



# Increasing mothers' reproductive health knowledge and attitudes through education on youth internet-based social interaction

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## ABSTRACT

Adolescents have the highest rate of internet usage compared to those of different ages. Dissertation media, societal changes, and insufficient parental involvement support the development of promiscuity in adolescents. Parents, especially mothers, have a strong role in controlling the behavior of adolescents. Therefore, mothers need to have good knowledge and attitudes related to youth internet-based social interaction. The goal of this study is to assess changes in mothers' attitudes and knowledge because of education regarding how young people engage online and how that affects their reproductive health. Forms of adolescent sexual behavior, pornography, adolescent self-concept, cyberbullying, and parent-adolescent communication are among the knowledge and attitude topics that are evaluated. In this study, a one-group, quasi-experimental pretest – posttest approach was adopted. The research sample consists of 21 participants that were chosen using purposive sampling. A paired t-test was utilized to assess the questionnaire data. In the pre- and post-test, the respondents' average knowledge score rose from 95.23 to 97.14. P value of 0.428, with the range of CI was -3.001 – 6.81. Respondents' attitude score rose from 77.85 to 85.95 (95% CI: 1.56 – 14.63). These results indicated differences in the respondents' attitude before and after training but not with respondents' knowledge, although both of them experienced an increase in average scores. Youth Internet-based social interaction for mothers can improve mothers' attitudes and knowledge. To avoid juvenile delinquency, a health program that involves parental involvement in disseminating information about reproductive health in connection to teenage social interaction is necessary.

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## 1. Introduction

The internet era marked by the rise of the internet used has brought with it new challenges, particularly for teenagers. This is because internet penetration in adolescents is the highest compared to other age groups. Internet access that is easier and more personal, strengthened by the nature of the internet which is on demand, making teenagers free to access any information to satisfy their curiosity [1]. It was reported that the majority of teenagers (97%) use mobile phones to access the internet, and 67% of them are already in the category

of gadget addiction [2]. Pornography is one of the types of internet content that is widely accessed by teenagers without being bound by restrictions and censorship [3]. According to one study, accessing pornography on the internet is considered normal for adolescents [1].

Adolescents are not mentally ready to face global changes through the internet world, so it affects their social behavior and results in the emergence of problems in their social interaction [4]. Dissertation media, cultural shifts, and weak parental attention encourage the establishment of promiscuity among adolescents [5]. Problems that occur in many adolescent social interaction are inseparable from reproductive health problems, which can have an impact on premarital pregnancies [6]. Against the background of easy access to pornography that is not accompanied by good knowledge of reproductive health, it encourages adolescents to try new experiences through dating activities [1].

The health profile data in the Special Region of Yogyakarta, known that in 2021 there were 113 adolescents who give birth at the aged of 15 – 17 years old, and 134 cases of adolescents giving birth at aged 18-19 years [7]. These numbers were increased during the Covid-19 pandemic. Based on the 2017 Indonesian Demographic and Health Survey (IDHS), it is known that 80% of women and 84% of men admit to having dated, where 45% of women and 44% of men admit that they first dated between the ages of 15 and 17 years. This dating behavior encourages teenagers to express their sexual desires through a variety of activities, including holding hands, hugging, kissing on the lips, touching or being groped, and sexual intercourse. Among women and men who had premarital sexual intercourse, 59% of women and 74% of men reported having their first sexual intercourse at the age of 15–19 years. This premarital sexual relationship had an impact on the occurrence of unwanted pregnancies in 12% of women and 7% of men who admitted that their sexual partner had an unwanted pregnancy [6].

Problems due to adolescent social interaction as described above will reduce the opportunity for adolescents to behave in a healthy way and disrupt the planning of adolescent life in the future. In order to respond to these problems, various approaches have been taken by the government, one of which is the *Bina Keluarga Remaja* (BKR). BKR is a work program of the National Population and Family Planning Agency (BKKBN) especially dedicated for family members who have teenagers aged 10–24 years that aims to increase parents' knowledge of coaching teenagers. The need for guidance for adolescents with a family approach is based on the fact that adolescents prefer to tell their problems to peers (71%) and parents (31%). Even though the proportion of adolescents who prefer friends is greater, the role of the family is still important because adolescents are still under the care and supervision of their parents and family, which are the shapers of adolescent character [8]. There are several roles that can be played by the family in preventing juvenile delinquency, including being an example and role model, motivating teenagers, and filtering friends or the social community of teenagers [9].

A figure that has a crucial role and cannot be eliminated from the family is a mother. Mothers play an important role in the family as protectors, both physically, mentally, and emotionally. In addition, the mother also has a role as a family nurse who always maintains the health of family members, both physically and mentally [10]. In order for mothers to be able to carry out their roles optimally, especially in relation to supervising adolescent social interaction, they need to be provided with information about the impact of adolescent social interaction in the internet era in order to create knowledge and positive attitudes.

Previous research conducted in West Bekasi, known that 58% mothers have good knowledge about adolescent's reproductive health. As many as 61 mothers (49%) already have a very good attitude towards sex education for teenagers. The results of the regression

study stated that the coefficient of determination obtained was 0.03, which means that mother's knowledge about reproductive health contributes 3% to supportive attitudes towards sex education [11]. Therefore, the goal of this study is to ascertain if educating mothers about young people's online social interactions is useful in enhancing their attitudes and understanding about reproductive health.

## 2. Method

This study used a quasi-experimental with a one-group pretest-posttest design. The research sample consists of 21 respondents. Sampling used a purposive sampling technique that was based on the inclusion criteria where mothers from the Youth Family Development Committee (BKR) of Mertosan Kulon Hamlet, Potorono, Bantul, D.I. Yogyakarta who had teenagers aged 15–24 year, and respondents completed questionnaires to collect pre and post test data. The exclusion criteria for respondents who didn't attend the education session. The questionnaire contains the knowledge and attitudes of the respondents towards the association of adolescents in the internet era. The components of knowledge and attitudes that were assessed using a questionnaire were regarding adolescent premarital sex behavior, the concept of adolescent self-image, cyberbullying behavior, and pornography. Statements of knowledge were measured using the "true-false" choice and attitudes were measured by a Likert scale of "strongly agree, agree, disagree, and strongly disagree" Statements for the knowledge and attitude aspect in the questionnaire presented in Table 1.

Table 1. Knowledge and Attitude Statements in the Questionnaire

<b>Knowledge Statements</b>	
1.	Cuddling is part of premarital sexual behavior
2.	Pornography addiction can damage the brain, even worse than brain damage caused by car accidents
3.	Negative judgments that owned by adolescents to themselves can result in adolescents being inferior (low self-esteem)
4.	Children who are too pampered at home can potentially become perpetrators of cyberbullying
5.	Good communication between parents and adolescents is able to fortify adolescents from delinquency
<b>Attitude Statements</b>	
1.	Dating is a form of freedom given by parents to teenagers
2.	Teenagers watching pornography is a natural thing
3.	I am happy if my teenagers like their physical appearance
4.	It doesn't matter if teenagers bully on the internet as long as it's not in the real world
5.	Parents must knock on the door before entering the child's room.

Questions about knowledge and attitude variables developed from material in educational activities. This is what underlies the validity of the instrument used. Content validity chosen to apply in this study. Content validity is one way that can be used for quantitative research. Content validity relates to whether the statement items (items) arranged in a questionnaire or test cover all the material to be measured [12].

Questionnaires were given twice, namely before the training and right after the training was over. The training provided consists of giving four educational materials using the lecture method with PowerPoint media and film screenings. The educational materials provided included: 1) premarital sexual behavior of adolescents; 2) self-concept of adolescents; 3.) cyberbullying, and 4) pornography. Apart from being given educational material, parent-adolescent communication practices were also carried out using the case study and role play method. The series of treatments were carried out once, divided into two days.

The first day was delivery the educational material, and the second day was practical implementation. The collected questionnaire data was then analyzed using a paired t test to see if there were any differences between the knowledge and attitudes of the mothers before and after the training was given.

### 3. Results and Discussion

#### 3.1. Results

The characteristics of the respondents studied included age, education, and occupation. In more detail, the frequency distribution of respondents can be seen in Table 2.

Table 2. Respondents Characteristics

Characteristics	n	%
<b>Age</b>		
≤ 40 year	6	28.6
41– 45 year	5	23.8
46 – 50 year	5	23.8
51 – 55 year	4	19.0
≥ 56 year	1	4.8
<b>Occupation</b>		
Housewife	13	61.9
State Civil Apparatus	1	4.8
Private sector employee	1	4.8
Entrepreneur / trader	6	28.6
<b>Education</b>		
Not completed in primary school	3	14.3
Middle school graduate	9	42.9
High school graduate	6	28.6
College school graduate	3	14.3
<b>TOTAL</b>	<b>21</b>	<b>100</b>

In Table 2, it can be seen that the majority of respondents were aged 40 years, namely 28.6%; the work of the respondents was dominated by housewives (61.9%); and almost half of the respondents had graduated from junior high school (42.9%). Then univariately, an overview of the knowledge and attitudes of the participants before and after the training was given can be seen through the pre and post test data in Table 3.

Table 3. Univariate analysis of knowledge and attitude score on pre-post test

Score	Pre-Test		Post-Test	
	Knowledge	Attitude	Knowledge	Attitude
Mean	95.23	77.85	97.14	85.95
Min	60	50	80	70
Max	100	95	100	100

Then a bivariate analysis was carried out with a paired t test to see if there were differences in the knowledge and attitudes of the respondents before and after the training. Table 3 showed that both knowledge and attitude have rising in average scores before and after the training given. The average score for respondents' knowledge rises from 95.23 to 97.14, and respondents' attitude rises from 77.85 to 85.95.

Tabel 4. Result of paired t test analysis

<b>Intervention</b>	<b>P value</b>	<b>95% CI</b>
<b>Knowledge</b>		
Pre-test	0,428	-3,001 – 6,81
Post-test		
<b>Attitude*</b>		
Pre-test	0,018	1,558 – 14,631
Post-test		

\*significant

Table 4 showed the attitudes of respondents before and after training have a significant value of 0.018 (95% CI: 1,56–14,63). According to this, youth internet-based social interaction training for mothers has the ability to improve mothers' attitudes but hasn't been shown to do so significantly for knowledge.

### 3.2. Discussion

The internet era demands screening of health information as well as good screening of youth social interaction [13]. Problems in adolescent associations are often motivated by a lack of understanding and awareness due to limited delivery of information, especially in social interaction related to reproductive health [14]. The use of sophisticated gadgets and mobile phones makes it easier for adolescents to access cyberspace, often unaccompanied by good education about reproductive health, which results in a wrong understanding of sexual behavior [15]. Adolescent addiction to gadgets also has a negative impact on family functioning; the greatest impact is on the dimensions of affective response, affective engagement, and adolescent behavior control [16].

As a result, parental supervision of the use of gadgets aimed at preventing adolescents from engaging in risky reproductive health behaviors, such as the occurrence of unwanted pregnancies, is required. However, in practice, providing information related to reproductive health and sexuality to adolescents is still rare [17]. Several things were reported to hinder open communication between parents and adolescents, including low knowledge and communication skills along with cultural norms related to taboos [18].

This study aims to assess the increase in reproductive health knowledge and attitudes of mothers towards youth internet-based social interaction through education activities. Based on the pre- and post-test assessments that have been carried out, there was an increase in the average score of mother's knowledge and attitude. The improvement knowledge score and the attitude score has statistically proven that there was a difference in mother's attitude. This indicated an increase in mother's attitude before and after training. However, the knowledge of mothers was not statistically proven to be different between before and after the training. This finding was different from previous research where communication training on youth reproductive health could increase mothers' knowledge [13]. As a result of the mother's starting knowledge before receiving training, which was already high, there was no statistically significant difference in the mother's knowledge in this study.

This is possible because the mothers who were respondents in this study were members of BKR, where they have been often exposed to information about teenagers. Nevertheless, this high knowledge at the beginning was not in line with the mother's attitude, which proved to have increased after being given this training. Attitude is a form of evaluation response in which a response is already under consideration by the individual concerned and can be stronger after being given a stimulus, in this case the stimulus was the provision of adolescent reproductive health education to mothers [19].

Adequate provision of information about youth social interaction to parents indirectly helps educate adolescents because the majority of adolescents choose to receive information on social issues, including reproductive health, from within the home [20]. Along with the development of the internet era, parents are expected to be able to keep up with the times so that they can become comfortable interacting figures for teenagers [13].

There was a significant positive relationship between mothers' experience and mothers' self-efficacy in accompanying teenagers who use gadgets [21]. Mothers who feel they were capable and have a positive attitude towards reproductive health information will provide sexuality education to their adolescents 7.25 times better than mothers who have a weak perception of their own abilities [22]. The topics of discussion that were mostly carried out between mothers and teenage girls were related to menstruation, while HIV AIDS and Sexual Transmitted Infections (STIs) were the main topics that were often discussed between mothers and teenage boys. It was reported that most youths (89%) had a positive attitude toward communicating with their parents regarding reproductive health. However, only 15% of adolescents feel comfortable talking to their parents [23]. In order to promote excellent social conduct and sustain a healthy lifestyle over time, strategies for communication were required to ease the tension between adolescents and their parents [24]. These findings indicated the need for parental involvement in adolescent reproductive health programs and the need to design interventions that focus on parental participation in promoting health through parent-adolescent communication [23].

#### 4. Conclusion

Youth internet-based social interaction training activities for mothers can increase mothers' attitudes and an increase in the average total pre-test and post-test scores. An increase in the average score also occurred in the knowledge of respondents although the difference in pre- and post-test scores was not statistically proven. In order to avoid juvenile delinquency, a health program that involves parental involvement in disseminating information about youth reproductive health is necessary.

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#### Author contributions

FPU contributed to the study concept and design, data collected, formal analysis, writing original draft preparation, writing review, and editing. NSS contributed to the study concept and design, supporting analysis, writing review, and editing. DN contributed to the study concept and design, data collected, writing review, and editing. All authors approved the final manuscript.

#### Disclosure statement

The authors report no conflicts of interest.

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