



The effectiveness of health education course review horay learning method on child behavior changes to impact the prevention of smartphone addiction

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Abstract

Using smartphones at an early age as a child school age, has a lot of adverse effects on children's health and development. The purpose of this study was to determine the effectiveness of health education using the Course Review Horay (CRH) learning method on changes the children's behavior as an effort to prevent the impact of smartphone addiction. This study used an experimental research design with a quasi-experiment method using a pre-post test control group design. Respondents in this study were 9-12 years old school children. The total sample of 50 respondents used a simple random sampling technique. The independent variable was health education with the Course Review Horay learning method, and the dependent variable was knowledge, attitudes, and actions. The instrument used a questionnaire. Data were analyzed using the Wilcoxon Signed Rank Test and the Mann Whitney test with a significance level of $p < 0.05$. The result of this study showed that the Review Horay Course learning methods on knowledge ($p = 0.000$) and attitudes ($p = 0.000$). In addition, this study also showed there were differences in behavior between treatment and control groups towards knowledge ($p = 0.001$), attitudes ($p = 0.000$) and actions ($p = 0.000$). Health education Course Review Horay learning methods can increase the level of knowledge, attitudes, and actions of children in preventing the impact of smartphone addiction. this study also showed there were differences in behavior between treatment and control groups towards knowledge ($p = 0.001$), attitudes ($p = 0.000$) and actions ($p = 0.000$). Health education Course Review Horay learning methods can increase the level of knowledge, attitudes, and actions of children in preventing the impact of smartphone addiction. this study also showed there were differences in behavior between treatment and control groups towards knowledge ($p = 0.001$), attitudes ($p = 0.000$) and actions ($p = 0.000$). Health education Course Review Horay learning methods can increase the level of knowledge, attitudes, and actions of children in preventing the impact of smartphone addiction.

Keywords: children, course review horay, health education, smartphone addiction

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INTRODUCTION

The use of smartphones at this time is very broad, and almost everyone has it. There is even a tendency for the age level of users to decrease (Arthy et al., 2019). The American and Canadian Medical Association stated that the normal intensity of smartphone usage for children aged 6-18 years is a maximum of 2 hours per day (Lo et al., 2012). The intensity of excessive smartphone use can indicate addiction (Fadzil et al., 2016; Simsek et al., 2019; Erol and Cirak, 2019; Mejia et al., 2019; Tabachuk et al., 2018; Toto, 2019). Smartphones are equipped with various interesting features that are the entry point for children who are in the age of curiosity to access something that is not yet appropriate for their age. This results in children becoming dependent, so they don't know the time to use

smartphones (Fauzi Aet al., 2020). The use of smartphones at an earlier age actually has more negative impacts on children, both direct and long-term impacts (Ariatama et al., 2019). Statistics show that the number of smartphone users worldwide is expected to exceed 5 billion in 2019. This number continues to grow from the figure of 2.1 billion in 2016 to 2.5 billion in 2019 (Brotankova et al., 2015). Digital marketing research institute eMarketer said in the last five years in Indonesia, smartphone users grew from 38.3 million in 2014, growing to 52.2 million, 69.4 million, 86.6 million, and penetrating 103 million in the year 2018. Java has a

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presentation of 80.6%, with users of the 9-19 age group 65.34% (Kasim, 2017).

The results of oral interviews in March 2019 showed that the majority of them were active smartphone users with various duration of usage. The 91% of 40 children and 92% of 30 grade 4 and 5 children have used smartphones. The duration of the use is known to be more than 83% of children using smartphones for more than 2 hours of use. Most of them use smartphones to play games and socialize media. Almost all of them do not know the adverse effects of smartphones, especially for health, they only understand how smartphones can be used as a medium of playing and accessing social media. The results of interviews with researchers of school educators, there is no further anticipation related to this. The duration of smartphone use that is done every day can make children develop antisocial personal direction. This also has the potential to encourage children to think in short, time to be together directly will be reduced because the time taken to enjoy the smartphone in solitude (Husna et al., 2020). The use of smartphones can also disrupt sleep, trigger anxiety, weaken the brain, wasteful lifestyle, easy-going, and others. Smartphone also has an impact on a child's motor development (Masruri, 2012). One of the factors that influence the motor development of elementary school students is the length of time a child knows and the length of use of a smartphone every day (Octaviana et al., 2014). The use of smartphones at an earlier age will cause a greater degree of dependence. Someone who experiences addiction or dependence, structure, and function of the brain will change, especially the cognitive center (prefrontal cortex). Disorders of the brain cause people who experience a dependency or addiction will lose some of the ability of the brain, including the attention function (focusing on something), executive function (planning and taking action), and inhibitory function (ability to limit). An effort is needed to change a child's behavior about the dangers of the effects of excessive smartphone use. Preventive efforts are a top priority for reducing the incidence of illness. The form of activities in this preventive field is in the form of health education (Notoatmodjo, 2010).

Course Review Horay (CRH) is one of the cooperative learning models that are fun and can improve students' ability to compete positively in learning, develop students' critical thinking skills and help students remember concepts that they have learned easily. This is in accordance with the cognitive and intellectual development of school-age children were in this development children have shown the nature of thinking real, logical, and can solve problems concretely. CRH can encourage students to be able to plunge into learning situations that are not monotonous because of the game so that learning is very suitable for school-age children because interesting learning makes students more enthusiastic about learning (Suprijono,

2010). Based on this background, the researcher was interested in conducting research by applying Course Review Horay learning methods to analyze their effects on changes in children's behavior in preventing the effects of smartphone addiction.

METHODS

The research design used in this study was quasi-experimental, using a pre-post test control group design. The population in this study was school-age children (9-12 years) in one elementary school in Nganjuk, consisting of 60 people. The sample used was children aged 9-12 years who met the inclusion criteria using smart phone ≥ 2 hours per day. The sample size used a paired numerical categorical analytic research formula from Sopiudin Dahlan, which obtained a total sample of 25 respondents in the treatment group and 25 respondents in the control group so that the total sample was 50 respondents. The sampling technique used probability sampling with a simple random sampling technique. There were two types of variables studied, namely, the independent variable was the health education learning method Course Review Horay and the dependent variable, namely knowledge, attitudes, and actions. The instruments used in this study include the Activity Unit and the knowledge questionnaire, attitude, and action observation sheet. The questionnaire was tested for validity, and all items were declared valid, and for the reliability test, it showed that all the questionnaires were reliable, which showed a Cronbach alpha coefficient of 0.753 (knowledge, 0.753 (attitude) and 0.756 (action observation sheet). The researcher used the Wilcoxon Signed Rank statistical test and Mann Whitney U Test.

Respondents were divided into two groups, namely treatment and control groups, each group was given a pre-test questionnaire (knowledge and attitude) and post-test questionnaire (knowledge, attitude, and action). The intervention given was about smartphone addiction and its psychological and physical impact using the Course Review Horay learning method in the treatment group and intervention about smartphone addiction and its psychological and physical impact with lectures method in the control group. This study has been declared to have passed an ethical test by the Health Research Ethics Committee of the Faculty of Nursing Airlangga University with number:1505-KEPK.

RESULTS

Table 1 shows the distribution of demographic characteristics of respondents by age in the treatment and control groups that almost half the respondents were 12 years old, each group was ten respondents (40%). The distribution of responsiveness by gender shows that the majority were males in the treatment

Table 1. The distribution of demographic characteristics of the treatment group and control group respondents

Characteristics of respondents	Category	Treatment group		Control group		Total	%
		n	%	n	%		
Age	9 years old	1	4	0	0	1	2
	10 years old	5	20	7	28	12	24
	11 years old	9	36	8	32	17	34
	12 years old	10	40	10	40	20	40
	Total	25	100	25	100	50	100
Gender	Female	12	48	10	40	22	44
	Male	13	52	15	60	28	56
Total		25	100	25	100	50	100

Table 2. The distribution of respondents' knowledge level on efforts to prevent the effects of Smartphone Addiction

Knowledge Level Category	Treatment group				Control group			
	Pre Test		Post Test		Pre Test		Post Test	
	n	%	n	%	n	%	n	%
Good	0	0	20	80	0	0	0	0
Enough	1	4	5	20	0	0	0	0
Less	24	96	0	0	25	100	25	100
Total	25	100	25	100	25	100	25	100
Levene Test					p = 0.743			
Wilcoxon Test	p < 0.001				p = 0.072			
Mann Whitney Test					post-test p = 0.001			

Table 3. The distribution of the level of the respondent's attitude towards efforts to prevent the impact of smartphone addiction

Attitude Level Category	Treatment group				Control group			
	Pre Test		Post Test		Pre Test		Post Test	
	n	%	n	%	n	%	n	%
Positive	4	16	22	88	8	32	15	60
Negative	21	84	3	12	17	68	10	40
Total	25	100	25	100	25	100	25	100
Levene Test					p = 0.501			
Wilcoxon Test	p < 0.001				p < 0.001			
Mann Whitney Test					post-test p = 0.001			

group of 13 (52%) respondents and in the control group as many as 15 (60%) respondents.

Table 2 shows the distribution of respondents' knowledge levels in the treatment and control groups. Wilcoxon Signed-Rank Test statistic test in the treatment group before and after the CRH method of health education was given showed a value of $p < 0.001$ ($p < 0.05$), which means that there is an influence of CRH learning method health education on respondents' knowledge in preventing the impact of smartphone addiction before and after the intervention is given. Mann Whitney statistical test shows the results between the treatment group and the control group after being given health education shows the value of $p = 0.001$ ($p < 0.05$), which means that there are differences in the level of knowledge between the treatment groups that are given intervention in the Course Review Horay learning method. With a control group that did not get the intervention of the Course Review Horay learning method. Homogeneity test results using the Levene Test showed a significance value of 0.743 (> 0.05), which means the distribution of pre-test knowledge data is homogeneous.

Table 3 shows the distribution of the level of attitude of respondents in the treatment group and the control group. The attitude level consists of two categories, positive and negative. Wilcoxon Signed-Rank Test statistic test in the treatment group before and after the

CRH method of health education was given showed a value of $p < 0.001$ ($p < 0.05$), which means that there is an influence of CRH learning method health education on respondent attitudes in efforts to prevent the impact of smartphone addiction before and after the intervention is given. Mann Whitney statistical test between the treatment group and the control group after being given health education showed a value of $p = 0.001$ ($p < 0.05$), which means that there is a difference in the level of attitude between the treatment group given the CRH learning method intervention and the treatment group that did not get the CRH learning method intervention. Homogeneity test results using the Levene Test showed a significance value of 0.501 (> 0.05), which means that the pre-test attitude data distribution was homogeneous.

Table 4 shows the distribution of the level of the respondent's actions in the treatment and control groups. The level of action consists of three categories, namely good, enough, and less. The Mann Whitney U statistic test on the post-test action variables in the treatment and control groups showed that $p = 0.000$ ($p < 0.05$), which means that there were significant differences in the level of activity between the treatment group and the control group. The homogeneity test with the Levene Test shows the significant value of 0.013 (< 0.05), it can be concluded that the distribution of post-test data is not homogeneous.

Table 4. Distribution of post-test questionnaire observation of the actions of respondents on efforts to prevent the impact of smartphone addiction

Action Level Category	Treatment group		Control group	
	n	%	n	%
Good	18	72	6	24
Enough	6	24	14	56
Less	1	4	5	20
Total	25	100	25	100

Mann Whitney Test p = 0,000

DISCUSSION

The Course Review Horay (CRH) learning method influences on increasing children's knowledge in efforts to prevent the effects of smartphone addiction. The level of knowledge of respondents in the treatment group at the time of the pre-test was mostly in the poor category, namely 24 (96%) respondents. The results of the post-test level of knowledge showed a significant increase in almost all respondents in the good category, namely as many as 20 (80%) respondents, and none in the category of lack of knowledge. While the level of knowledge in the control group at the time of the pre-test all respondents was in the category of lacking as many as 25 (100%) respondents, and after a post-test, the results were none of the respondents showed changes in the level of knowledge categories (Yuliana, 2015).

School-age children are the stages of development where children are in the stage of developing their ability to interact socially, learn about moral values, culture, and develop self-concepts and skills in learning (Alimul Hidayat, 2005). Cognitive and intellectual development in school-age children is at a concrete stage with the ability to see realistically. Children begin to show a logical nature and are able to solve problems concretely (Hurlock, 2012). The theory of cognitive development from Piaget also explained that school-age children had begun to develop towards concrete operations and were able to use adequate logic. The results of this study are consistent with research that has been conducted that discusses the influence of CRH learning methods in increasing interest in learning at school age. Research conducted by Anita Yulia in 2016 revealed that the CRH learning method affected student learning activities and interests between the treatment group and the control group (Anita, 2016). Other research also revealed that there were differences in learning outcomes between groups of grade 4 students using the CRH learning method and groups of students learning with conventional learning methods (Payani et al., 2018).

The effect of health education with CRH learning methods is an alternative one way that can change behavior through increased knowledge in children to prevent the impact of smartphone addiction. The CRH method of health education can apply knowledge about the impact of smartphone addiction so that it can be received through attitudes and actions that are expected

to be an effort to prevent health problems in children. CRH can develop students' critical thinking skills and help students to remember the concepts of material that they have learned easily. Besides, CRH can also change the atmosphere of learning in the classroom with more fun so that students are more interested in learning.

Increased knowledge in children can instill a cautious attitude that can foster behavior change in children in an effort to prevent the effects of smartphone addiction (Erni Yeti et al., 2018). In accordance with a theory that reveals that the level of knowledge can increase well if the stimulus provided is well-received (Notoatmodjo, 2007). Knowledge about smartphone addiction obtained through CRH learning methods in health education can provide information for respondents who can shape behavior and self-awareness in efforts to prevent the effects of smartphone addiction.

Course Review Horay (CRH) learning methods influences on improving children's attitudes in efforts to prevent the effects of smartphone addiction. The attitude value of respondents after being given health education with the CRH learning method has increased because respondents are children in the 9-12 years age category, which according to development theory, has been able to capture all the positive things they get. This is consistent with Piaget's cognitive theory which explains that school-age children have begun to develop towards concrete operations and are able to use adequate logic. So, when the knowledge obtained is deemed sufficient, the emotional will react with the stimulus provided.

Attitude is a reaction or response from someone who still has not been shown to the stimulus that comes (Notoatmodjo, 2012). An attitude is a form of personal evaluation or a person's feelings towards an object. It can be in the form of feelings of support (favorable) or reject (unfavorable) on the object or stimulus (Azwar, 2007). Bloom revealed that attitudes will be able to change when someone is able to change the cognitive component. The result data in this study indicate that there is an increase in knowledge then influences the attitude improvement of the respondents. Green in 1991 in his behavior theory revealed that health education could influence predisposing factors including attitudes which can lead to changes in behavior (Nursalam, 2013). The more positive attitude values of an object that are known will foster an increasingly positive attitude towards the object (Wahyuni et al., 2018).

Submission of new information through health education with the CRH learning method is able to provide a new cognitive foundation for the formation of respondents' attitudes in an effort to prevent the impact of smartphone addiction so that there can be an increase in the attitude value of respondents in the treatment group. Health education using the CRH learning method is expected to be able to build trust so that respondents have a positive attitude in healthy behavior.

Respondents who have negative attitudes are able to change attitudes into positive ones after being given an intervention by delivering clear information so that it is able to influence the respondent's emotions.

The Course Review Horay (CRH) learning method influences on increasing children's actions to prevent the impact of smartphone addiction. The formation of actions on a person occurs because of the knowledge or cognitive that becomes an important domain (Notoatmodjo, 2010). Behavior that is based on good knowledge will be more felt than behavior that is not based on prior knowledge. The control group respondents in this study were not given intervention with the CRH learning method, so respondents did not get information about efforts to prevent the effects of smartphone addiction optimally. According to Roy, the behavior adaptation process goes through four stages, namely input, control processes, effector, and output (Jennings, 2017).

Bloom revealed that changes in a person's behavior can be known from the cognitive domain. It can be measured by increasing knowledge. The affective domains that are measured in terms of attitude. The psychomotor domains that can be measured in terms of psychomotor practice (actions). The changes in inconsistent behavior can occur if knowledge and practice can be maintained properly (Upasche and Mekonnen, 2015). Respondents in the treatment and control group are children aged 9-12 years according to age are able to capture all the positive things they get.

Education plays an important role in changing one's behavior to be more positive. Green in 1991 in his behavior theory revealed that health education could influence predisposing factors, one of which is the practice (Nursalam, 2013). Good cognitive abilities can improve the thinking process so that the treatment group who received the CRH method has increased knowledge. This can affect the response of respondents, so it can be concluded that health education with CRH learning methods about efforts to prevent the impact of smartphone addiction is more effective in behavior change in preventing addiction than just the lecture method.

A significant increase in knowledge through health education programs can produce positive actions. This is consistent with the theory that health education provided can improve cognitive, affective, and psychomotor domains (Hidayanty et al., 2016). Significant difference values in the treatment group against the control group occurred because of the existence of health education using the CRH learning method. It was also supported because previously, the

treatment group had increased in terms of the level of knowledge and the level of attitude so that it could stimulate stimulus to make changes in behavior better than the control group who did not get health education intervention CRH learning methods. Changes in behavior that occur require a process. Changes in knowledge and a good attitude will provide emotional stimulus changes in good behavior as well.

A significant increase in knowledge through health education programs can produce positive action. This is consistent with the theory that education enhances cognitive, affective, and psychomotor aspects (Hidayanty et al., 2016). Significant differences in the training group against the control group occurred because of education using the CRH learning method could stimulate stimulus to make changes in behavior. Changes that occur require a process. Changes in knowledge and a good attitude will provide emotional stimulus in good behavior.

CONCLUSION

There is an effect of providing health education Course Review Horay learning methods on increasing children's knowledge to prevent the impact of smartphone addiction. There is an effect of providing health education Course Review Horay learning methods on changes in children's attitudes to prevent the impact of smartphone addiction. There is an effect of providing health education Course Review Horay learning methods on children's actions to prevent the impact of smartphone addiction. Course Review Horay (CRH) learning methods in efforts to prevent the impact of smartphone addiction can be used as an alternative learning media for the delivery of health information because it has been proven to increase knowledge, change attitudes and improve action applications. Information that has been obtained through the Course Review Horay learning method regarding efforts to prevent the impact of smartphone addiction can be applied in everyday life. The Course Review Horay learning method can be used as a medium for delivering information that can motivate and can improve knowledge, attitudes, and application of measures to prevent the effects of smartphone addiction on school-age children, due to learning methods that contain games. Further research is needed regarding the use of games in the Course Review Horay learning method as one of the methods and media of health education that can be applied in the environment following the characteristics of school-age children.

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