Interventions for early marriage in low- and middle-income nations: a systematic review

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Abstract

Early marriages result in the emergence of a harmful intergenerational cycle. Various policies and programs have been implemented to address the issue of early marriage at both global and local levels. However, early marriages continue to occur worldwide. The purpose of this systematic review was to analyze interventions in early marriage in an effort to offer different interventions. This systematic review used MeSH-based keywords from Scopus, ScienceDirect, Web of Sciences, and PubMed databases. The PRISMA and The JBI checklists were used as guidelines. Data searches were conducted using Scopus, ScienceDirect, Web of Sciences, and PubMed databases for articles published in the last five years. Fifteen articles mentioned interventions to delay early marriage, such as cash transfers, community-identified programs, mentorship initiatives, youth clubs, youth information centers, and interventions targeting married adolescents. To effectively delay early marriage and improve adolescent well-being, multilevel interventions targeting economic, social, psychological, and health-related factors are needed. Future programs should integrate economic support with educational and SRH services, ensure sustained engagement with communities and families, and include long-term evaluations to assess the impact over time.

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Introduction

An intergenerational cycle of disadvantage is created by early marriage, which is a violation of human rights and has numerous effects on children or adolescents who marry young people as well as on their future children.[1] Any marriage that is consummated before the age of 18 is considered early marriage.[2] Adolescents are not psychologically or physically mature enough to handle the duties of marriage, pregnancy, delivery, and raising children before the age of 18. They have also not been able to accept responsibility for their sexual behavior.[3] One of the Sustainable Development Goals (SDGs) indicators for gender equality, indicator point 5, states that by 2030, "ensure the elimination of all harmful practices, such as child marriage, early marriage, forced marriage, and female circumcision." Early marriage is one of the targets in this indicator.[4] Globally, 29% of young women are married before 18 years of age.[5] Around 1.2 million women in Indonesia marry before the age of 18, according to the prevalence of early marriage, while 61.3 thousand women marry before the age of 15. According to these statistics, in Indonesia, one in nine women between the ages of 20 and 24 was married before turning 18 years old.[6]

Typically, early marriage is seen as a barrier to possibilities in education, the economy, and society, due to poverty and gender imbalance.[7] The prevalence of early marriages is highly correlated with societal culture and values. Early marriage is more likely to result from the effects of poverty, violence, and a lack of community structure.[8] Due to social standards, including the expectation that adolescents should be protected, parents believe that marrying off their children at a young age can protect them from sexual violence, unintended pregnancies, and sexually transmitted diseases.[1] Early marriage is affected by economic variables, including poor family income and unemployment.[9] Early marriage is indicated by a lack of sexual education regarding topics such as contraception, pregnancy, childbirth, and access to sexual health care.[8] In addi-

tion, early marriage is influenced by premarital sexual activity and unintended pregnancies.[10,11] Therefore, it is important to have accurate information on and perceptions of early marriage among adolescents.[12] Early marriage can lead to a wide range of issues that affect not only the individuals involved but also the health of families and society as a whole.[13] Early marriage can result in poor health, high infant mortality rates, and severe household poverty.[1] A significant issue is how early marriage affects health. Early marriage contributes to infant mortality, stunting, and low birth weights. Early marriage has an impact on the loss of a teenager's mobility, unpreparedness for household roles, premature sex, unpreparedness to give birth to children, and domestic violence that ends in divorce. In recent decades, several policies, strategies, and programs have been explored to address the issue of early marriage at the global, regional, and local levels. However, early marriage is still prevalent throughout the world.[2] Several studies have been conducted with a focused on interventions to deal with early marriages and their implications. This systematic review aimed to analyze interventions in early marriage to offer different approaches to problems.

Materials and Methods

Study design

This study was a systematic literature review conducted to address this research question. This research was carried out systematically following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, focusing on qualitative synthesis without performing a meta-analysis of quantitative data (Figure 1).

Search strategy

We searched for secondary data sources in the form of reputable journal articles in four databases: Scopus, ScienceDirect, Web of Sciences, and PubMed. Key words used Medical Subject Headings (MeSH) terms such as ((adolescent) OR (teenager) AND (early marriage) OR (child marriage)) AND (Intervention) OR (methods)).

Eligibility criteria

This systematic review included original research articles published in English between 2018 and 2024 that focused on interventions designed to address early marriage in low- and middle-income nations, as defined by the World Bank at the time of data collection. We used the Population, Intervention, Comparison, Outcome, and Study Design (PICOS) framework to guide our inclusion criteria. Specifically, the population of interest was adolescents affected by early marriage. The included interventions aimed at preventing, delaying, or mitigating the negative consequences of early marriage, encompassing a range of approaches such as educational programs, economic empowerment initiatives, legal reforms, and community-based interventions. While a comparison group wasn't a strict requirement, studies had to present outcomes demonstrating the effects of early marriage or the intervention's impact. Studies solely focused on descriptive epidemiology or conducted in high-income nations were excluded (Table 1).

Study selection

Article selection was examined for keyword suitability, abstract, full text, study type, and article duplication. 5.583 studies were obtained from the databases during the initial search. Duplicates were removed. Screening of titles and abstracts was then performed to evaluate how well the article content matched the keywords in the research topic. These articles were considered relevant for review if they met the inclusion criteria.

Risk of bias

All search results were organized in Mendeley Desktop and reviewed to determine whether they met the inclusion criteria. Results that were identical or irrelevant to the research articles were excluded. The assessment of article quality and risk of bias was conducted independently by researchers using the Joanna Briggs Institute (JBI) critical appraisal tools provided in Table 2.[14-26]

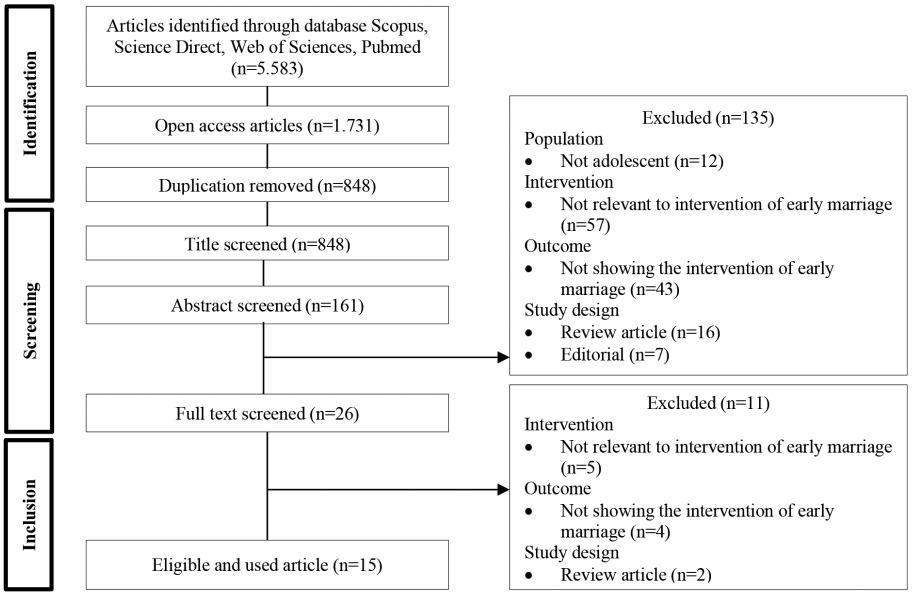

Figure 1. The PRISMA flow diagram

Data extraction

Full-text articles were then read, organized, and explored based on author name, year of publication, country, sample size, Age, QA Score, type of intervention, and duration (*Supplementary Materials, Table 1*).

Results

Based on a search using keywords across four databases (Scopus, Science Direct, Web of Science, and PubMed, 5.583 articles were found. After screening, 1.731 open-access articles were identified. Duplicate articles were removed, resulting in a total of 848 articles based on relevant titles. After further selection based on abstracts, 161 articles were selected. These articles were then matched against the PICOS criteria, and 15 met the desired criteria. Based on the results of the Critical Appraisal using the JBI instrument, 15 selected articles achieved a cumulative score above 50%, indicating the quality and suitability of the articles included in this review. Based on the systematic review, the reviewed articles had the following research characteristics: cross-sectional study (n=1), quasi-experimental study (n=3), qualitative study (n=5), and Randomized Controlled Trial (RCT) (n=6). This systematic review originated from studies conducted in various countries worldwide, and the total number of samples in the systematic review was 2.591. The geographical distribution of the studies was multi-regional, with nine articles from Africa, four from South Asia, and two from the Middle East. The respondents in these studies were adolescents aged 10-24 years.

Discussion

This review identifies various interventions aimed at delaying early marriage and improving adolescent well-being, including cash transfers, community engagement programs, mentorship initiatives, youth clubs, youth information centers, and interventions targeting married adolescents. While these interventions demonstrate positive outcomes, their effectiveness varies based on the sociocultural and economic contexts.

Economic interventions, such as cash transfers and school fee support, have proven effective in enhancing school attendance, delaying marriage, and reducing early pregnancies by reducing girls' financial dependence on men.[14,15,16] In a study by Malhotra *et al.* (2021), economic interventions, particularly cash transfers, had a significant impact on reducing child marriage rates or increasing the age at marriage.[17] These findings align with economic empowerment theories, which suggest that increasing financial autonomy strengthens women's agency and decision-making power.[18] However, these programs alone may not challenge the deeply rooted gender norms that perpetuate early marriage.

Community-based programs, including forums and safe spaces for girls, parental education, and boys' sports groups have addressed the structural and social norms surrounding early marriage.[19,16] Initiatives such as AGEP and GHD have demonstrated shifts in gender attitudes, increased family support for girls' education, and reduced early marriages and pregnancies.[20,21] These find-

Table 1. PICOS framework.

PICOS framework	Inclusion criteria	Exclusion criteria
Population	Adolescent	Not adolescent
Intervention	Consisted of early marriage	Not relevant to intervention of early marriage
Comparation	No comparison	
Outcome	Showing the intervention of early marriage	Not showing the intervention of early marriage
Study design	Original research articles	Review articles

Table 2. Critical appraisal results for included studies using the JBI Critical Appraisal Checklist.

Author	Design	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Total	Category
Mehra *et al.* (2018)[16]	Cross-sectional study	Y	Y	Y	Y	Y	Y	Y	Y	N/A	N/A	N/A	N/A	N/A	8/8	(Good)
Kohli *et al.* (2021)[17]	Quasi-experimental	Y	Y	Y	Y	Y	Y	Y	Y	Y	N/A	N/A	N/A	N/A	9/9	(Good)
Sieverding *et al.* (2022)[18]	Quasi-experimental	Y	Y	Y	Y	Y	Y	N	Y	Y	N/A	N/A	N/A	N/A	8/9	(Good)
Huda *et al.* (2019)[26]	Quasi-experimental	Y	Y	Y	Y	Y	Y	Y	Y	Y	N/A	N/A	N/A	N/A	9/9	(Good)
Banda *et al.* (2019)[15]	Qualitative	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N/A	N/A	N/A	10/10	(Good)
Chirwa-Kambole *et al.* (2020)[21]	Qualitative	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N/A	N/A	N/A	10/10	(Good)
Zulu *et al.* (2022)[22]	Qualitative	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N/A	N/A	N/A	10/10	(Good)
Milimo *et al.* (2021)[23]	Qualitative	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N/A	N/A	N/A	10/10	(Good)
Bankar *et al.* (2018)[25]	Qualitative	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N/A	N/A	N/A	10/10	(Good)
Prakash *et al.* (2019)[14]	RCT	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	12/13	(Good)
Austrian *et al.* (2022)[19]	RCT	Y	Y	N	Y	N	Y	N	Y	Y	Y	Y	Y	Y	10/13	(Good)
Zulaika *et al.* (2019)[20]	RCT	Y	Y	Y	N	N	Y	N	Y	Y	Y	Y	Y	Y	10/13	(Good)
Austrian *et al.* (2020)[24]	RCT	Y	Y	Y	N	N	Y	N	Y	Y	Y	Y	Y	Y	10/13	(Good)
Challa et al (2019)[27]	RCT	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	12/13	(Good)
Gholami *et al.* (2021)[28]	RCT	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	12/13	(Good)

ings support the social norms theory, emphasizing the role of collective community change in modifying behaviors and expectations.[22] Mentorship and youth empowerment interventions also contribute to positive long-term outcomes. Programs incorporating life skills training, financial literacy, and reproductive health education enhanced girls' decision-making, self-efficacy, and ability to negotiate gender roles.[23,24] Sport-based mentorship in particular fostered empowerment and reshaped household expectations.[23] The effectiveness of these approaches aligns with Bandura's social cognitive theory, which highlights how observational learning and self-efficacy influence behavioral change.[25]

Youth clubs and information centers provided peer education and interactive learning, increasing adolescents' knowledge of Sexual and Reproductive Health (SRH) and reducing risky behaviors.[26,27,28] Interactive teaching methods, such as role-playing and group discussions, have proved to be more effective than traditional education, reinforcing the importance of participatory learning models.

Interventions targeting married adolescents, including married adolescent girl clubs, household visits, counseling, improved contraceptive use, delayed childbirth, and promoted gender-equitable decision-making within marriages.[29,30] Programs such as Reaching Married Adolescents (RMA) addressed social norms and increased the demand for modern contraceptive methods through community engagement and counseling.[30] Psychological interventions, such as Functional Emotional Coping Therapy (FECT), further support married adolescents in navigating their sexual and reproductive health.[31] These findings underscore the need for integrated interventions beyond economic and educational support to address the psychological and social dimensions of adolescent well-being.

Conclusions

To effectively delay early marriage and improve adolescent well-being, multi-level interventions are needed targeting economic, social, psychological, and health-related factors. Future programs should integrate economic support with educational and SRH services, ensure sustained engagement with communities and families, and include long-term evaluations to assess the impact over time. Strengthening the quality of family planning services and counseling is crucial for sustaining positive behavioral changes.

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Online supplementary materials
Table 1. Summary of the articles.