



## EFFECTIVENESS OF PEER EDUCATION IN DECREASING ADOLESCENT PREGNANCY: A LITERATURE REVIEW

### *Efektivitas Pendidikan Teman Sebaya dalam Menurunkan Kehamilan Remaja: Studi Literatur*

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#### Abstrak

**Latar Belakang:** Saat ini jumlah remaja yang melakukan hubungan seksual meningkat dan menimbulkan risiko yang tinggi terhadap implikasi medis, psikologis, dan sosial. Perilaku ini meningkatkan jumlah kehamilan remaja. Pendidikan seksual dan konseling di banyak negara disampaikan oleh tenaga kesehatan. Indonesia memiliki beberapa program pendidikan seksual yang dilakukan oleh pendidik sebaya tetapi keberhasilannya dalam mengurangi kehamilan remaja masih belum diketahui.

**Tujuan:** Penelitian ini bertujuan untuk menganalisis efektivitas program pendidikan kesehatan reproduksi sebaya dalam menurunkan kehamilan tidak direncanakan pada remaja.

**Metode:** Telaah pustaka integratif ini didasarkan pada 3 basis data yaitu Google Scholar, Pubmed dan SAGE Journal. Kriteria inklusi adalah artikel yang diterbitkan pada tahun 2012-2018, ditulis dalam bahasa Inggris, dan seluruh artikel tersedia dan dapat diakses. Artikel yang disertakan hanya artikel asli dan yang memiliki desain eksperimental. Kualitas artikel yang dipilih ditentukan dengan menggunakan alat penilaian *Olsen-Baisch Scoring*.

**Hasil:** Pendidikan sebaya bermanfaat dalam menumbuhkan dukungan sosial dan rasa kepemilikan pada remaja. Konteksnya tidak hanya tentang kehamilan yang tidak direncanakan tetapi juga IMS dan HIV; pengambilan keputusan yang bertanggung jawab; dan identifikasi citra tubuh. Pendidik sebaya dapat menjadi panutan dan peluang yang lebih besar untuk melawan risiko kehamilan remaja.

**Kesimpulan:** Mencegah kehamilan remaja dapat menyelamatkan generasi penerus dan meningkatkan kesehatan remaja. Pendidik sebaya sebagai bagian dari penyedia layanan kesehatan menghubungkan remaja dengan kebutuhan kesehatan reproduksinya. Pendekatan ini akan menjadi strategi menguntungkan yang dipertimbangkan oleh penyedia layanan kesehatan untuk melindungi remaja.

**Kata kunci:** remaja, pendidik sebaya, kehamilan, pendidikan seksual

#### Abstract

**Background:** Currently, the number of adolescents who have sexual intercourse is increasing and those make a higher risk of medical, psychological, and social implications. This behaviour is obviously leading to an increase the number of adolescence pregnancy. Sex education and counselling in many countries is delivered by health care professionals. In Indonesia, there are some sex education programs delivered by peer educators but their success in reducing adolescence pregnancy is unknown.

**Objective:** The aim of this study was to analyze the effectiveness of a peer reproductive health education program in decreasing unplanned pregnancy in adolescents.

**Method:** This integrative literature review was based on 3 databases which included Google Scholar, Pubmed and SAGE Journal. The inclusion criteria were articles published within the 2012–2018-year range, written in English, and the entire article was available and accessible. Only original articles with experimental design will be included. The quality of the selected articles was defined by using the *Olsen-Baisch Scoring* critical appraisal tool for integrative review.

**Result:** Peer education builds social support and sense of belonging. The content is not only about unplanned pregnancy but also STI and HIV; responsible decision making; and body image identification. Peer educator can be the role model and have greater opportunities to counter the risk of adolescent pregnancy.

**Conclusion:** Preventing adolescent pregnancy can save the next generation and improve adolescent health. Peer educator as part of health provider connect adolescents with their reproductive health needs. This approach would be beneficial strategy consider by health provider to protect adolescents.

**Keywords:** adolescent, peer educator, pregnancy, sex education

## INTRODUCTION

Adolescent sexual dan reproductive health become the global issues since the increasing of unintended pregnancy. The implication related to adolescent mortality is due to early childbirth, and limited or no access to reproductive health center. It may be explained by the fact that developed and developing countries are still fighting with the challenge of adolescent pregnancy. Unsafe abortions among adolescents is 3.2 million each year with 19% girl age under 18 have been experiencing pregnancy in developing countries.<sup>1</sup> Despite the sexual and reproductive health have been socialized and acknowledged in the society, many adolescents are still facing unintended pregnancy and high risk sexual activity, which cause deaths among young people ages 15–19 years.<sup>2</sup> The time of transition in physical, psychological, and social milestones make adolescence tend to try new things, including an interest in having partner. The data showed that the younger sexual intercourse occur the higher risk adolescence face sexually transmitted infection and unwanted pregnancy. This implies that developmental stage in adolescence can contribute to prevent negative sexual health outcomes.<sup>3</sup> Previous research reported that an wide understanding of the predictors of age first sexual intercourse knowledge could enable the intervention and efforts in delaying sexual initiation and preventing other sexual behaviors that increase the risk of unwanted pregnancies among adolescents.<sup>4</sup> Young adolescents tend to believe their friends instead of parents due to many changes through adolescence development.

According to the results of Indonesian Demographic and Health Survey (SDKI) 2017, it was found that adolescents mostly chose peers to discuss reproductive health, in which 62% of girls and 51% of boys discussing about their reproductive health experiences with

their friends.<sup>5</sup> In addition, the information about reproductive health given by peers is not necessarily right. The quality of the information and the ability of peers to give the correct information will give access to the youth about reproductive health. Thus, peer educators are needed to meet adolescence needs and to guarantee the truth of the information. Peer educators can provide access to not only information, but also to education, counselling, services about family planning for teenagers, and other supporting activities. However, in the past peer education program has not been well-accessed by most of adolescents. The percentage of adolescents who know that a girl can get pregnant at the first time of sexual intercourse was only 44.7% and the number of female adolescents aged 15–19 who were pregnant with their first child increased (6.4% in 2017 to 7.1% in 2018).<sup>6</sup> The previous data showed that the benefit of peer educator were not fully accessed by adolescents. In Indonesia sexual reproductive education program has been initiated by some Non-Government Organization (NGOs) and under government agencies, such as *Badan Kependudukan dan Keluarga Berencana Nasional* (BKKBN). Therefore, this integrative review aimed to analyze the effectiveness of peer education program in decreasing unplanned pregnancy by exploring added value of the program that has been developed.

## METHODS

This literature review aims to explore the effectiveness of youth empowerment as peer educators in the prevention of early pregnancy among adolescent. This literature review study used the 5-step integrative review method.<sup>7</sup> Integrative review provide a wider information regarding the focused topic that being studied by considering some research designs. The first stage is problem formulation.

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The research problem in this study used the population, intervention, comparison, and outcome (PICO) approach. The population of this study was female adolescents aged 10-24 years. The intervention or issue of interest in this study was peer empowerment as a reproductive health educator. In the context of this study, the comparator was non interventional group. The outcome of the study was pregnancy prevention. The keyword used in search strategy was “adolescent OR teen AND peer AND prevention AND pregnancy”. The data inclusion criteria were articles published in English ranging between 2012 and 2018. The exclusion criteria applied if they were not included in the experimental design and the full text cannot be accessed. The search engines used were Google Scholar, SAGE Journal and Pubmed. This data

collection process was done in January 2018 in which the researchers were allowed to collect the recent 5 years publication. For the eligibility process, each author did critical appraisal independently before gathered it as final result. If there was disagreement, both authors would discuss for the solution or find the third senior expert for the decision. During data collection and extraction, disagreement has been fixed by two authors. Furthermore, this study used critical appraisal tool using Olsen-Baisch’s 4 criterias consisting of: type of study, sample, analysis, and data collection method. Data extraction was summarized in a table summary that focused on the target population and technical education carried out by the peer (Figure 1). Content synthesis was carried out qualitatively to review the research objectives.

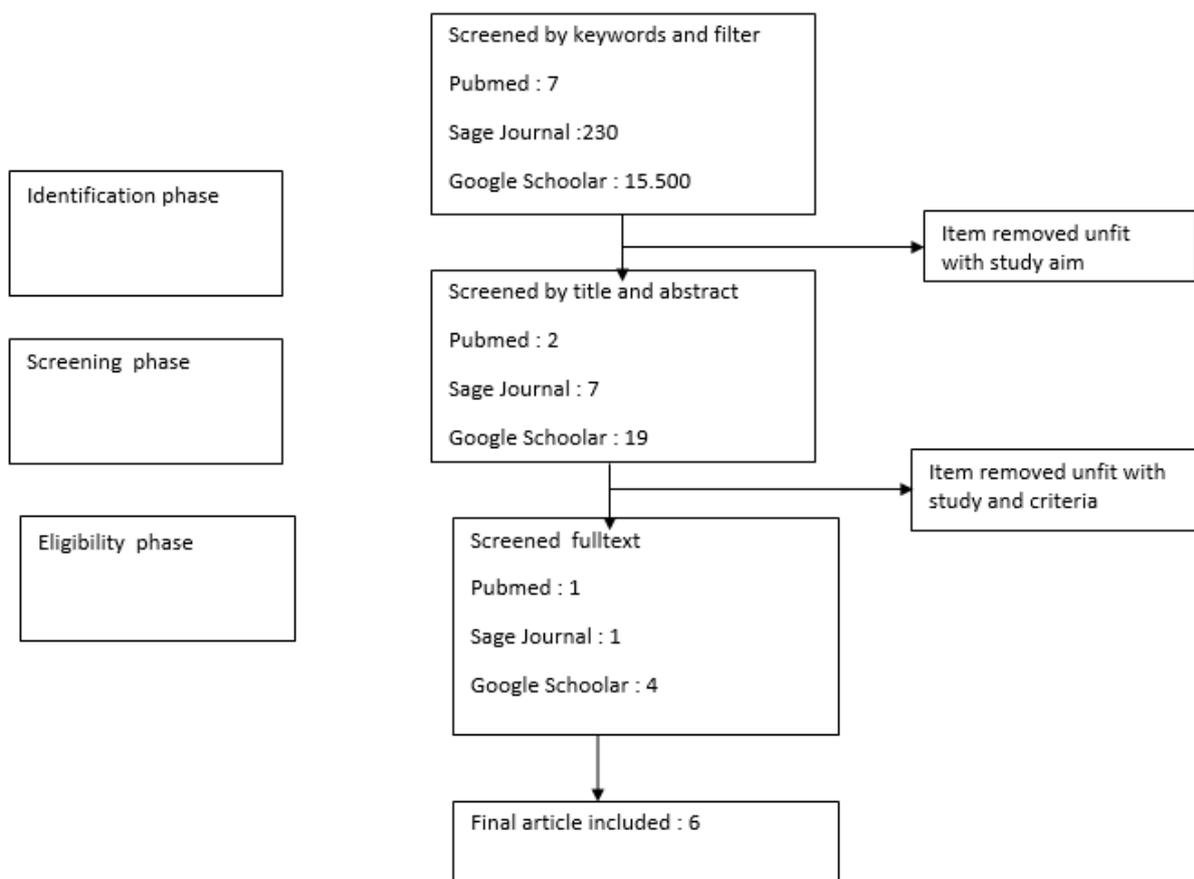


Figure 1. Article selection process scheme

**RESULT**

The combined search engines found 15,737 articles, in which 28 articles screened for further assessment. Six of the 28 articles met all the inclusion criteria and were included in the review. The details of data collection and

the score for critical appraisal using Olsen-Baisch's was shown in Table 1. Peer education program applied in the school to help students find access to sexual reproductive health informations and services easily as shown in Table 2.

**Tabel 1. Critical appraisal result**

Author	Study Type	Sampling	Data Collection Method	Analysis	Total Score
Jenning et.al.2014	6	2	1	3	12
LeCroy et.al. 2018	6	3	1	3	13
Calvert et.al. 2018	6	3	1	3	13
Bonell et.al. 2013	6	3	1	3	13
Harrison et.al. 2016	6	2	1	3	12
Constantine et.al. 2015	6	3	1	3	13

\*Note Critical Appraisal Olsen-Baisch

- Study type: 3 qualitative study, 4 quantitative Study, 5 mixed method, 6 experimental study
- Sampling: 0 unexplained, 1 consecutive sampling, 2 purposive or matching sampling, 3 random sampling
- Data Collection: 0 unexplained, 1 explained in details
- Analysis: 1 narrative, 2 descriptive, 3 inferential

**Tabel 2. Content summary**

Title	Author	Study design	Sample	Intervention	Outcome
Effects of a school-based sexuality education program on peer educators: the Teen PEP model	Jenning et al (2014)	Quasi experimental study with 2 groups. Both groups received the teen Prevention Educational Program (PEP).	Population of study included 5 high school in New Jersey. In total 244 participants.	The whole program consists of 4 phase: a year long course, adult trainer facilitator, peer educator 3 days over night retreat, and workshop held by peer educator for younger student.	Teen PEP peer educators (versus comparison students) reported significantly greater opportunities to practice skills (b 0.72; 95% CI 0.34, 1.09; P-value¼ 0.01) and higher intentions (b 0.21; 95% CI 0.01, 0.41; P-value¼ 0.04)

Title	Author	Study design	Sample	Intervention	Outcome
Go Grrrls: A Randomized Controlled Trial of a Gender-Specific Intervention to Reduce Sexual Risk Factors in Middle School Females	LeCroy et.al. 2018	Quasi experimental study with 2 groups. Both groups received a curriculum based as intervention to reduce sexual risk in female.	There were 854 adolescents enrolled in this study. Allocated to treatment 406 and control 395. Sample which completed the baseline in treatment group only 365 and in control group only 361.	The program component consists of developmental issues such as gender role identification, body image, self-acceptance, sexuality, STI/HIV education, responsible decision making (skills training), and planning for the future.	Results of the treatment versus comparison group t- tests indicated that there was a significant difference in post-test scores on the intentions to reduce sexual risk behaviors scale between treatment (M = 3.81) and comparison groups (M = 3.52; t = 3.44; p = .001).
Risk Factors for Unplanned Pregnancy among Young Women in Tanzania	Calvert et.al. (2013)	Quasi experimental study with 2 groups. One group get intervention and the other no intervention.	Sample was conducted in 20 rural communities in the Mwanza region of Tanzania, near Lake Victoria.	The intervention included a participatory, teacher-led, peer-assisted, in-school programme, aiming to reduce the incidence of HIV, STIs and unplanned pregnancies.	The prevalence of reported unplanned pregnancy amongst all women increased with age, from 21.3% of all women aged <21 years to 33.8% amongst women aged 25 years or over.
Randomized Controlled Trial of "Teens and Toddlers": A Teenage Pregnancy Prevention Intervention combining Youth Development and Voluntary Service in a Nursery	Bonell et.al. (2013)	Randomized Controlled Trial study with matched-pair individual-allocation randomized trial.	449 girls allocated to the intervention or control group (the latter continuing with usual education in school).	The participant plays with and supports a child, typically under the age of 5 and identified by nursery staff as potentially benefiting from special attention, for about 90 min per session.	The outcomes: low self-esteem; low sexual health knowledge; and difficulty discussing the contraceptive pill. At all three study waves, low self-esteem was associated with sexual experience (p <0.001).

Title	Author	Study design	Sample	Intervention	Outcome
Gender-Focused HIV and Pregnancy Prevention for School-Going Adolescents: The Mpondombili Pilot Intervention in KwaZulu-Natal, South Africa	Harrison et.al. (2016)	A quasi-experimental design was employed for this pilot study.	The study site was an administrative sub-district of Umkhanyakud e District in rural northern KwaZulu-Natal province. All students aged 14–17 years in grades 8–10 was eligible for study participation.	The Mpondombili intervention curriculum, written in English and isiZulu, included 15 sessions in three content areas: (1) gender-related attitudes and social norms, (2) self-efficacy, communication and negotiation skills, and (3) knowledge, attitudes and behaviors for HIV/AIDS and pregnancy prevention.	There was a greater increase among intervention vs. comparison school youth in self-efficacy for unsafe sex refusal between the two time periods (OR = 1.61; 95% CI = 1.01, 2.57); however, the association was not significant among either girls or boys separately.
Short-term Effects of a Rights-Based Sexuality Education Curriculum for High-School Students: a Cluster-Randomized Trial	Constantine et.al. (2015)	A cluster-randomized trial was conducted with ninth-grade students at 10 high schools in Los Angeles.	Surveys were completed by 1,750 students (N = 934 intervention, N = 816 control) at pretest and immediate post-test.	The Sexuality Education Initiative (SEI) was developed by Planned Parenthood Los Angeles (PPLA) with the goal of improving the sexual and reproductive health of low-income, primarily Hispanic and African American youth in Los Angeles high schools.	Results indicated that students in the SEI curriculum group showed larger increases in scores from pre-test to post-test than students in the control curriculum group, and that this SEI curriculum group effect was statistically significant for seven of the nine outcomes measures

Selected articles have been published in several journals. There were four articles from Google Scholar, one article from SAGE Journal, and one article from Pubmed. The study design of three research articles were quasi-experimental; one article performed cluster-randomized trial design, and one article used randomized controlled trial. Variation of peer education program were designated to encounter unintended adolescents' pregnancy and sexually transmitted infections (STIs)

including HIV. Peer education program was developed for high school students and it took a combination both senior and junior students. The implementation by peer educators mediates the barriers among adolescents who has similar ages so adolescents can implement healthy sexual reproductive behavior and the ability of making responsible decision, as well as prevent unplanned adolescents' pregnancy.

The results discovered that peer education program in all articles which has been reviewed were schoolbased. The age of the participants ranged 14-17 years old and had not married. Sex education delivered by peer educators becomes beneficial because it is integrated in the curriculum. Some factors increased adolescent pregnancy such as low self-esteem, low sexual health knowledge, and difficulty in discussing reproductive health problems. Higher risk found in adolescent girls who had their first pregnancy and had no spacing to the next pregnancy since the immaturity of the reproductive organ can cause medical problems and increasing maternal neonatal mortality and morbidity. Peer educators can be the role model who have greater opportunities to counter the risk of adolescent pregnancy. This content of peer education program has been reported to be effective in reducing adolescent pregnancy. Selected articles studied peer education program with variative contents which were theoretical and practical. The program shared about sexual reproductive health information, STIs, self efficacy, and skills in decision making. The implementation of peer education program assisted behaviour, knowledge, and attitude related to sexual health, in which was helpful in decreasing adolescent pregnancy.

## DISCUSSION

Based on the finding of this research, peer approach has a significant impact in reproductive health education in preventing unwated pregnancy among adolescents. There are several theories that influence the peer approach in health education such as social learning theory, the theory reasoned action, the difussion and innovation theory, the theory of participatory education and the social inoculation theory.<sup>8</sup> Based on social learning theory, peers are a role model that influences other behaviors. Meanwhile the perception of peer education might change negative or positive behavior of the significant other as belived social norms stated by the theory of reasoned action. Theory of discussion and innovation highlighted the role of peer leader as a new information that can infuse the behavioural change among the population. The social inoculation theory emphasized the role

of peer education to take part in preventing bad behavior adoption due to social pressure.

Based on a qualitative study, the peer education program reveals a spesific benefit for a reliable sexual health promotion in school.<sup>9</sup> This finding explored the ninth grade student in four school in Norh Carolina responding after receiving peer education session. They felt very much helped more than 65% in practicing self control and making decision, caring after graduating, feeling of possession, knowing when to search for a clinic/doctor, and being exposed by birth control and HIV/STD prevention. Specific impact that beneficial for the student is practicing comprehensive negotiation and refusal skill of sexual activity in term of "*how to say No or just walk away*" and being exposed to familiar information of birth control using condoms or pill and other contraception.

With making the evidence-based practicum there was a recommendation for implementing adolescent pregnancy prevention in community approach. In Portugal, biological, social, cultural, and political predicts the age at first sexual intercourse (AFSI) among 899 respondents.<sup>4</sup> There were multicomponent need to be prepared for the teens pregnancy programe such as educating the stakeholders, enhancing access to youth friendly clinics, and advocating the community about the risk of pregnancy among the youth population.<sup>10</sup> The implementation of sexual reproductive health education by peer educator in community found that pregnancy prevention is higher with better sexual health education. Peer educators are prepared and trained, so that they can deliver correct information. Mediation features like self-efficacy and skills are needed from a peer educator. The community help teenagers not only with knowledge and skills, but also to avoid unplanned pregnancy and increase the aspiration for the future.<sup>11</sup> After-school peer education programs for young population require a gender-specific approach to reducing sexual risk reduction.

Gender-specific community-based programs have succeeded in increasing the empowerment of young women. In addition,

programs related to gender roles and peer influence have shown that a more supportive social environment can increase solidarity and the importance of pregnancy prevention.<sup>12</sup> Recently, gender specific approach also applied in school based on peer education program. The implementation is adopted and integrated in the peer educator to socialize about adolescence development and pregnancy prevention. Social environment strategies can help to disrupt gender inequalities among young people and link to protect each other from unintended pregnancy.<sup>13</sup> Peer educators follow preparatory and training instructions and then after being selected the program, they applied in the classroom. School-based peer education focuses on team building, group development, communication and active listening skills, and basic sexual health information. In addition, peer educator leader-based programs in schools promote a better understanding of sexual health information and the importance of a healthy sexual future for adolescents.<sup>14</sup> Other programs implemented on a school-based not only focus on the risk, but also aim to prevent teenage pregnancy by emphasizing youth's potential. Interventions mediated by peer educators reveal that low sexual health knowledge was associated with low self-esteem and a higher risk of unplanned pregnancy and other adverse outcomes.<sup>15</sup> The influence of sexual health education with peers as mediators in schools requires a specific curriculum to legalize its implementation. Class curriculum data show a positive impact on psychosocial for basic sexual health education. Long-terms consistent pattern of sex and sexuality education can help adolescents prevent unwanted pregnancy and plan better future families.<sup>16</sup>

In Indonesia, the government through the Youth Resilience Mentorship Program in the Population, Family Planning and Family Development Program, target the youth that are Indonesian citizens, both male and female, age 10 to 24 years, not married, including adolescents with special needs.<sup>17</sup> The program itself is established under the organization named Youth Information and Counseling Center that based on senior high school and universities. This organization used peers as mediator and facilitator to empower each other due to adolescence development. The outcome

of peers approach is Youth Generation Planning or in Indonesia it is called *GenRe/Generasi Berencana*.<sup>18</sup> *GenRe* are adolescents who have better planning in preparing and passing the transitions of teenage life by doing healthy life style, continuing education, taking career, doing good in the community, and building a quality family. According to the goals of transitions lives, adolescence need to avoid premarital sex, early marriage, and misused drugs.<sup>19</sup> Related to the risk of adolescents with sexual health issues, it links to the need for prevention of pregnancy. The peers in *GenRe* need to share the basic knowledge about sexual reproductive health education so that that it can reduce unwanted pregnancies and other social support systems for adolescents.<sup>20</sup>

However, there is limitation with peer group implementation, in which the program does not have classroom curriculum in every school. The challenges are the peers need to have a commitment for themselves to be a role model for other adolescents.<sup>21</sup> A role model can provide not only knowledge, but also skills in care and coaching of adolescents, in which can understand and communicate effectively with adolescents. The peer group approach still needs to be improved to find friendly peers who can encourage other adolescents to believe that the future needs to be prepared and have a better plan for making a family. The next generation will lead by the adolescents this day and it is crucial to build strong connection with peers to ensure the adolescence pass the transition of lives. Moreover, the adolescents have the peers at school and their parents at home who can help the adolescents to get better sexual reproductive health.

The significance of peer for adolescents' sexual behaviors is not surprising, given key characteristics of this formative period. For most young people, the progress of puberty and the sexual desire that accompanies it occurs during a formative period that is also characterized by other forms of personality enhancement, a growing dependence on peers for passionate encouragement and recognition, and a strong interest in engaging in behaviors which will increase the fame among them.<sup>22</sup> Supporting evidence recommends that young

people may be more likely to change their attitudes and behaviors, if they accept that couriers, such as a peer educator, face comparable problems and burdens. Sexual and reproductive health module that address gender and power are more likely to lead to diminishments in STIs and diminishments in unintended pregnancies among youths. To create measures of youth welfare outcomes, it is necessary to provide scholastic and financial gaps, space to create positive adult and peer systems, and requires coordination over formative divisions. The current era of youth would be the most valuable resource in the world the world's most noteworthy resource.

In addition, the impact of peers can have multi-directional and positive results. Positive peer weight can be a highly-effective way of impacting behavioral alter. Peers are regularly the primary to take note when a companion is having challenges; they have validity and understanding of the weights confronting youths, as compared to grown-up experts. This understanding upgrade peers' capacity to lock in the target bunch in a talk for purposes of changing behavior, transmitting data with respect to pro-social abilities, decision-making, and self-efficacy. It also empowers peers to be compelling part models of craved behaviors.<sup>23</sup>

*GenRe* as one of the peer education programs in Indonesia need to increase coaching, monitoring and tiering the operational evaluation.<sup>24</sup> The content that delivered by peer educators in *GenRe* should be socialized into the community. Adolescents who do not have chance to go to school also need to understand the matter of sexual reproductive health information and build commitment in decreasing adolescents' pregnancy. Moreover, Indonesia has enormous traditional community in every province in which the adolescents are part of it. It should be empowered and developed to increase the awareness of sexual reproductive health issues and reducing unintended adolescents' pregnancy. Peer education program can be improved by continuing the integration in school curriculum, followed by coaching and mentoring by the government.

## CONCLUSION

In conclusion, adolescence pregnancy can be reduced by peer education program. Adolescent's pregnancy associated with numerous problems such as lack of education, adverse medical outcomes, mental health or depression, and particularly social exclusion. The presence of peer educator plays pivotal role to help health providers in providing access to sexual reproductive health closely to adolescents. The collaboration between healthcare and peer educator, especially in schools should be integrated and incorporated in terms of sexual health, intentionally at a young age. A better sexual reproductive health education is needed to prevent unwanted pregnancy in adolescents. Preparing family life for adolescents is crucial since it is a reflection of the quality of next generation.

## RECOMMENDATION

This study uncovers the effectiveness of the presence of peer educator to adolescence sexual reproductive health. The quality of the information and the ability of peer educators will help adolescents to have a better understanding about adolescence development stage. This review still needs to be improved with collaboration research related to reproductive health issues, economic, and social views. Eventhough this study focused on the evaluation of peer educator programs; the process of the peer educator application systems also important. Intervention and motivation can help determine the appropriate role of peer educators. Moreover, a field study is needed to identify the actual teenagers' views about sexual reproductive health, ways of preventing unintended pregnancy and preparing an ideal future family. As the health provider, we should expand this existing strategy not only in school setting but also in community setting.

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