



## Health Promotion Model through Peer Group Education on Health Behavior Change

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### Abstract

Adolescence is also a period of mental change that can fluctuate. This pandemic results in changes in any behavior related to adolescents. The psychological condition of adolescents, who are generally still vulnerable and easily disturbed, is further exacerbated by conditions in the surrounding environment that do not support them in carrying out their usual activities. The purpose of the study was to determine the effect of the health promotion model through the peer group education method on changes in health behavior intentions in adolescents during the COVID-19 pandemic in Medan City. The research method is a quasi-experimental pretest and post-test design with one control group with a sample of 65 adolescents aged 13-18 years using a purposive sampling technique. Data analysis was carried out using the Paired t-test ( $p = 0.000$ ). The results of the analysis stated that there was an effect of providing education using the peer group education method given to adolescents on changes in adolescent behavior during the COVID-19 pandemic, seen from the aspect of reproductive health, adolescent psychological disorders, and the impact of using gadgets that must be supervised by parents

### Introduction

Coronavirus is a pathogen that attacks human health, especially in the respiratory tract (Rothan & Byrareddy, 2020). Corona Virus Disease (COVID-19) is a highly contagious virus. COVID-19 is a new virus and disease previously unknown before the outbreak in Wuhan, China, in December 2019 (Ren et al., 2020). On March 11, 2020, the World Health Organization (WHO) declared the COVID-19 outbreak a pandemic. COVID-19 is a serious health problem and is a category of severe disease that easily spreads quickly throughout the world (Risidiana et al., 2020). COVID-19 causes a pandemic that makes one world not to be taken lightly. If a positive case is found, the state must immediately detect, treat, isolate, and move it to a safe area. This condition is certainly a challenge for many countries, especially for those who are in one community who must gather together (Chowdhury & Jomo, 2020)

The COVID-19 pandemic also attacks

those who are young or teenagers who cause activity restrictions to be imposed, affect mental stress, and are forced not to carry out activities at home or in limited places. These conditions certainly cause emotional, behavioral, and mental health problems in teenagers. Adolescence is a period of transition or transition from children to adults, which includes mental, emotional, social, and physical maturity. Adolescents experience physical, psychological, and social maturity. Psychologically, adolescence is the age of a person who enters the process of becoming an adult. Adolescence is a period where they no longer feel that they are children and are equal to others around them even though the person is older (Smetana, 2011). Adolescents have a personality that is determined by environmental factors in which they live, whether it supports them to become a better person or even vice versa, adolescents have several changes in their lives. Including physical changes, changes in

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interaction patterns with parents, changes in interaction patterns with peers, changes in an outside perspective, as well as changes in interactions with the school. (Costello et al., 2011)

Emotional and behavioral problems that occur affect children's growth and development and daily life. Impaired cognitive development, learning difficulties because they are unable to concentrate on lessons, poor memory skills, or inappropriate behavior in the school environment will increase the number of delinquency and crime in adulthood (Crnic et al., 2017). During this COVID-19 pandemic, young people are going through a difficult time. Those who can control their emotions will certainly easily face the situation. On the other hand, those who are emotionally unstable will certainly experience greater pressure.

Adolescence is also a period where their mental fluctuates. Therefore, teenagers who are aware of their mental fluctuations will easily overcome their excessive emotions. However, some teenagers cannot control their mental effectively, so they will easily suffer from depression, and emotional (irritability), further affecting academic difficulties, drug abuse, and juvenile delinquency (Permatasari et al., 2021). The effect of COVID-19 has also hit education worldwide. According to the UNESCO website, the coronavirus pandemic was threatening 577 million students in the world. It was also stated that 39 countries implemented school closures, with a total number of affected students reaching 421,388,462 children.

The total number of potentially at-risk students from pre-primary to senior secondary education is 577,305,660. Meanwhile, the number of students potentially at risk from higher education is 86,034,287 people. In Indonesia, several campuses and schools have started implementing policies for remote teaching and learning activities or online lectures. This condition makes students "forced" to study at home, where most of them are not used to doing this. In the short term, this is certainly not a problem. But in the long term, it will make children bored and depressed, so that it causes children to have mental health problems, ranging from anxiety to cases of stress and depression (Purwanto et al., 2020)

Stress that appears in teenagers during the COVID-19 pandemic can in the form of fear and anxiety about their health and the health of those closest to them, changing sleep/eating patterns, difficulty concentrating, to using drugs/drugs.

The psychological condition of adolescents, who are generally still vulnerable and easily disturbed, is further exacerbated by conditions in the surrounding environment that do not support them in carrying out their usual activities. Especially with the current situation, which requires the child to be able to act according to existing conditions and rules and they are not free to do something that is their habit to do outside the home (Peris et al., 2020). Adolescents need a health service, one of which is good and correct health education. Health education obtained from peers or peer groups. Health education would be better if given directly in schools through their peers. Peers can be more effective and open in providing health education so that communication will be established more easily, compared to education carried out by parents and teachers. Peer health education is one form of health promotion to reduce the risk of poor health. The method used is communication and discussion by friends of the same age or called peer group educators who have passed the training process and provided information. Peer group educators play a vital role in conducting health education. Peacock not only provides information obtained during training but also becomes a real example for other friends (Galante et al., 2021). Through peer group education, it is hoped that there will be changes in the health behavior intentions of adolescents during the COVID-19 pandemic

### Method

This research method uses a Quasi-Experiment research design Pretest and posttest with one control group with a sample of 65 adolescents aged, 13-18 years with a sampling technique using purposive sampling. This research was conducted using the SIMFOEDUTEEN application which is one of the platforms used as a medium for providing education to adolescents about health problems and how to handle them during the COVID-19 pandemic. This study uses a questionnaire for

adolescent reproductive health knowledge consisting of 15 statements with an ordinal scale (yes = 2) and (no = 1), a questionnaire on the psychological influence of children during the COVID-19 pandemic which consists of 15 statements using a Likert scale (never = 4). Sometimes=3, Often=2, Always=1). The questionnaire on the impact of using gadgets during the COVID-19 pandemic consisted of 15 statements using a Likert scale (Never = 4., Sometimes = 3, Often = 2, Always = 1). The questionnaire has been tested for content validity by Lecturers with Community Nursing knowledge, the results of the instrument reliability test using Cronbach's Alpha with a value > 0.632, and the test results state that the questionnaire is reliable. This research has

been approved by the Health Research Ethics Committee of the USU Faculty of Nursing Number: 2326/IV/SP/2021.

### Result and Discussion

Based on the parent's occupation category, the type of work is self-employed (47%), and not working (4.5%). Out of the education of parents, the highest level of education is at the high school level (57.6%), teenagers get pocket money every week in the range of 20,000-50,000 (47.0%), related to the duration of playing Gadget teenagers spend the most time on 2-8 hours (67.9%), adolescents had received health information during the pandemic, from the internet (43.9%).

TABLE 1. Frequency Distribution of Adolescent Data Based on Characteristics of Respondents

Characteristics of Respondent	Frequency (f)	Percentage (%)
<b>Parents Job</b>		
Self-employed	31	47,0
Employee	14	21,2
Governances' employee	11	16,7
Laborer	7	10,6
Not a worker	2	4,5
<b>Parental Education</b>		
Primary School	4	6,1
Junior High School	7	10,6
Senior High School	38	57,6
Collage	23	14,6
<b>Pocket Money per week</b>		
< Rp.20.000	18	27,3
Rp. 20.000-50.000	30	47,0
>Rp.50,000	17	25,8
<b>Durating of playing mobile phone</b>		
<2 hours	10	15,2
2-8 hours	45	67,9
>8 hours	10	15,2
<b>Health Information</b>		
Health Workers	7	12,1
Internet	29	43,9
Television	3	4,5
Mass media/Magazine	5	7,6
Families	2	3,0
No Information	19	28,8
Total	64	100

Source: Primary Data, 2021

TABLE 2. Distribution, Frequency and Effect of Reproductive Health Knowledge Before and After Health Promotion Through Peer Group Education

Knowledge Reproduction health	Pretest		Posttest		P Value
	f	%	f	%	
Good Influence	14	21,5	45	69,2	0,000
Quite Influential	45	69,2	18	27,7	
Bad luck	6	9,2	2	31,1	

Source: Primary Data, 2021

TABLE 3. Distribution, Frequency and Psychological Influence of Adolescents During the COVID 19 Pandemic Before and After Health Promotion Through Peer Group Education

Impact of using Gadgets	Pretest		Posttest		P Value
	f	%	f	%	
Good Impact	54	83,1	65	100	0,000
Adverse effects	7	10,8			
No impact	4	6,2			

Source: Primary Data, 2021

Entrenched the psychological influence during the pandemic before giving education on the use of a pretest with a good influence (21.5%) quite influential (69.2%), and a bad influence (9.2%), after being given education on the psychological influence of adolescents with a good influence (21, 5%), moderately influential (27.7%) and bad effect (3.1%). Analysis of the data using the paired sample t-test results obtained a p-value of 0.000. So it can be concluded that there is an effect of psychological changes on children during the COVID-19 pandemic.

Made from the impact of using gadgets on teenagers during the COVID-19 pandemic before being given education using Simfoeduteen Prototype App with a good impact (83.1%), a bad impact (10.8%), and no impact (6.2%). And after being given education, there was a change in the category of good impact (100%). Analysis of the data using the paired sample t-test, the results obtained a p-value of 0.000. So, it is concluded that there is an impact of using gadgets on children during the COVID-19 pandemic. Adolescents are not a group of people who are always healthy, many risky behaviors can affect adolescent health, including growth and development, nutritional problems, reproductive health, drug abuse, and HIV/AIDS. Health education is an effort to create public behavior that is conducive to health. The vision and mission of adolescent reproductive health education will also determine the extent to which the effectiveness

of these activities can be achieved (Vincent & Krishnakumar, 2022). Peer education is a common strategy to prevent HIV and promote health worldwide (Medley et al., 2009) and usually involves recruiting members of specific at-risk groups to encourage members to change risky sexual behavior and maintain healthy sexual behavior. What distinguishes peer education from mass media programs is that there is more interpersonal interaction in two directions (Webel, 2010). Peers are much more likely to influence the behavior of fellow group members as they are perceived to be able to gain a level of trust, which allows for more open discussions on sensitive topics (Simoni et al., 2011 and Murrell et al., 2021). They also have better access to hidden nest populations that may have limited interaction with traditional health programs (Yan et al., 2014). Finally, they are cost-effective compared to traditional healthcare providers (Bagnall et al., 2015 and Chola et al., 2011).

The peer educator method is more effective than giving modules in improving the attitudes of junior high school students in Samarinda City in preventing pornography. government institutions related to the health sector and junior secondary education institutions can improve health promotion in their institutions by delivering narcolema prevention through this peer educator method, by supporting and facilitating various peer educator activities, training and creating narcolema prevention volunteers in every

educational institution (Nurmala et al., 2020). The effectiveness of peer education as a form of prevention and intervention program, especially related to adolescent reproductive health, has been studied in previous studies. The effectiveness of peer education intervention in sexual health education in adolescents. It was found that although there is no real evidence that proves that peer education can reduce pregnancy in adolescents or other behavioral problems related to adolescent reproductive health (Kim & Free, 2008). In another study, it was stated that peer education can change or improve the behavior of pulmonary TB patients toward preventing pulmonary TB transmission. Peer education is an approach to health promotion and a method of learning and sharing health information (Violita & Hadi, 2019). Various studies have shown that peer education methods can increase the assertiveness of female participants not to have sexual intercourse before marriage, as well as peer education can also increase the knowledge, attitudes, and intentions of adolescents toward reproductive health (Stephenson et al., 2008). Ayu et al., 2019 also agree that peer education has a significant effect on premarital sex behavior in adolescent students in the city of Yogyakarta. In addition to peer education, knowledge, attitudes, self-esteem, and sources of information also have an effect. Psychological disorders are also a problem for young people, especially during the COVID-19 pandemic. The extent of the impact of COVID-19 depends on several factors of children's vulnerability, such as age, development, educational status, pre-existing mental health conditions, and the lack of ability of parents economically, scared and quarantined because of infection. Studies show that adolescents show more loneliness, experience sleep disturbances, experience nightmares, decrease appetite, receive less attention from parents, and have separation problems with peers and also with the environment (Singh et al., 2020).

A healthy psychological/ mental condition is a condition in which an individual lives in prosperity, can recognize his potential, can face everyday pressures, and can contribute to his social environment (Al-Noimi & Ibrahim, 2021). COVID-19 has had a psychological

impact on teenagers because they have not been able to deal with everything easily. Various forms of changes that are happening today due to COVID-19 have an impact on all aspects of adolescent development, such as running online/online classes, not being able to meet friends for a while, playing games, playing gadgets more often, changes in the routines of their parents who work at home (WFH) also affects the daily life of teenagers. These changes make them unable to stop themselves from continuing to think irrationally and become stressed. They cry easily, get angry, behave unusually, and often lock themselves in the room to vent their boredom, easily worry about something, are not calm when doing things and keep thinking that something bad will happen around them, experience sleep disturbances, loss of feeling confident, tired quickly and no longer interested in doing what he likes (Yeasmin et al., 2020). The mental/psychological health disorder felt as a teenager during the COVID-19 pandemic is due to a new rule that requires regulating social distancing and social isolation. Adolescents resistant to development will easily experience a sense of stress that has a negative impact, such as depression, and anxiety (Marques de Miranda et al., 2020). The COVID-19 pandemic has affected the use of gadgets by teenagers where the state of keeping distance and reducing the frequency outside the home, such as doing learning activities at home (online) affects the learning process and teaching children at school. The learning process carried out at home for a long time has a significant psychological effect on students (Irawan et al., 2020). The learning process at home makes children interact more often with gadgets because of online learning. It brings up concern that the increasing intensity of gadget use will increase the rate of gadget addiction. Gadget addiction can increase the prevalence of the risk of attention deficit disorder and hyperactivity. In addition, gadget addiction can also affect the release of the excessive dopamine hormone, causing a decrease in the maturity of the Pre-Frontal Cortex (PFC) (Paturel, 2014). Effects of Gadget Use Next to make children addicted, which means an uncomfortable feeling will appear when not using a gadget (Kamtini et al., 2019). School-age children who

use gadgets for at least 2 hours but continuously every day can affect child psychology, for example, children become addicted to playing with gadgets from in carrying out activities that should be learning. The effects of gadget usage on children's behavior from the aspect of tolerance are quite large. More than half of children never spend time just using gadgets. The usage is categorized as high intensity if you use it for more than 120 minutes/day, and in one use, it is around > 75 minutes. In addition, in a day repeatedly (more than 3 times) using gadget for 30-75 minutes will cause addiction to gadget usage (Setiawati et al., 2019). In addition, moderate intensity use of gadget is included in the category of using gadgets with a duration of more than 40-60 minutes/day and the intensity of use in one use 2-3 times/day for each use. The high-intensity gadget usage has a negative impact (Keumala et al., 2018).

Excessive use of gadgets in adolescents will have a negative impact because it can reduce concentration power and increase children's dependence on be able to do various things that they should be able to do on their own. Another impact is the increasingly open internet access in gadgets that display everything that should not be seen by children (Hernández-Ramos, 2010). Intense and continuous use of gadgets will significantly affect adolescent communication behavior so that it has an impact on children's psychology, especially the crisis of confidence and physical development (Yuniati et al., 2015).

### Conclusion

Teenagers will certainly experience a change in their life patterns, so they need knowledge of themselves. Especially reproductive health issues, which are other important parts of teenagers, during the COVID-19 pandemic, teenagers are expected to be able to control themselves by preventing adolescent psychological disorders, especially During the COVID-19 pandemic and the regulation on the use of gadgets. It will have a negative impact if it is not supervised by parents.

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