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Preventing teenage pregnancy in developing countries: a scoping review

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Abstract

Purpose: This study aimed to determine the most recent attempts to reduce teen pregnancies in low-income nations. **Methods:** This scoping review used the PRISMA-ScR checklist, PEO framework, and Critical Appraisal for assessment. Data were obtained from Pubmed, Science Direct, Wiley, and Ebsco databases. **Results:** The researcher discovered 2,536 pertinent articles, but only ten met the inclusion criteria, which included three themes: Teenage pregnancy-related factors, health initiatives to prevent them, and educational media. **Conclusion:** Local laws, sex education in schools, parenting workshops, evidence-based youth programs, school reproductive health care, and instructional initiatives employing online media are all part of efforts to prevent adolescent pregnancy in developing nations.

Keywords: pregnancy; teenagers; prevention effort

INTRODUCTION

The largest estimated number of births among teenagers aged 15-19 years worldwide in 2021 is in the United States (6,114,000), while Central Asia (68,000) has fewer births among teenagers. The number of births among teenagers aged 10-14 in the United States and Southeast Asia (SEA) reaches 332,000 and 22,000, respectively. In underdeveloped nations, Each year, approximately 21 million females between the ages of 15 and 19 become pregnant, giving birth to 12 million children (World Health Organization, 2022). The pregnancy rate of girls aged 15-19 in the Philippines from 1993 to 2013 increased from 6.5% to 10%. In 2017, 9% of girls aged 15-19 years had given birth with live births (7%), and 2% of them had their first child [2,3]. The teenage pregnancy rate in Southeast Asia, particularly in Laos, Timor Leste, and Singapore, reaches 94.4%, 41.9%, and 2.7%, respectively [4].

Pregnancy and delivery have become the leading causes of mortality among teenagers aged 15 to 19. Compared to people aged 20 to 24, they are more prone to developing eclampsia, puerperal endometritis, and systemic infections. Besides, teenage moms' newborns are more likely to have low birth weights, premature births, and serious neonatal problems [5].

Based on systematic reviews conducted in developed countries, countries in Sub-Saharan Africa have effectively reduced teen pregnancy rates through various prevention programs; for example, the Dominican Republic provides soft skills training programs to teenagers to increase self-esteem, self-efficacy, and life plans. Colombia has a program called Subsidio Educativo, a conditional cash transfer program for teenagers. South Asian, Middle Eastern, and North African countries have implemented sexual and reproductive health education and

training policies and programs. Mexico has a national strategy program for preventing teenage pregnancy. Northern Ireland runs programs of progressive improvement in access to contraception and sexual education [6].

A systematic review in South Asian countries identified factors affecting teenage pregnancy, such as education level, ethnic minority, rural settings, low economic status, and religion, for which regional pregnancy prevention measures are needed [7]. This review aims to map the available evidence related to efforts to prevent adolescent pregnancies in developing nations.

METHODS

Figure 1 provides a list of references based on the Prism Flow chart.

This scoping review used the PRISMA-ScR protocol with the Population, Exposure, and Outcome (PEO) framework [8]. The population was made up of teenagers. It involved articles related to the prevention of teenage pregnancy. It used complete original research articles related to efforts to reduce adolescent pregnancies in developing nations.

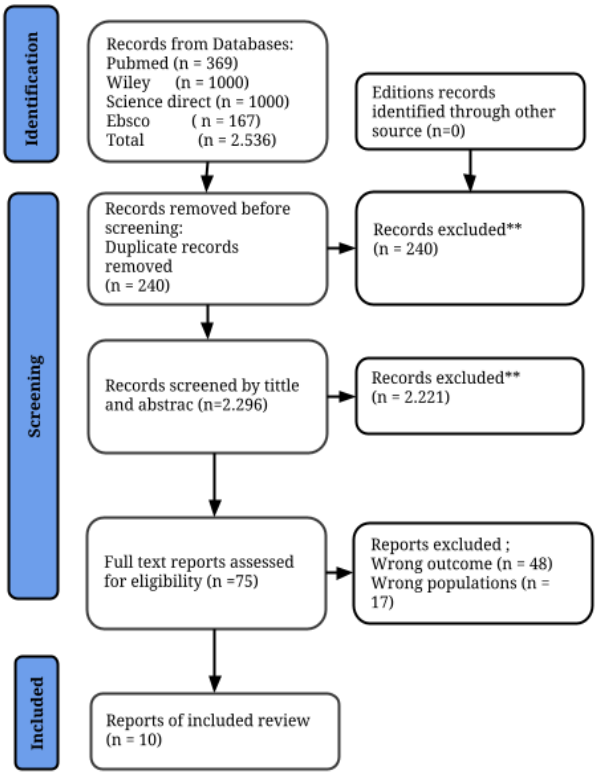

Figure 1. Prisma flowchart

The inclusion criteria were articles published in 2011-2023, articles related to efforts to prevent teenage pregnancy, original and complete articles, and articles written in English or Indonesian. Exclusion criteria were research reports and teenage girls who were already pregnant. The databases used were PubMed, Ebsco, Science Direct, and Wiley. Keywords used covered prevention OR intervention OR program AND adolescent* OR adolescent* AND adolescent pregnant* OR teenage pregnancy* OR teen pregnancy* AND developing countries* (Figure 1).

Ten articles met the criteria for review and critical appraisal using the Joanna Briggs Institute (JBI) [8].

Table 1 shows the results of the critical appraisal assessment, using the Joanna Briggs Institute Critical Examination. Critical appraisal tools assist in assessing the trustworthiness, relevance and results of published papers, the checklist used are checklist for cross-sectional, checklist for qualitative research, checklist for quasi-experimental studies, and checklist for randomized controlled trials [22,23,24]. At the Joanna Briggs Institute Critical Examination there were several questions with a rating of yes, no, unclear and not applicable. The critical assessment results reveal that the publications (1, 2, 7, and 10) perfectly addressed the concerns posed by the Joanna Briggs Institute. To reduce the rate of error, these publications use proven instruments, full data sources, samples, data gathering procedures, and sampling methods. Because the confounding factors are not discussed in the articles, less than ideal outcomes are discovered in articles 3, 4, 5, 6, and 8.

Table 1. Critical Appraisal Assessment

Article code	Critical Appraisal Tools	Hasil
1	JBI Tools For Qualitative	20/20
2	JBI Tools For Cross-Sectional	16/16
3	JBI Tools For Cross-Sectional	14/16
4	JBI Tools For Cross-Sectional	14/16
5	JBI Tools For Cross-Sectional	14/16
6	JBI Tools Quasi-Experimental	17/18
7	JBI Tools For Qualitative	20/20
8	JBI Tools RCT	21/26
9	JBI Tools Quasi-Experimental	16/18
10	JBI Tools Quasi-Experimental	18/18

The characteristics of the 10 articles based on nationality include four articles from Indonesia, one from Georgia, two from Thailand, one from Laos, one from Timor Leste, and one from the Philippines. Two studies used a qualitative, four cross-sectional, one RCT, and three with quasi-experimental.

RESULTS

Table 2. after the selection is done, the researcher summarizes relevant and detailed information according to the characterics of the study literature. The researcher performs data charting by making appropriate tables the characteristic of the literature review study about prevention efforts adolescent pregnancy in developing countries.

Table 2. Data charting

Author/ country	Objective	Methods	Participants, sample size	Results
Effendi et al, 2021 Indonesia [9]	Determine the causes of adolescent pregnancy in rural Indonesia and create strategies to lower the number of teenage pregnancies in 2 villages, namely, Wiralaga 1 and Wiralaga 2.	This qualitative study was conducted from June 2017 to November 2018 employing the participatory action research (PAR) method. Focus group discussions (FGD) with four morning and evening sessions were used to collect data.	FGD 1 : 20, FGD 2 : 25, FGD 3 : 23, FGD 4 : 27, Total participant : 95 teenagers.	Factors influencing teenage pregnancy are poor use of reproductive health services, poor education, poverty, and juvenile delinquency.
Pepito et al 2022 Philippines [10]	This study intended to investigate the correlation between teenage pregnancy in the Philippines and exposure to various family planning and contraceptive messages through various media channels.	A quantitative study using logistic regression. Data were collected using 2 questionnaires	5,120 women between the ages of 15 and 19 were included in the 2017 Philippine National Demographic and Health Survey as sample	The results indicate the requirement for improving sex education in the core curriculum and increase the reach and frequency of internet use to reduce teenage pregnancies.
Yaya et al, 020 Timor-Leste [11]	This study evaluated trends in Timor-Leste's socio-demographic subgroups' adolescent fertility rates.	A quantitative study with cross-sectional design. Data were obtained from demography and health data in Timor Leste in 2009 and 2016, using a 2-stage cluster design.	It included a total of 26,234 individuals from the 2009 and 2016 Censuses.	Poor and uneducated teenagers from rural areas like the Oecussi region have a higher chance of giving birth than those who are rich and educated teenagers in urban areas like the Dili region.
Santisouk et al, 2020 Laos [12]	This study attempted to characterise and identify the variables influencing teens' pregnancy health literacy (PHL).in Kaysone District, Laos.	A quantitative study with cross-sectional design. Face-to-face interviews with 33 items were used to obtain the TPHL (teenage pregnancy health literacy score).	Informants = 262 teenagers aged 15-19 years	A significant correlation between sex education attendance and pregnancy literacy ($p < 0.001$). There is a need for increased teacher education and the creation of school sexual education programmes.
Kumar et al, 2021 Thailand [13]	This study evaluated the impact of text messaging on increasing high school females' knowledge of sexual and reproductive health. .	A quantitative study with cross-sectional design. A questionnaire and a simple random sampling approach were used to collect data.	It involved 128 respondents.	Schoolgirls can effectively share information about sexual and reproductive health using mobile messaging, which has been shown to be an efficient way to control teenage pregnancy problems.
Sriyanti et al, 2022 Indonesia [14]	To determine the effectiveness of using interactive media in preventing unwanted pregnancies in teenage girls.	A quantitative study with quasi-experiments using a one-group pretest-posttest design. Data were collected through interviews.	It involved a sample of 30 students from Simpang Tiga Medan orphanage in 2020.	The use of interactive media and jingles for reproductive health education has been shown to influence the prevention of unwanted pregnancies in teenage girls.
Udmuangpia et al, 2011) Thailand [15]	To determine Thai teens' perspectives about adolescent pregnancy in Sweden.	A qualitative study with a descriptive design. Data were collected through FGD with a semi-structured interview guide.	Samples were 20 people joining a close FGD.	The results indicate that socio-ecological influences are important in culturally appropriate interventions to prevent pregnancy among Thai immigrant teenage girls.
Herman et al, 2020 Georgia [16]	This study aimed to see if implementation support may improve youth evidence-based programme outcomes (EBP) at a low cost.	A study with cluster randomized controlled trials comparing Making Proud Choice (MPC) and Getting To Outcome (GTO) in Georgia and Alabama.	Population = 150,000 – 200,000 people.	Ways to increase the prevention of teenage pregnancy in rural areas such as providing evidence-based programs and using condoms.

Mediastuti et al, 2019 Indonesia [17]	To assess the effectiveness of reproductive health parenting classes on knowledge and attitudes to prevent teenage pregnancy.	A quasi-experimental approach with a pretest-posttest control was used in this investigation. A questionnaire was used to collect the data.	Control group = 30 people. Intervention group = 25 people	Parenting classes can increase the knowledge and attitudes of parents to prevent teenage pregnancy.
Artanty et al, 2019 Indonesia [18]	To assess school health nursing impact of primary prevention of teenage pregnancy training in personal and social skills.	A non-equivalent (pretest and posttest) control group design was used in this quasi-experimental research. Intervention for 6 months.	Sample = 80 students in Yogyakarta.	The knowledge about sexuality, and attitudes about sexuality is expected to prevent teenage pregnancy.

Table 3 presents the main teenage pregnancy themes. The reviewed articles cover topics including the factors that contribute to the problem, methods for preventing it, and educational resources.

Table 3. Theme mapping

Theme	Sub-theme	Article
Factors affecting teenage pregnancy	a. Low reproductive health services	(1)
	b. Low education level	(1)
	c. Sex education	(3,4)
Teenage pregnancy prevention health program	a. Local regulation	(1)
	b. Sex education curriculum in schools	(7)
	c. Parenting class	(9)
	d. Youth evidence-based program	(8)
	e. School's health care	(10)
	f. Education with online media	(2,5,6)
Educational Media	a. Internet information	(2,5)
	b. Interactive media	(6)

Factors affecting teenage pregnancy

The first factor influencing teenage pregnancy is a lack of reproductive health services. Teenage pregnancies tend to cause reproductive health complications in women as well as maternal and infant mortality. The causes of teenage pregnancies are a shortage of healthcare providers and the usage of contraceptives. One of the efforts to prevent teenage pregnancy is to increase counseling about reproductive health in the closest health facilities and primary health centers [9].

Sex education in schools was initially introduced to Grade VIII students, which included topics on sexuality and reproductive health, such as anatomy and physiology, knowledge about contraceptive use, negotiation skills, and how to prevent unwanted pregnancies [7]. Low education levels cause an increase in teenage pregnancies. Girls who continue with higher education tend to control their pregnancy by using contraception more than those with lower education [9].

Increasing sexual education in young women can reduce the risk of teenage pregnancy. Lower education levels are less likely to be able to practice safe sex. On the other hand, higher education levels with high knowledge practice safe sex by using condoms. The research results indicated a lack of strategic planning hinders the achievement of the SDGs in reducing neonatal maternity and maternal mortality among teenagers. The government is expected to increase women's education [11]. Article [4] shows a significant relationship between attendance at classes that include sex education content and the level of Teenage Pregnancy Health Literacy (TPHL). The low TPHL score indicates the importance of improving sex education for youth in Laos. When qualified instructors provide comprehensive sex education, it has a favorable effect. Educators can motivate young people to postpone sexual activity [12].

Health programs to prevent teenage pregnancy

The findings in article [1] were used as the basis for Mesuji Regional Regulation Number 32 of 2018 concerning the prevention of teenage marriage [9]. Local governments, parents, children, communities, and stakeholders can prevent child marriage. Families or parents can provide character and religious education, develop moral and cultural values, and provide reproductive health education. Parents have to provide guidance and care for children as well as keep children from getting married at a young age [9].

Sex education in schools was initially introduced to Grade VIII students with the topics of anatomy and physiology, knowledge about contraceptive use, negotiation skills, and ways to prevent unwanted pregnancies [7].

The parenting class model can increase parents' knowledge and attitudes to prevent teenage pregnancies. Parents have a crucial role in their children's growth and development, as well as the presentation of sexual education. Teenagers with a good relationship with their parents are more likely to delay sexual intercourse. In parenting classes, parents can provide education on sexual values, beliefs, information, and expectations to children to

influence sexual behavior, attitudes, and decision-making [17].

Evidence-based obstetrics programs to prevent teenage pregnancies through *Getting to Outcome to Making Proud Choice* can benefit society by preventing teenage pregnancy using condoms and other possible long-term effects [16]. Evidence-based programs by UNICEF show that parents play an important role in influencing teenagers' interactions with the complex factors that shape their development. The programs have the potential to have a positive influence on adolescent development [4].

The school's health nursing skill intervention for six months resulted in increased self-confidence, healthy dating, decision-making behavior, behavior against premarital sex, and coping with pressure. They are expected to prevent teenage pregnancies [18].

Educational media

From SMS (5%) to television (55%), a variety of media cover the dissemination of information regarding family planning and contraceptive use. Besides, exposure to SMS about contraception reduces teenage pregnancies. Article [5] indicates that SMS has shown to be beneficial in raising teens' sexual and reproductive health knowledge, encouraging healthy sexual and reproductive behavior, and addressing teen pregnancy issues. Article [6] indicates that using interactive media and jingles for reproductive health education has been proven to prevent unwanted pregnancies in teenage girls. The use of video media can help students better understand material about exposure to pornography that affects reproductive health. Providing counseling about exposure to pornography is expected to help teenagers be responsible for their health behavior and reduce teenage pregnancies [14].

DISCUSSION

Some strategies have prevented teenage pregnancies in developing nations.

Local Government Regulation. Law Number 9 of 2015 concerning local government regulations defines regional regulations as laws established by the regional representative council with the approval of the regional head. This program is an effective prevention program for teenage pregnancy in which parents must provide sexual education to teenagers [9].

Sex education in schools. Sex education provides knowledge about everything related to gender, including the growth/development of each gender (male or female) [19]. Sex education in schools is highly recommended because education for the younger generation must be provided formally. Understanding the sexuality and reproductive health of teenagers can encourage them not to have premarital sex and prevent teenage pregnancy [21].

Parenting class. Parenting class is a process of communication between parents and how they look after their kids [21]. Parenting classes affect the attitudes and knowledge of parents in efforts to prevent teenage pregnancy [17]. Teenage is a vulnerable age, so parents and family greatly influence teenage development, both positively and negatively. Teenagers with a good relationship with their parents will directly obey their parents' advice and consider all decisions that will be made. It is expected that it can prevent teenage pregnancies [20].

Evidence-based programs for teenagers. Evidence-based programs are one of the best ways to guide decision-making in the health sector [16]. Besides, evidence-based programs are a good strategy for preventing teenage pregnancies. This program monitors and evaluates teenagers' understanding of reproductive health and contraception [13].

Online educational media. Online or new media are communication media that utilize internet devices [10] Online education can be provided via mobile messages and interactive media to help teenagers get a lot of information and understand reproductive health and contraception to prevent teenage pregnancies [10].

CONCLUSION

Evidence-based programs to prevent teenage pregnancy in developing countries cover local government regulations to prevent teenage pregnancy, insertion of sex education in the school curriculum, parenting classes from monitoring the development and growth of teenagers, evidence-based programs for teenagers, school reproductive health nursing, and educational programs using online media. In practice, the findings of this research are likely to serve as a scientific reference for health practitioners seeking to expand their participation in preventing adolescent pregnancy and maximize government-sponsored prevention initiatives. This study's limitation is the

cross-sectional articles reviewed did not control confounding variables.

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