



## Early marriage and health risks in children born: Scoping review

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### ARTICLE INFO

#### Article history:

Received 19 October 2022

Accepted 10 January 2023

Published 20 January 2023

#### Keyword:

early marriage  
toddler development in early marriage  
impact of early marriage  
child mental health

### ABSTRACT

Background: Early marriage in adolescents is widely found and it results in a poor risk to the newborn infants they delivered. Yet, scoping review research concerning the health impacts on the children born was not commonly found. Most of the scoping review research merely discussed the impact of adolescents. Purpose: To determine the impacts of early marriage on children's health. Method: The literature study employed scoping review approach by adapting the PRISMA-ScR checklist and using the PEOs framework mentioning "early marriage and readiness to be a parent" "early marriage" "risk factor for early marriage on adolescent reproductive readiness" "reproductive health in children who marry early" "toddler development in early marriage". Five databases were used in this study: Willey, Science Direct, Pubmed, Proquest, and Google Scholar. The data selection was conducted using a flowchart prism and critical appraisal tool of Joanna Briggs Institute (JBI). Result: Based on the search of 486 articles, there were ten articles relevant to the purpose of this study and hence included in scoping review. Three themes were then selected based on the mapping results considering role and health of young mothers, toddlers' condition, environment and economy. Conclusion: Children born to adolescent mothers tend to have poor nutrition and development, such as developmental delay, anemia, and stunting. This is due to both mothers' developing psychology and body, so they are most likely not ready to look after the children and family.



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#### Kata kunci:

early marriage  
toddler development in early marriage  
the impact of early marriage  
child mental health

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DOI: 10.30604/jika.v8iS1.1633

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### ABSTRAK

Latar Belakang: pernikahan dini pada remaja masih banyak dilakukan dan hal ini dapat memberikan risiko buruk pada anak yang dilahirkannya nanti. Penelitian scoping review mengenai dampak kesehatan pada anak yang dilahirkan masih tidak terlalu banyak ditemukan, banyak penelitian scoping review yang ditemukan hanya membahas mengenai dampak pada remaja sendiri bukan terhadap anaknya. Tujuan: untuk mengetahui bagaimana dampak pernikahan dini pada kesehatan anak yang dilahirkan. Metode: studi literatur ini menggunakan pendekatan scoping review yang diadaptasi dengan PRISMA-ScR checklist, menggunakan framework PEO's yaitu "early marriage and readiness to be a parent" "early marriage" "risk factor for early marriage on adolescent reproductive readiness" "reproductive health in children who marry early" "toddler development in early marriage". Terdapat lima database yang digunakan yaitu willey, science direct, pubmed, proquest, google scholar. Kemudian dilakukan seleksi data dilakukan menggunakan prisma flowchart dan critical appraisal menggunakan Joanna Briggs Institute (JBI). Hasil: berdasarkan dari 486 artikel hasil pencarian diperoleh 10 artikel yang relevan dengan tujuan dari penelitian dan dapat dimasukkan dalam scoping review. Didapatkan 3 tema dari hasil pemetaan yaitu peran dan kesehatan ibu remaja, keadaan balita, lingkungan dan ekonomi. Simpulan: Anak yang lahir dari ibu remaja

cenderung memiliki gizi serta perkembangan yang tidak baik seperti terhambatnya perkembangan anak, anemia dan stunting. Hal ini karena baik dari psikologis ibu dan tubuh ibu sedang berkembang sehingga kemungkinan besar ibu belum memiliki kesiapan diri untuk merawat anak dan keluarganya

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## INTRODUCTION

Many adolescents are in early marriage when they are less than 18 years of age. In 2018, the number of women married before 18 years of age was approximately 1.220.900. There are other 11,21% women aged 20-24 years old married before 18. This makes Indonesia become 1 out of 10 countries with the highest early marriage rate globally. The provinces with the highest prevalence are West Sulawesi, Central Sulawesi, and Southeast Sulawesi (Bappenas, 2020).

Specific marital age rates vary in which the women in most countries are not married until the age of 10. Generally, the child marriage rate is gradually increasing until they are 14 years old. Then this number is significantly raising after they are at the age of 15, 16, and 17 (Liang et al., 2021). The regulation on the age of marriage is enacted in Law Number 1 of 1974 on Marriage and was changed to Law Number 16 of 2019.

Further explanation regarding the age of marriage for children is explained in Article 7 Section (1) which reads "marriage is only permitted if the man and woman have reached the age of 19 (nineteen). It continues "However, if there is a deviation from the marital age, the parents of the male/female need to get dispensation from the court on the grounds of being very urgent and then accompanied by sufficient supporting evidence". This is explained further in Article 7 Section (2) (Republik Indonesia, 2019). Nevertheless, the marriage dispensation contained in Article 7 Section (2) which should be used for urgent reasons will instead become an opportunity and loophole to legalize early marriage (M. Rahmawati & Nuraeni, 2021)

Research conducted by Rahmawati et. al., regarding the level of stress in adolescents who have early marriages revealed that some respondents experienced normal stress, mild stress, moderate stress, severe stress, and very severe stress. Half of the respondents are unable to cope with conflicts that occur in their households. Thus, the adolescents who marry at an early age are not psychologically ready to manage a household as it is considered a psychological burden that requires maturity (M. N. Rahmawati et al., 2019). Children in early marriage report that they experienced emotional stress and depression due

to the burden of marital responsibilities. As a result, marriage in adolescence is very vulnerable to psychological pressure (John et al., 2019).

Children in early marriage are also not ready to become parents. The research conducted by Purwandari et. al. found that maternal age is associated with an increased risk of premature birth and impaired intrauterine growth, infant mortality, and malnutrition in children. This is due to the relationship between behavioral, social, and biological factors of the mother. Younger mothers are not behaviorally mature enough to fulfill their baby's needs. (Purwandari et al., 2021)

However, there are still many parents and families who still allow and support their children in the early marriage. This is due to the consideration that early marriage can anticipate sin and free sex behavior that occurs in adolescents causing unwanted pregnancies. Thus, they find the early marriage as a solution (Erwinsyah et al., 2018). In fact, early marriage is influenced by community culture, family support, and probably low family income (Anggraini et al., 2019).

Many studies on early marriage have resulted in various findings, but research and scoping on the impact of early marriage on the health of infants are still not widely found. Therefore, this scoping review was carried out to determine the health of children born to adolescents who had early marriages. The scoping review question is "How is the impact of early marriage on the health of children born?"

## METHODS

### A. Identification of research questions

PEOS (Population, Exposure, Outcome, Study design) is a design that is frequently used in qualitative questions, but it might as well be used to identify questions and develop a search for conducting a scoping review (Bettany Josette et al., 2016). Thus, this scoping review employed PEOS to identify questions.

**Table 1. PEOS Framework**

	<b>P (Population)</b>	<b>E (Exposure)</b>	<b>O (Outcome)</b>	<b>S (Study Design)</b>
-	Adolescents married and pregnant at the age of less than 19	Early marriage	Health impact on children born	All study design
-	Children aged < 5 years			

Based on the above-mentioned PEO'S framework, the research question was "How is the impact of early marriage on the health of children born?"

### B. Article Identification

Tricco et al mentioned that scoping review is aimed to review, interpret results, map concepts, be sources and types of evidence

This scoping review used Prisma-ScR as it has a checklist that can be used to facilitate the preparation of the scoping review, consisting of:

1. *Protocol and Registration*

Prisma – ScR has 22 assessment items contained in the checklist set as a guide in this scoping review (Tricco et al., 2018).

2. *Eligibility criteria*

The exclusion and inclusion criteria used in this scoping review are as follows:

**Table 2. Inclusion and Exclusion Data**

Inclusion	Exclusion
1. Published in 2017-2022	1. Article in the form of review,
2. In English and Indonesian	2. Article in the form of report
3. Article as the result of the research or <i>original research</i>	3. Book
	4. Paid Article

3. *Information sources*

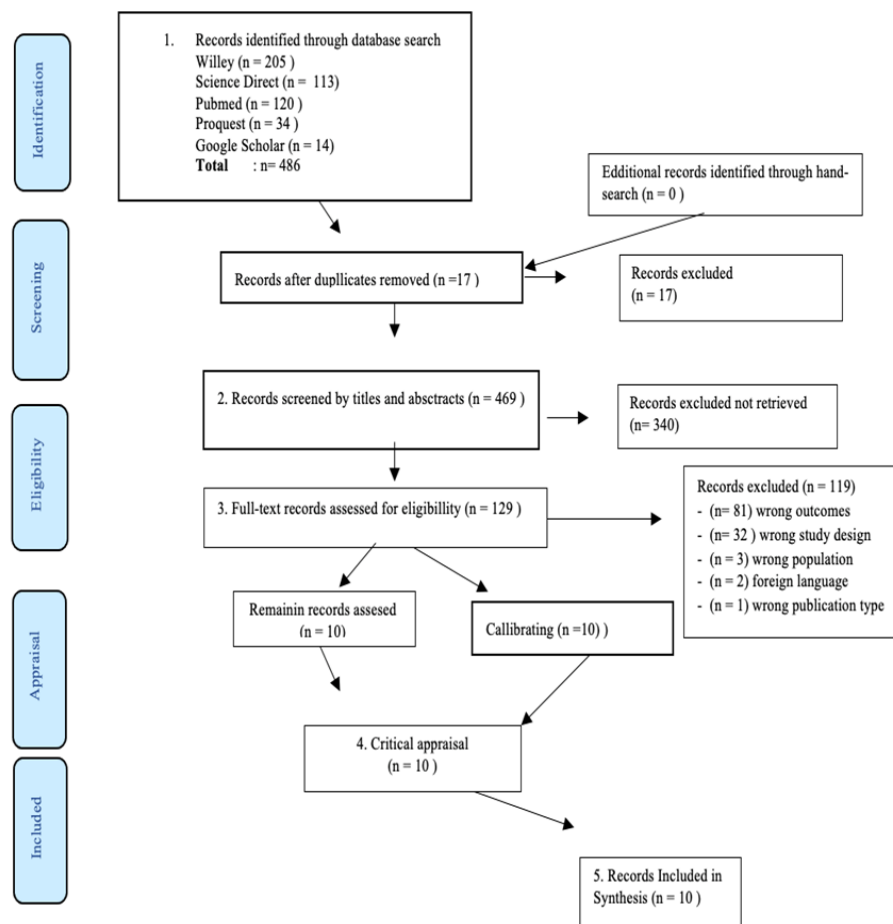
This scoping review used five databases, namely *Willey, Science Direct, Pubmed, Proquest, and Google Scholar.*

4. *Search*

The next step is to find out the keywords to use as it was designed and focused on the framework by determining synonyms through Boolean. The keywords used in this scoping review are “*early marriage and readiness to be a parent*” “*early marriage*” “*risk factor for early marriage on adolescent reproductive readiness*” “*reproductive health in children who marry early*” “*toddler development in early marriage*”.

5. *Selection of sources of evidence*

Prism flowcharts can help provide better results in reporting systematic reviews and meta-analysis to provide the information and relevance of the results needed (Leclercq et al., 2019). Based on a search of five databases namely Willey, Science Direct, Pubmed, Proquest, and Google Scholar, there were 486 articles and 17 articles were excluded because the duplicates were found after reviewed. Moreover, 340 articles were excluded due to its irrelevance, 81 articles were excluded due to discrepancies in the results, and 32 were excluded due to differences. The study design was based on inclusion criteria, so 3 were excluded due to different population coverage, 2 were excluded due to language differences, and 1 was excluded due to different publications. Thus, the final results obtained 10 articles used in the scoping review. The next step was to evaluate the articles and the total results of the article screening are described in PRISMA -ScR Flowchart.



**Figure 1.**  
PRISMA-ScR Flow chart(Tricco et al., 2018)

6. *Data charting process*

**Table 3. Charting Data**

Author(s)	Country	Year	Research Type	Sample	Result
1 Anjorin & Yaya	Africa	2021	Cross - Sectional	17,033	Marriages of the girls range from 40% in southern Africa and 97% in Niger with an average of around 60%. There is an increased risk of anemia in children under five associated with early marriage.
2 Moyazzem Hossain et al	Bangladesh	2022	Cross-Sectional	8321	Child mortality was significantly higher among children whose mothers had early marriage.
3 Wells et al	Nepal	2022	Cross-Sectional	3002	Pregnancy <18 years predicted lower LAZ and <19 years predicted lower WAZ and HCAZ. Early pregnancy and marriage at 10-13 years independently predicted neonatal stunting.
4 Pangaribuan et al	Indonesia	2020	Cross - Sectional	645	There was a correlation between early marriage, stunting toddlers, and early marriage age.
5 Andarini et al	Indonesia	2022	Cross - Sectional	61	Early marriage influenced stunting in toddlers.
6 Sanjaya et al.	Indonesia	2018	Cross - Sectional	67	Early marriage was not associated with child growth, but had the potential to cause developmental delays.
7 Efevbera et al	Afrika	2017	Cross - Sectional	37.558	Off-track for development and being stunted were 25% and 29% higher, respectively, for children born to women who married before age 18.
8 Miller et al.	Nepal	2022	Cross-Sectional	17.974	90% of participants were married <18 years and 58% had their first pregnancy at the age of <18 years. 20% of participants gave birth prematurely.
9 Wulandari et al	Indonesia	2017	Cohort	120	Child development is directly influenced by the mother's marriage age
10 Cameron et al	Indonesia	2022	Cross-sectional	40.800	About 33% of children born to mothers who married early died before the age of 5 years. They were also underweight and stunted.

7. *Data items*

The articles were identified according to the exclusion and inclusion criteria discussing the impact of early marriage on the health of children born.

8. *Critical appraisal of individual sources of evidence*

Critical Appraisal in this scoping review used Joanna Briggs Institute (JBI). After this critical appraisal was carried out on 10 articles, the researcher then made an assessment of the critical appraisal of each article based on the Critical Appraisal carried out using JBI. Of the 9 articles with cross-sectional research type, there are 2 articles that can answer all the criteria of 8 questions, 2 articles that can answer 7 of the 8 criteria questions, and 5 articles that can answer 6 of the 8 questions. In 1 cohort article, it is known that it can answer 8 out of 11 questions.

9. *Synthesis of result*

Based on a search of five databases, namely Willey, Science Direct, Pubmed, Proquest, and Google Scholar. After reviewed, 17 articles were excluded due to the duplication, 340 articles were excluded due to the irrelevance, 81 articles were excluded due to discrepancies in the results, and 32 were excluded due to differences in study design. Based on the inclusion criteria, 3 were excluded due to different population coverage, 2 were excluded due to language differences, 1 was excluded due to different publication

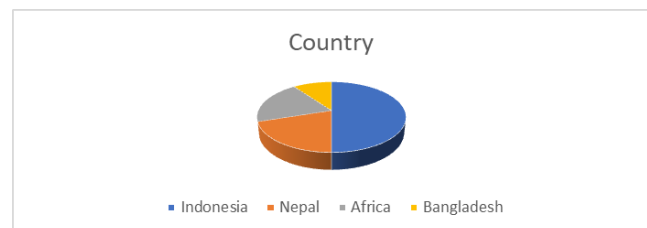
types, and the total results of the screening articles are depicted in the PRISMA Flowchart.

**RESULT**

**A. Characteristics of Study**

**1. Characteristics of Study based on the country**

The results of this scoping review resulted in 10 articles that conducted research in several countries. Five articles were the results of research conducted in Indonesia, two articles conducted in Nepal, two articles conducted in Africa, and 1 article conducted in Bangladesh.



**Figure 2. Characteristic of Article based on the Country**

**2. Characteristics based on the Study Type**

The results of 10 articles which were obtained and selected based on quality were extracted by classifying

several points from the articles. As many as 9 articles obtained used a Cross-Sectional study and 1 article used a cohort.

### 3. Characteristics based on the Study Type

Every article that has been obtained employed Critical Appraisal using the Joanna Briggs Institute (JBI) method. There were 2 out of 9 articles with Cross-Sectional research types that can answer all the criteria of 8 questions. There were 2 articles that can answer 7 out of 8 question criteria

and 5 articles that can answer 6 out of 8 questions. Meanwhile, 1 cohort article can answer 8 out of 11 questions.

### B. THEME

Based on the articles selected, there are 3 categories of themes, namely the role and health of adolescent mothers, the condition of toddler under five, as well as the environment and economy.

**Table 4. Analysis and Mapping of Research Article Themes**

Theme	Sub-Theme	Article
Role and Health of Adolescent Mothers	Mother's marriage age and first pregnancy	1,2,3,4,5,6,7,8,9,10
	Mother's education	7,9, 10
	Exclusive breastfeeding	5
	Premature birth, Low Birth Weight (LBW) and mortality	2, 5,8, 10
Condition of Toddler	Infection in children	5
	Children's development	6,7,9,10
	Anemia in children	1
	Stunting	3,4,7,
Environment and Economy	Family Economy	1,5, 9, 10
	Decent place to stay	1, 7

## DISCUSSION

### 1. Role and Health of Adolescent Mothers

Adolescent marriage and maternal age at the first pregnancy significantly affect the health of toddlers (1,2,3,4,5,6,7,8,9,10). It is in accordance with the independence of socioeconomic status, maternal height, duration of breastfeeding, and parity (24). In addition, adolescent marriage is also related to nutritional problems, where adolescent mothers who are pregnant and are still in their infancy must share their nutritional intake with the fetus they contain, so that it can cause malnutrition for both mother and fetus hence affecting their health (Maulinda et al., 2021).

Girls usually do not have their own freedom both in education and in seeking job (7,9,10), because there are still many assumptions that they have to work at home and do not need to help in the family economy. Thus, they are considered not to need higher education and parents prefer to immediately marry off their daughters (Anggraini et al., 2019). In fact, education for girls is closely related to the health of children who are later born, because education affects how much knowledge mothers have about health and nutrition for their children (Kumar et al., 2021).

There is wide gap between mothers with higher education and those with lower education, especially at an age when children's health needs are most complex or sensitive (Prickett & Augustine, 2016). In fact, increasing maternal education can reduce the likelihood of children being born with low birth weight, while improving mother's education can increase likelihood of healthy children accordingly (28).

Many adolescents are not yet mature and capable enough to do housework or even care for their children (Sinclair et al., 2012). This causes many teenage mothers not to exclusively breastfeed their children (5). The percentage of child marriage <18 years who initiate early breastfeeding was only 18.83% and mothers who marry at a younger age tend not to breastfeed their babies exclusively, but the

father's age at marriage is not associated with exclusive breastfeeding (Bhanderi et al., 2019). Cessation of exclusive breastfeeding at the age of 2-4 months will be associated with underweight and exclusive breastfeeding for up to 6 months which is very beneficial in protecting the baby from infection and to meet the child's nutrition needs sufficiently (Khan & Islam, 2017).

### 2. Condition of Toddlers

Early marriage and pregnancy in adolescence can increase the risk of children being born prematurely (2,5,8,10) stunted intrauterine growth restriction and malnutrition in children. This is related to behavioral, social and biological factors of adolescent mothers (Purwandari et al., 2021). Reproductive organs in adolescents are still in their developing period and may not be ready to get pregnant; thus it can increase the possibility of newborn with Low Body Weight (LBW) (Maulinda et al., 2021).

Biological maturation and social mechanisms play a major role in explaining why children of young mothers have poor health (Finlay et al., 2011). Then, the low awareness and poor utilization of health services among mothers of early marriage increase the risk of newborn with LBW (Azinar et al., 2022). Moreover, the percentage of married girls aged < 18 years who gave birth at health facilities was only 22.13% (BPS et al., 2020).

The development of toddlers in early marriage can also experience obstacles (6,7,9,10). The highest risk of developmental vulnerability is in children born to the youngest mothers (Falster et al., 2018). This is because the children's development of the complex characteristics is an essential factor in the success of mothers in raising children, and it is possible that adolescents still have difficulty adapting in long-term child development.

Inaccurate knowledge about child development can influence maternal parenting practices, which can lead to feelings of disconnection, frustration, and disappointment (Ryan-Krause et al., 2009). Children born to mothers who are too young have a greater chance of experiencing anemia (1),

This is because many young mothers give birth prematurely and are born with low birth weight, which then results in children being born very susceptible to infection and lack of nutrition that can increase the risk anemia in children (Tesema et al., 2021).

In addition, the level of stunting risk is much greater for adolescent mothers (3,4,7), because they are less able to guarantee their children get adequate food intake, access to safe clean water, and good sanitation conditions. Adolescent mothers are not psychologically ready to breastfeed their newborn after giving birth or they do not have good economic resources to meet the needs of their children (Wemakor et al., 2018). Meanwhile, malnutrition in children <5 years old can cause chronic malnutrition, malnutrition, and acute malnutrition which leads to stunting (Athiba & Lukaw, 2018).

### 3. Environment and Economy

There are still many adolescent girls who are considered a burden in their family and are finally married off to reduce household expenses and to protect them (Adedokun et al., 2016). As a result, they have to drop out of school, even receive no education at all, and earn little income (Hamilton, 2012), which causes the economy in the families of teenagers with early marriage to become unstable (1,5,9,10).

This condition eventually led to husband's dominant control in limiting everything, namely seeking health care, family planning services, earning income independently, becoming paid labor; therefore, they only financially depended on their husband's income (Adedokun et al., 2016). Both women with early marriage due to out-of-wedlock pregnancy or those who were not have the same dilemma in dealing with the economic conditions of their families (Alfiana et al., 2022), especially if their economy is not yet stable. Parents who work and are financially stable can improve the care and quality of their children's environment, such as nutrition, health, protection of the environment, and learning opportunities. (Heinrich J Carolyn, 2014), otherwise, negative things can happen when adolescents are in early marriage but do not have good economy.

There is a perception by young mothers about differences in parenting, one of which is about the residence<sup>(1,7)</sup> between children in rural and urban areas. Parenting in the rural areas was deemed unfriendly which triggers some young families to move to the city. However, in reality, there are still many poor young mothers in urban areas who feel disadvantaged due to the difficulty to access food, to get clean water services and, and to have a hygienic environment. With these factors, many adolescent mothers feel that they will not be able to provide healthy food and care for their children (Hackett et al., 2015).

### CONCLUSION

This scoping review aims to find out how the impact of early marriage on the health of children born. Based on the results of the scoping review conducted, it is concluded that there are many negative impacts resulting from early marriage, from both adolescents and toddlers. Children born to adolescent mothers tend to have poor nutrition and development such as stunted child development, anemia, and stunting. This is because both mother's psychology and body are developing, so it is likely that the mother does not yet have the readiness to take care of her child and family.

### RECOMMENDATION AND SUGGESTION

Marriage in adolescents is still widely done to help the family economy. In addition, environmental factors also support early marriage. However, the practice of early marriage is ultimately detrimental to the children who are born because it can have a bad impact on their development. Therefore, the practice of early marriage should be stopped by providing education about the negative impact of early marriage on both adolescents and their children. Afterward, clearer regulations and stricter sanctions should be upheld on the parties who carry out the early marriage.

### Funding

Any party did not fund this scoping review study

### Acknowledgment

The author is very grateful to the Faculty of Health Sciences and Universitas Aisyiyah Yogyakarta for facilitating this study, so that I can conduct a scoping review regarding early marriage and health risks in children born.

### Conflict of Interest Statement

The author has no conflict of interest in the review

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