore in depth the role of health

workers in health services in premarital and preconception care and the effective use of media in premarital and preconception care.

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Conflict of Interest

The authors report no conflicts of interest.

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