

Original article

Reducing the Risk of Teen Pregnancy among Middle School Pupils through Experiential Learning Intervention by Midwifery Students

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Abstract:

Background: This study aimed to evaluate the impact of an experiential learning intervention among middle school teens by midwifery students to reduce the risk of teen pregnancy. **Methods:** This research was a controlled pre-and post-test design study aimed to evaluate the impact of experiential learning intervention “Smart Teens Program” among middle school students. The data on knowledge, attitude, and subjective norms were collected during a pre-test and post-test (six weeks for intervention), in a control group (n=70) and an intervention group (n=68). The data were collected from self-administered questionnaires and analyzed using STATA (version 12.0). **Results:** The results showed a significant impact of the intervention “Smart Teen Program” by midwifery students, where there was a significant increase in the knowledge, attitude, and subjective norms in reducing the risk factors of teen pregnancy (p-value = 0.00). The control group who was not given any treatment showed a decreased value.

Conclusions: Interventions through experiential learning by midwifery students were able to improve efforts to prevent teen pregnancy.

Keywords: reducing teen pregnancy; experiential learning; midwifery students

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Introduction:

Teenage pregnancy continues to be a social, emotional and economic challenge for teenagers and their communities¹. The World Health Organization estimates that women aged 15-19 have a higher risk of dying from teenage pregnancy than women aged 20-24. The risk of maternal death occurring is five times greater in women aged between ten and 14 age than in women aged 20 years^{2,3}. Besides the risk of maternal mortality, teenage mothers and born

babies are at greater health risk and socioeconomic problems⁴ such as maternal anaemia and depression, low-weight birth infants, premature birth, and infant mortality^{5,6}. Teenage problems do not stop after the teens give birth^{3,7,8}. Parents who are still teenagers will face severe obstacles on their path to a better life for themselves and their children. Also, they will be a financial burden on society as a whole. The economy of the country is affected by adolescent girls who become pregnant because teens mothers are hindered

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from entering the labour market⁹⁻¹². The social consequences of the impact of teen pregnancy involve shunning and other stigmas including expulsion from school¹³. Teenage pregnancy is closely linked to low education levels, social isolation, gender inequality, violence and abuse¹⁴, dangerous dynamics of power, severe health risks, and poverty vulnerability. These teenage pregnancies also have a serious impact on families and communities. In addition, early marriages are seen as a threat to international development efforts to reduce poverty in developing countries^{15,16}.

As many as 17% of married women aged 20 to 24 years in Indonesia were married before the age of 18. Statistically, it means that out of 100 existing marriages, 17 girls under the age of 18 are married. The high prevalence trend occurs in rural areas¹⁷.

School-based reproductive health education programs are proven to have a positive effect¹⁸. However, educators face several obstacles in implementing sexual health education in schools and are constrained in team teaching that provides only

basic information on reproductive health in schools. The application of experiential learning by students of midwifery is one solution, which is mutually beneficial. The benefit is that junior high school students can learn from midwifery students who are their peers and have enough basic knowledge to help with the problems of adolescence. Meanwhile, the benefit for midwifery students is that they can apply their knowledge and learn more about the cases in the field, especially relating to providing guidance and counselling.

Methodology:

Participants

Participants in this study were the first secondary school students aged 12-17 years. Schools voluntarily participated in this study, which represents a high risk of adolescent pregnancy. Participants came from two junior high schools in suburban areas. Purposive sampling techniques were employed to select the participants. There were 138 participants then divided into two groups (intervention group = 68 students and control group = 70 students).

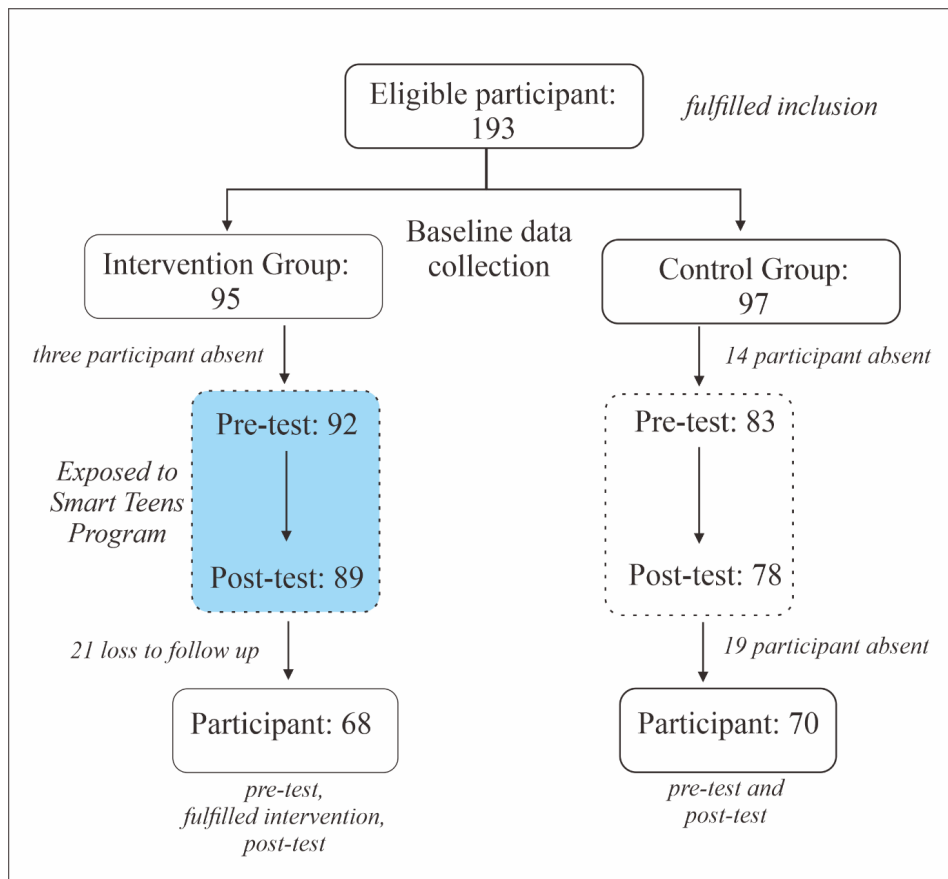


Figure 1. Flow Chart of Control and Intervention Group

Procedures

This study was designed as a quantitative analysis research with a pre-and post-test control group design. Data collection was conducted from October to December 2016. Interventions used refers to the results of focus group discussions (FGDs) qualitative research with students, parents, and teachers. Before the intervention, the control group was given a self-administered questionnaire. The intervention group was trained by midwifery students for six weeks. The training program is called Smart Teens Program. One week after the intervention was completed, a post-test was carried out for both of control and intervention groups.

Smart Teens Program

Smart Teens Program is an education and skill program to reduce the risk factors of pregnancy in adolescents with emphasis on self-knowing, inviting the selection of healthy life choices, right relationships, healthy behaviour choices and planning for the future. This program model is developed based on qualitative information from the group of students, teachers, and parents. Modelling this program, researchers recruited a team of professionals (doctors obgyn, counsellors, and psychologists). In this program, midwifery students were facilitators in the school. The formation of a team of professionals aims to help researchers develop the material in the Smart Teen Programs module as well as the deepening of materials for midwifery students. The modules were used as a guideline for midwifery students in the provision of learning materials related to adolescent health at school, especially related to the prevention of teen pregnancy. Midwifery students giving interventions to male and female students are active students in the counselling information centre, having taken courses in basic biology and developmental biology, reproductive health, maternal and child psychology, and communication and counselling. Fourteen midwifery students became the facilitators in this program. They took turns assisting students. During the administration of the material in the program, school students were required to wear a bulging belt like pregnant women with a weight of three kilograms, so that students felt the discomfort of expectant mothers (Figure 2).

Data analysis

Data analysis was performed with STATA 12.0. Independent t and paired t-tests were used for parametric data tests. While Wilcoxon signed rank

and Wilcoxon rank sum tests were employed for nonparametric data tests.

Table 1. Participant Demographic Characteristics

Characteristics	Intervention		Control	
	N= 68	%	N=70	%
Age				
Mean ± S.D.	14.16± 0.98		14 ± 0.94	
Median (min-max)	(13 - 17)		(12 - 17)	
Gender				
Male	37	54.41	36	51.43
Female	31	45.59	34	48.57
Family status				
Core family	62	91.18	60	85.71
Extended Families	6	8.82	10	14.29
Father's education				
No schooling / not graduated from elementary school	1	1.47	3	4.29
Elementary school	24	35.29	44	62.86
High school	36	52.94	18	25.71
Higher Education	7	10.29	5	7.14
Father's occupation				
Informal (Entrepreneurs, workers, farmers, parking attendants)	43	63.24	56	80.00
Formal (civil servants, army and Private employee)	25	36.76	14	20.00
Mother's education				
No schooling / not graduated from elementary school	0		5	7.14
Elementary school	25	36.76	40	57.14
High school	37	54.41	23	32.86
Higher Education	6	8.82	2	2.86
Mother's occupation				
Does not work (housewife)	44	64.71	30	42.86
Work	24	35.29	40	57.14
Ever get reproductive health				
Already	61	89.71	53	75.71
Not yet	7	10.29	17	24.29

Ethical Clearance:

The research has received approval from the Medical and Health Ethical Committee of the Faculty of Medicine, Gadjah Mada University, with approval number KE/FK/1105/EC/2015 and permission from the Yogyakarta Government. All respondents in this study were volunteer-based. To ensure the respect,

Table 2. Comparative Test of Knowledge, Attitude, and Subjective Norm

Mean ± SD		The mean difference in a group (post-pre) (95% CI) (p-value)	The mean difference between intervention-control groups (95% CI) (p-value)
	before intervention	after intervention	
Knowledge level			
Intervention (n=68)	17.38 ± 3.43	20.27 ± 3.41	2.89 (1.98 to 3.81) (p-value=0.00)
Control (n=70)	18.01± 2.56	16.64 ± 3.39	-1.37 (-2.29 to -0.45) (p-value=0.00)
Attitude			
Intervention (n=68)	79.55±10.42	84.72± 10.80	5.16 (2.73 to 7.59) (p-value=0.00)
Control (n=70)	80.25±8.54	76±11.45	4.25 (2.00 to 6.50) (p-value=0.00)*
Subjective norm			
Intervention (n=68)	65.85±9.68	70.98 ± 10.44	5.13 (2.49 to 7.76) (p-value=0.00)
Control (n=70)	67.67 ± 8.28	63.74 ± 9.94	-3.92 (-5.70 to -2.15) (p-value=0.00)
			7.24± 0.00 (3.8 to 10.67) (p-value=0.00)**

(*Wilcoxon sign-rank and **Wilcoxon rank-sum)

freedom, and dignity of each participant in the study, several steps were taken. The objective and research procedures were explained. Information was assured confidentiality to all research subjects. Prior to data collection, informed consent forms must be completed. All procedures were conducted according to the regulations and handbook based on the Declaration of Helsinki 2013¹⁹ and Good Clinical Practice.

Results:

The demographic features of the control and intervention group participants are shown in Table 1. The demographic data reveals that participants in either the intervention group or the control group had similar characteristics. The majority in both groups were males. The majority came from families who have the status of the nuclear family, who lived with the biological mother and father. The majority of participants' parents had non-formal jobs. Some were self-employed, workers, farmers,

and parking attendants. The majority had learned about reproductive health, but the information was not focused on teenage pregnancy prevention.

The results of the comparison test were conducted using three measured variables, namely the student's knowledge level, attitude, and subjective norm (Table 2). The results show that the mean knowledge scores in the control and intervention groups before the intervention were 18.01 and 17.38, respectively. The mean post-test scores of the intervention group were statistically significantly higher compared to the pre-test (the mean difference = 2.89; p-value = 0.00; 95% CI = 1.98 to 3.81). The mean value of the intervention group was a statistically significant difference compared to the control group (the mean difference = 3.63; p-value = 0.00; 95% CI = 2.49 to 4.78). The post-test score on the attitude variable in the intervention group of adolescent pregnancy prevention increased from the pre-test (the mean difference = 5.16; p-value = 0.00; 95% CI = 2.73 to 7.59). Data on attitude variables in the control group

were not normally distributed. As a result, they were tested with the Wilcoxon signed rank. From the table, it is statistically known that the p -value < 0.05 is significant, which means that there are fundamental differences between the pre and post-test results in the control group. The post-test result of the control decreased from the pre-test result. This may be possible because of human research objects that allow for other factors beyond research that cannot be controlled. For example, during the pre-test and post-test periods, there is the possibility of getting information from media and attitudes and behaviour of adolescents who tend to follow the present-day lifestyle stronger, while the control factor does not exist. The mean value of the post-test in the intervention group and the control group had a statistically significant difference (the mean difference in attitude between groups, 8.72; p -value = 0.00; 95% CI = 4.96 to 12.47). The mean subjective norm post-test in the intervention group statistically significantly increased from the pre-test (p -value = 0.00 with 95% CI = 2.49 to 7.76). The difference in the mean of the subjective norm variable in the intervention group was 5.13. Data on the subjective norm variable were not normally distributed. As a result, they were tested using the Wilcoxon rank sum test. The results showed a difference between the results of the intervention group after the test and those of the control group (p -value < 0.05). The mean of the subjective norm of the intervention group was higher when compared to the control group.

Discussion:

Most schools did not have a youth-friendly place for teenagers and adequate counselling facilities for students to obtain support or advice regarding a teenage health matters. In addition, many students are in dire need of adequate information, but the information they receive is usually insufficient and unsatisfactory. Most students were dissatisfied with the adolescent health education received from school²⁰.

Midwifery student experience providing an intervention is a valuable lesson, both for teens and midwifery students themselves. The intervention model that not only focuses on reproductive health issues in general but also concentrates on the achievement of the future makes this intervention different from others. Based on the results the model demonstrates the effectiveness of the program based on experiential learning by students' midwifery. This research develops an intervention based on



Figure 2. Students were required to wear a bulging belt like pregnant women, during the administration of the material in the program, so that students felt the discomfort of expectant mothers.

the experiential model of health promotion in schools involving students of midwifery. Statistics show significant results from each of the variables. Knowledge, attitude and subjective norms that increased in the intervention group are a sign of success in this program. It is consistent with research by Reis (2011) indicating that formal sex education in school provides a positive association between sex education recipients by preventing risky sexual behaviour, and increasing knowledge, motivation, and skill. This approach can reduce teenagers' sexual intercourse and younger adolescents' sexual intercourse numbers²¹.

Increased prevention knowledge in teen pregnancy is also agreeing with a previous study performed by Somart and Sotta (2013), that school-based sexual health education programs efficiently increase sexual health attitudes and knowledge about sexuality in junior high school students²².

The attitude of the participants toward the prevention of teen pregnancy showed significant change. Positive enhancement toward change was maintained throughout the period. The findings of this research are in line with previous studies about the prevention of HIV and risk behaviour through a peer education program which has been successful in helping to improve the student's attitude, behaviour and knowledge²³.

Social norms are considered significant in the behaviour of individuals²⁴. The focus on the assessment of subjective norms was conducted to determine the existence of the social environment (family, community, friends) in influencing risky behaviour in adolescents (students). Subjective norms are a significant determinant in explaining premarital sex intentions. Among the role models,

peers most dominantly influence the intention to refrain from sexual behaviour and comply with those in the culture, father and mother²⁵. Teens who attend school will spend a third of their time at school, so the school is the most useful place for information provision to prevent teenage pregnancy²⁶. Similarly, Mollborn et al. (2014) mentioned that when designing policies to reduce teenage pregnancies, it is very important to consider the local school environment as the normative process²⁷.

Limitations

In order to interpret our results, several study limitations must also be considered. Although the data we have collected is sufficient to enable us to predict robustly students' knowledge, attitudes, and subjective norms. The absence of a small number of students in the school-level factor evaluation possibly affects the effectiveness and accuracy of implementation. In addition, the staff for this project was minimal resulting in oversight of the training of facilitators to measure the extent to which conflict-resolution and games strategies were conveyed to students. The modules and the programmatic elements are an integral part of the Smart Teen programs. The lack of information on the delivery of the programmatic elements in our work hindered us in determining whether all key elements of the Smart Teen programs were delivered. A comprehensive implementation, monitoring and evaluation plan to cover all aspects of program delivery is necessary for future study.

Conclusions:

Smart Teen Program, a school-based health promotion model for teen pregnancy prevention is fruitful for inducing positive alteration in the attitudes, knowledge, and subjective norms associated with teen pregnancy prevention among junior high school students. The results of this research reveal that intervention through experiential learning by midwifery students and appropriate materials that emphasize adolescents' responsibility for themselves can enhance efforts to prevent teenage pregnancy.

Based on the effective impacts of this work, it is recommended that this program be offered in junior high schools in collaboration with a group of students from a midwifery institution.

Implications for School Health

This work depicts the outcomes of Smart Teen Programs. Our mixed research results exhibit the weightiness of conscientious implementation monitoring, and further research is needed to conceive how intervention outcomes wheater affected by treatment adherence and other environmental factors. This study introduces potential ways to elevate positive changes in knowledge, attitudes, and the subjective norms involved in the prevention of teen pregnancy among junior high school students.

When choosing Smart Teen Programs, schools must consider the following factors: implementation timeline, motivation and long-term goals for intervention impact, availability, working with a group of students at a midwifery facility, and staff support for the implementation program. In addition, the availability and necessity of resources are very important to ensure the program's sustainability.

Conflict of interest

The author declares that there is no conflict of interest

Author's contribution

FM is the owner of the idea in this research. FM construct a research design under the DI and YSP supervision. FM is responsible for data collection, data analysis and data interpretation. FM wrote the original manuscript which was later edited and revised by DI, YSP, and OE. All authors approved to submit of the manuscript

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