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Peer Education Improve Knowledge and Attitude About Sexual Behavior in Adolescents: A Literature Review

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ABSTRACT Adolescents are included in the high-risk age group. Increased free sex behavior in adolescents has an impact on sexual and reproductive health problems. This phenomenon is supported by the increasing number of sexually transmitted diseases in adolescents. Several programs and policies have been adopted to improve adolescent reproductive health through coaching and counseling. Adolescents have confidence in their peers so peer education is an alternative intervention in increasing awareness of reproductive health. This study aims to comprehensively analyze research articles that discuss the effectiveness of peer education on knowledge and attitudes about sexual behavior in adolescents. Electronic databases such as Google Scholar, Science Direct, PubMed (including Medline), Web of Science, Scientific Information Database, and Scopus were used to conduct this literature review. Articles published between 2015 and 2020 were retrieved and evaluated in terms of abstract and full-text. Finally, 18 articles were chosen based on the inclusion criteria. Married adolescent respondents and adolescent sexual violence behavior were the exclusion criteria. Peer education, knowledge, attitude, and sexual behavior are used as keywords. Data analyzed using a table containing the author, year, method, sample, and research results. The findings of the research article analysis revealed that peer education is a preventive and promotional effort in increasing adolescents' knowledge and attitudes about sexual behavior. Peer Education influences adolescent sexual behavior knowledge and attitudes, and it also serves as a promotional and preventive effort to help teenagers control their sexual behavior. This intervention can be carried out together with other interventions and form a multi-program. The role of peers is an important component in this health education model. This model can be integrated and modified in adolescent reproductive health services in health care facilities.

INDEX TERMS Peer education, attitudes, knowledge, sexual behaviour, adolescents

I. INTRODUCTION

The increase in free sex by adolescents has an impact on sexual and reproductive health problems. The young 15-24 age group is at high risk of HIV infection; in 2018, 25% of them were newly infected with HIV in Asia, particularly in Indonesia, Myanmar, the Philippines, and Thailand; in Indonesia, there are 46,000 new cases of HIV infection [1]. The problems that are most often experienced by adolescents when they have had sex are mental, cognitive, pregnancy, teenage pregnancy behavior, reproductive health problems, have a bad effect on education, social consequences, and complications of pregnancy until the postpartum period [2].

The use of social media and places of entertainment (such as bathhouses) to find casual sex partners, as well as high-risk sex associated with alcohol and drug use, are all risk factors for HIV transmission [3]–[5]. School-based sexual and reproductive health programs are now widely accepted as a means of reducing risky sexual behavior, particularly among adolescents [6]. The Indonesian government established the Youth Care Health Service for counseling, providing guidance, and training peer counselors [7].

Peers are people who have the same position as other people in terms of age, background, social status, and interests. As a result, peer education has become a strategy

for health promotion among groups at high risk of HIV infection around the world, but the extent to which peer education can impact HIV prevention and the long-term effects of this impact is unknown [8]. By providing unique learning opportunities to promote health behaviors, peer education is one of the most effective strategies for changing behavior in adolescents [9]. Previous research on Peer Education found an increase in the average value of both knowledge and attitudes before and after the Adolescent Friendly (Peer Education) method [10].

Nigeria's young adolescents have a lack of comprehensive HIV knowledge [11]. Similarly, comprehensive HIV knowledge among adolescents in Indonesia remains low [12]. As a result, efforts must be made to increase attention to young adolescents, particularly through the provision of comprehensive functional sexuality education, including HIV, at the family and school levels. The findings in this study are that interventions in increasing knowledge and attitudes of sexual behavior in adolescents can be through peer education. This intervention is in accordance with the characteristics and needs of adolescents. This intervention can be developed by utilizing information technology, mass media campaigns, demonstrations, and role play. The findings of this study are a review of recent research on the effectiveness of peer education.

Several innovative interventions have been developed to increase adolescent awareness about healthy sexual behavior. However, in reality there are still cases of adolescents with unhealthy sexual behavior that have an impact on other health problems such as sexually transmitted diseases. Based on this phenomenon, the researchers identified several research articles that could provide an overview or recommendations for effective interventions in increasing adolescent awareness about healthy sexual behavior. The study's goal is to examine integrative research on the effect of Peer Education on adolescent sexual behavior knowledge and attitudes.

II. METHODS

A literature review was used as the design of this study. The databases used are PubMed, Science Direct, and EBSCO so 18 articles are obtained. The deadline for publication of research journals is 2015-2020. Electronic databases such as Google Scholar, Science Direct, PubMed (including Medline), Web of Science, Scientific Information Database, and Scopus were used to conduct this literature review. Finally, 18 articles were chosen based on the inclusion criteria.

The inclusion criteria are (1) articles using English, (2) published in the last 5 years, (3) complete articles can be accessed for free, (4) targeting teenagers, (5) peer education, knowledge and attitude, and sexual behavior as words. key. The exclusion criteria were (1) the target of teenagers who

were married and (2) the behavior of sexual violence by teenagers. Data analysis was carried out through a table containing the author, year, research design, sample, and results. The article selection process is described in figure below.

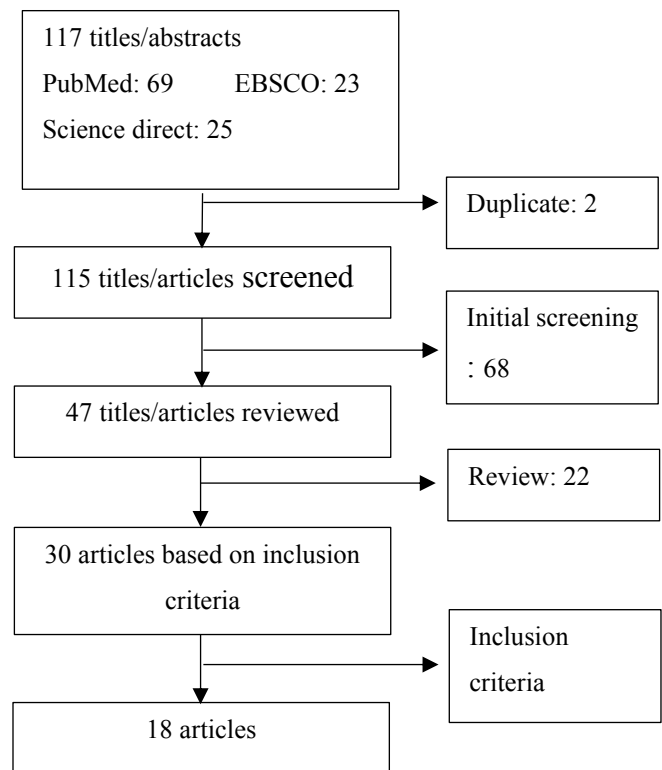


Figure 1. Article Selection Process Based on Inclusion and Exclusion Criteria

III. Results

Based on the articles that have been analyzed, Peer Education affects knowledge and attitudes about sexual behavior among adolescents. Peer Education also plays a role as a promotive and preventive effort so that teenagers can control their sexual behavior. This intervention can be carried out together with other interventions and form a multi-program. The summary of the articles that have been analyzed and presented in TABLE 1:

TABLE 1

Summary of articles on the influence of peer education on knowledge and attitudes about sexual behavior among adolescents in 2015-2020 (n=18)

No.	Author	Year	Design	Sample	Results
1.	Leigh Adams Tucker, Gavin George, Candice Reardon, and Saadhna Panday	2016	Cross-sectional study	190 people	Good relationships encourage adolescents to tell LO (Life Orientation) educators about personal problems, it also has an impact on increased participation and absorption of information. Barriers that arise are related to fears and concerns about peer evaluation due to sharing opinions and views on issues related to gender, gender norms that emphasize personal feelings, and socio-cultural norms.[13]
2.	Kimberly Wolf and Adelene Africa	2017	Descriptive Qualitative	11	Peer educators feel that they are role models, causing conflicts with themselves. The presence of a peer educator demonstrates that there is no relationship between knowledge and behavior. This is influenced by the limitations of the approach based on the construction of rational sexual beings.[14]
3.	Farzana Timol, Yacoob Vawda, Arvin Bhana, Benita Moolman, Mokhantso Makoae, and Sharlene Swartz	2016	Mixed-method research design	7709 people	The quality of <i>peer education</i> in terms of content, as many as 93% (in session 1 and session 2) of class respondents about HIV and AIDS increased respondents' knowledge and understanding of the topic, the topic was considered useful (89% in session 1 and 85% in session 2). The majority stated that the information provided was interesting (88% in session 1 and 86% in session 2) and easy to understand (by 85% of respondents). However, some materials are considered embarrassing (40%-50%).[15]
4.	Nancy F. Berglas, Petra Germany, Lousie A. Rohrbach, Francisca Angulo-Olaiz, Chih Ping Chou, and Norman A. Constantine	2016	cluster-randomized trial	of 10 schools	The use of sexual health services (Odds Ratio/OR) = 1.73, 95% CI = 1.09-2.75) and the likelihood of carrying condoms (OR = 2.71, 95% CI = 1.44-5.09) increased the most in the intervention group (class curriculum, workshops, and materials) and the likelihood of carrying condoms (OR = 2.71, 95% CI = 1.44-5.09) in the control group. Due to the low prevalence of sexual activity in the sample, there were no other behavioral effects. [16]
5.	Wai Sun Han, Heidi Miu Yin Hai, Carlos Wong King Ho, Joseph Tucker D., and William Wong Chi Wai	2018	Systematic Review and Meta-Analysis	15 articles	The majority of articles found peer education made improvements in sexual health knowledge (13/14) and attitudes (11/15) at the post-intervention stage. Two studies found an increase in self-efficacy and three found a change in behavior. A preliminary assessment of effectiveness and participation rates has been completed. A large effect on knowledge change (Hedges' $g = 0.84$, 95% CI: 0.43-1.25) and a moderate effect on attitude change (Hedges' $g = 0.49$, 95% CI: 0.19-0.80) was found in the meta-analysis [17]
6.	Mollie B. Anderson, Theresa M. Okwumabua, and Idia B. Thurston	2017	Pilot study	of 124 people	After Condom Carnival (demonstration action, Peer Education, and roleplay) there was a statistically significant increase in lubricant safety awareness ($p < 0.001$) and intention to carry condoms the following year ($Z = 0.52$, $p = 0.04$). However, only three-quarters of respondents agree that they will always carry a condom[18].
7.	Ibrahim Yakubu and Waliu Jawula Salisu	2018	Systematic review of	24 articles	This study identifies the factors that influence the high rate of pregnancy in adolescents. One of the factors is socio-cultural in the form of peer influence. [19]
8.	Takele Menna, Ahmed Ali, and Alemayehu Worku	2015	Quasi-experimental study	of 560 people	During the postnatal period, intervention, namely peer education, showed significant differences in HIV knowledge (p -values = 0.004) and willingness to take HIV counseling and testing (p -value = 0.01). During the post-intervention period, the intervention group also tended to use condoms (AOR = 4.73 (95% CI, 1.40-16.0) [20]
9.	J. Chiu, Luis Menacho, Celia Fisher, and Sean D. Young	2016	Quantitative study	of 211 people	Most said they were more likely or more likely to maintain a healthy lifestyle, practice safe sex, be tested for HIV on a regular basis, and participate in a research study after participating in the Harnessing Online Peer Education (HOPE) program. [21]

10.	Tanya L. Boone	2015	Two-part study	81	Parents and schools influence the prohibition of sexual intercourse before marriage, while peers and the media influence the delivery use of protective equipment to prevent pregnancy. [22]
11.	Geremew Werkeshe Wana, Oyedunni Arulogun, Adebola Roberts, and Abraham Sahilemicchael Kebede	2019	Cross-sectional study	of 364 people	Opportunities for risky sexual behavior I higher among social media users compared to non-users AOR = 1.23 (95% CI 1,13,3,12). Nightclub visitors were nearly four times more likely to engage in risky sexual behavior AOR = 4,294 (95% CI: 2,033, 9,073). AOR = 6.97 (95% CI: 4.24, 9.69) for peer pressure and substance abuse were also significant predictors of risky sexual behavior [23]
12.	Ndumiso Daluxolo Ngidi, Sibusiso Moyo, Thobile Zulu, Jamila Khatoon Adam, Suresh Babu Naidu Krishna	2016	Qualitative study	of 26 people	The results of the study state that individual and According to the study's findings, one of the factors that contribute to HIV exposure is individual and social factors that influence risky sexual behavior. Peers are one of them. Peer pressure had an impact on promoting risky sexual behavior among students.[24]
13.	Anne-Sophie Homøe, Ane Kersti Skaarup Knudsen, Sigrid Brisson Nielsen and Anna Garcia-Alix Grynnerup	2015	Qualitative design	8 people	Both groups agree that a <i>sexual educator</i> is one with knowledge of sexual health and a comprehensive understanding of cultural values. [25].
14.	Jessica Fields and Martha Copp	2015	Qualitative study	31 people	Affinity and alliance are two approaches to empathizing with their students. The findings indicate that alliance-based empathy is required to prepare peer educators, as well as all sexuality educators, to identify inequalities or barriers that others face and to find ways to promote social change. [26]
15.	Maha Hamad Mohammed Ali, Osman Babiker Osman, Mohamed AE. M. Ibrahim, and Waled Amen Mohammed Ahmed	2015	Pre-post study	400 people	Research shows that the <i>AIDS Peer Health Education</i> increased participants' knowledge from 75.5% to 83.2%. Students' attitudes also increased significantly from 70% to 83%. Student behavior increased from 70% to 83%. [15]
16.	Lena Faust and Sanni Yaya	2018	Systematic review and meta-analysis	36 articles	The intervention group (computer-based, mass media campaign, and peer education intervention) had a high level of knowledge about: risk reduction through condom use (OR: 3.09, 95% CI: 1.83–5.22, $p < 0.0001$), sexual transmission of HIV (OR: 5.86, 95% CI: 2.65–12.97, $p < 0.001$) and object-borne transmission sharp (OR: 4.35, 95% CI = 3.21–5.90, $p < 0.001$), but a significantly lower chance of HIV infection (OR: 0.97, 95% CI: 0.66–1.41, $p = 0.854$). [27]
17.	Linda Rajhvajn Bulat, Marina Ajduković, and Dea Ajduković	2016	Cohort cross sectional design	560 people	Based on the research, peers talk more about sexuality than parents. The direct and indirect influence of parents and peers is influenced by age level. In grade 3 high school students, peers are more active in sexual perception. while in grade 1 high school students, peers act as additional media that connects parents with sexuality. [28]
18.	Christopher Donoghue, Consuelo Bonillas, Jeniffer Moreno, Omara Cardoza, and Melissa Cheung	2017	Cross sectional design	617 people	The findings show that those who have had no sexual experience are more receptive to messages from authority figures in their lives such as parents, family members, religion, and peers than those who have had sexual experience. Sexually inexperienced youth had lower levels of sexual intention and sexually experienced youth reported higher condom use. [29]

IV. DISCUSSION

Sexual behavior by adolescents has an impact on sexual and reproductive health. When adolescents engage in more free sex, the prevalence of Sexually Transmitted Diseases (STDs) and HIV/AIDS rises [30]. This is because behavior is influenced by predisposing factors like knowledge and beliefs, reinforcing factors that can be positive or negative, and enabling factors like the environment. The implementation of the AIDS Peer Health Education there

was an increase in knowledge from 75.5% to 83.2%, attitudes from 70% to 83%, and behavior from 70% to 83% [15]. The implementation of Peer Education combined with various interventions in multiple programs. Based on previous research, the researchers employ a variety of computer-based interventions, as well as mass media campaigns and peer education [27]. Increased knowledge of reducing risk through condom use (OR: 3.09, 95% CI = 1.83-5.22, $p < 0.0001$), sexual transmission of HIV (OR: 5.86, 95%

CI = 2.65-12.97, p 0.001), and HIV reduction in injecting needle users (OR: 4.35, 95% CI = 3.21-5.90, p 0.001). However, not all youth will be open when Peer Education is implemented. There are fears and concerns about peer evaluation because sharing opinions and views about sexual behavior is an obstacle to achieving the goals of Peer Education [31].

The success of Peer Education is strongly influenced by peer educators. Peer educators must meet the criteria so that the information conveyed is correct and does not cause wrong perceptions by adolescents. It was stated that peers can affect the high pregnancy rate in adolescents [19].

Peer education intervention on HIV/AIDS related sexual behaviors of secondary school students resulted in a positive change [20]. The criteria for becoming an educator are being able to be an active listener, must be respected by the target, confident, non-judgmental, have almost the same socio-cultural background, able to teach, able to extract ideas and concerns to find solutions, providing opportunities for storytelling, have empathy, and good problem solving [32]. According to research, educators must have a thorough understanding of cultural [32]. According to research, educators must have a thorough understanding of cultural [25]. This literature review is expected to provide views on the implementation of Peer Education that can affect knowledge and attitudes among adolescents.

This research still has some limitations including only a few research articles that were analyzed. Researchers should review as many articles as possible from various journal databases about the role of peer education in increasing adolescent knowledge and attitudes about sexual behavior so that the research findings can be compared to previous findings. A more varied description of interventions will provide recommendations for the development of similar interventions in the future.

V. CONCLUSION

The study's goal is to examine integrative research on the effect of Peer Education on adolescent sexual behavior knowledge and attitudes. The conclusion from the results of the literature review of research articles conducted is that Peer Education can be a preventive and promotional effort that affects increasing knowledge and attitudes about sexual behavior among adolescents, either as a standalone program or as part of a series of programs. The role of peer educators who meet the criteria influences the success of Peer Education. Peer Education is one of the most effective strategies for changing behavior in adolescents, by providing unique learning opportunities to promote health behaviors.

The results of this literature review can be used as a reference in implementing and developing Peer Education for nursing students, health care facilities, and the general public. The findings of this literature review can be used by future researchers to determine the impact of Peer Education in various circles. Intervention innovations in raising awareness about healthy sexual behavior need to be

developed. Several interventions that have been carried out in previous studies can be tested in future studies.

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