

The Think Pair Share (TPS) Learning Model in the Behavior of Healthy School Snack Selection of School Age Children

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Abstract: School-aged children have a street snacks consumption behavior. They do not know the ingredients of hazardous materials that are usually found in their street snacks. The Think Pair Share (TPS) is an active learning that usually used in a learning process to increase knowledge. Therefore, the purpose of this study was to explain the effect of TPS learning model to increase school-aged children's healthy snack consumption behavior. The study used quasi experimental design. The populations were five graders student in elementary school. The samples were 46 students that taken by total sampling. The independent variable was thought pair share learning model and the dependent was knowledge, attitude, and actions. Data were collected by using questionnaire and observation form. Data analyzed by using Wilcoxon Signed Rank Test and Mann Whitney U Test with a significant level of 0.05. The results of intervention group show that TPS had a significant effect on knowledge ($p=0.002$) and actions ($p=0.034$), but had not the significant effect in attitude ($p=0.705$). Think pair share learning model is effective to improve the behavior election in a healthy snack for school-aged children. It is recommended for nurses to apply the think pair share to providing health education to school-aged children.

1 INTRODUCTION

School-aged children have a habit of buying snacks, at this time they consider themselves to be self-sufficient so that they more often consume snacks outside the home (Brown, 2005). The student often buys a snack that they love, which has less nutritional content (Sjahmien, 2003) (Krisnana, Ilya; Kristiawati, kristiawati; Rachmawati, Praba Diyan; Kurnia, Iqlima Dwi; Arief, Yuni Sufyanti; Quraniati, 2016). In school or around the school selling a lot of unhealthy snacks (DeWeese and Ohri-Vachaspati, 2017). School-age children buy snacks according to their favorite course without thinking about the ingredients contained in it (Judarwanto, 2008).

In 2012, the Food and Drug Supervisory Agency (BPOM) Surabaya has examined 492 samples of School Food Snack and stated that in the last five years, 2006 to 2010, School Food Snack is not eligible ranging from 40% -44% this is because it contains hazardous substances that are prohibited to be used for food such as formalin, borax, rhodamine B and methanol yellow dyes (Badan POM RI, 2012).

According to the Commissioner of the Indonesia Child Protection Commission (KPAI) in 2015 revealed that school-aged children are very vulnerable to cancer, such as triggered by environment and unhealthy school snacks. In Indonesia, the number of children exposed to cancer is high, each year is culled about 4,100 new cases of cancer in children one of them caused by unhealthy school snacks because of dangerous chemical content in it (Rachmawati, Ranuh and Arief, 2016).

The results of the previous research indicate that snacks selected by school-age children are unhealthy snacks high in sugar, fat, and salt, school-age children choose snacks based on taste without knowing the quality of snacks (Oogarah-Pratap and Heerah-Booluck, 2005). Children can not choose healthy foods well (Adams and Savage, 2017). The Result of observations and interviews by the researcher in one of the primary schools in Surabaya showed that 326 students (77.8%) claimed to buy street snack outside a school and most students had unhealthy snacking behavior such as buying snacks with striking sauce colors, bright red color, brightly colored beverages, and instant noodles. This Data similar with research

that school-age children have not been able to choose the types of foods that are useful and tend to choose snacks that attract their attention as the color is striking, the various flavors and colors, the taste is sweet and tasty and most importantly the price is affordable (Aprillia, 2011).

Some previous studies only discuss types of unhealthy snacks consumed by school-aged children. The need for further research on interventions to address the problem of unhealthy snack consumption behavior of school-age children. One effort to prevent that problem such is by applying health education on the selection of healthy snacks in school-aged children. The higher the level of knowledge possessed then a child will be easier to behave healthy life (Notoatmojo, 2007). Increasing health knowledge about healthy food snack selection with appropriate cooperative learning model is expected to improve and maintain nutritional status of school children. Think Pair and Share (TPS) learning model is one of the active learning models which put students in pairs and exchanged opinions to complete academic and non-academic tasks through three stages: Think (Think), Pair (pair), and Share (share) (Marlina, Hajidin, 2014). This learning model is appropriate to be applied to school-aged children (7-11 years) because this age is already plausible and logical, they are able to classify, sort, compile, and organize facts to solve a problem (Wong, D.L., Hokenberry-eaton, M., Wilson, D., Winkelstein, M. L., Schwartz, 2010). In today's world, there is much evidence that the quality of learning will increase if student follows the learning process and gain wide opportunities to ask questions, discuss, and actively use newly acquired knowledge. This current study aims to explain the effect of TPS learning model to knowledge, attitude, and action of healthy snack election in school-age children.

2 METHOD

This study used two groups of pre-post test designs, The affordable population in this research is the elementary school student in Surabaya.

This research uses sampling technique in total sampling. The researchers classified the sample consisting of the control group and the treatment group. Independent variable in this research is health education through Think Pair Share (TPS) model in 5th graders student. Variable dependent variable in this research is knowledge, attitude, and action of the healthy snack election.

Measuring tool for knowledge and attitude in the form of questioner with while action using observation sheet. The collected data were then analyzed using Wilcoxon signed rank test with significance level $<0,05$ and by using Mann Whitney U Test (comparative test of 2 independent / independent samples) to find out the difference of control group result and treatment with trust level 0.05.

3 RESULTS

Respondents in this study mostly carried a pocket money of 2000 IDR-5000 IDR in the treatment group (73.91%) and 2000 IDR-5000 IDR in the control group (60.87%). 100% of respondents have received previous information about snacks. The age of respondents was 11 years old in the treatment group (69.56%) and most of the 11 years in the control group (73.91%). Information on snacks in the treatment group had the same amount sourced from the teachers (34.78%) and the media (34.78%), while the control group was mostly obtained from teachers (60%) (table 1).

The results of statistical tests using Wilcoxon signed rank test sig (2-tailed) value is $p = 0.002$ means $p < (0.05)$ then H1 is accepted meaning that the TPS learning model influences the knowledge of healthy snack consumption in school-age children where there is an increased knowledge on treatment groups after intervention. In the control group obtained statistical test results using Wilcoxon signed rank test sig value (2-tailed) is $p = 0.257$ means $p > (0.05)$ then H1 has rejected means that the TPS learning model does not affect the consumption of healthy snacks in school-aged children, knowledge in the control group (table 2).

Table 1: Characteristic of Respondent in the treatment group and control group.

Characteristic of Respondent	Intervention Group		Control Group	
	f	%	f	%
Pocket Money				
2000 IDR	0	0	0	0
2000 IDR- 5000 IDR	17	73.91	14	60.87
6000 IDR - 10.000 IDR	4	17.39	7	30.43
>10.000 IDR	2	8.70	2	8.70
Previous Information				
Ever	23	100	23	100
Never	0	0	0	0
Age				
10 years old	7	30.43	6	26.08
11 years old	16	69.56	17	73.91
Resources				
Parent	5	21.74	3	13.04
Teacher	8	34.78	14	60
Peer	-	0	-	0
Media	8	34.78	2	8.69
Parent and Teacher	-	0	2	8.69
Parent and Media	2	8.69	-	0
Parent, teacher and Media	-	0	2	8.69

The result of test Wilcoxon signed rank test in the treatment group is p-value = 0.705 means $p > \alpha$ then H_1 is rejected which means that TPS learning model does not affect the change of attitude of healthy snack consumption in school-aged children, where the TPS learning model does not improve attitude children about healthy snacks in the treatment group. In the control group obtained statistical test results using Wilcoxon signed rank test obtained results $p = 1,000$ means $p > \alpha$ then H_1 is rejected means the TPS learning model does not affect the changes in consumption attitude of healthy snacks at school-aged children, which were the TPS learning model also does not increase attitude about healthy snacks in the control group (table 3).

The result of a test of Wilcoxon signed rank test with $p = 0,034$ meaning $p < \alpha$ then H_1 is accepted, meaning that TPS learning model influence to change of action of healthy snack consumption at a school-age child, where a model of TPS learning can increase child action about snack election healthy in the treatment group. In the control group obtained statistical test results using.

Table 2: Healthy snack knowledge before and after TPS learning in the treatment group and control group.

Knowledge	Intervention group				Control group			
	Pre intervensi		Post intervensi		Pre intervensi		Post intervensi	
	f	%	f	%	f	%	f	%
Good	0	0	5	21.7	0	0	0	0
Enough	9	39.1	13	56.5	10	43.5	7	30.4
Less	1	60.8	5	21.7	13	56.5	16	69.5
Mean	11.2		13.5		11		10.7	
SD	1.9		2.8		1.9		2	
Median	11		14		11		11	
	p=0,002				p=0,257			
	p=0.000							

Table 3: Attitude in the selection of healthy snacks respondents before and after give TPS Lesson.

Attitude	Intervention group				Control group			
	Pre intervensi		Post intervensi		Pre intervensi		Post intervensi	
	f	%	f	%	f	%	f	%
Negative	11	47.8	12	52.2	12	52.2	12	52.2
Positive	12	52.2	11	47.8	11	47.8	11	47.8
Mean	46.04		47.65		46.48		45.26	
SD	4.02		4.47		3.54		3.68	
Median	47		47		45		45	
p=0.705					p=1.000			
p=1.000								

Table 4: Measures in the selection of healthy snacks respondents before and after given TPS lessons in the treatment group and control group.

Action	Intervention group				Control group			
	Pre intervensi		Post intervensi		Pre intervensi		Post intervensi	
	f	%	f	%	f	%	f	%
Good	5	21.74	7	30.43	0	0	3	13.04
Enough	12	52.17	14	60.87	9	39.13	9	39.13
Less	6	26.08	2	8.69	14	60.87	11	47.83
Total	23	100	23	100	23	100	23	100
Mean	64.65		69.83		55.25		59.41	
SD	14.92		13.58		8.78		15.25	
Median	61.61		66.67		55.16		56.89	
p=0.034					p=0.109			
P=0.006								

Wilcoxon signed rank test results obtained p-value = 0.109 means p then H1 is rejected means that the TPS learning model does not affect the changes in the action of healthy snack consumption in school-age children where the model of learning TPS can not increase the actions of children on the selection of healthy snacks in the control group (table 4).

4 DISCUSSION

4.1 The influence of Think Pair Share learning model on the knowledge of healthy snack consumption in school-age children

The application of TPS as health education method influence in the improvement of knowledge and action, but give not a significant effect in attitude. The TPS learning model invites students to work

independently and with others (Suarni, Suhardi M, 2012) with a structural approach that emphasizes special structures designed to influence interaction patterns and student thinking (Nurjanah, 2010).

This model of TPS learning invites students better able to process information and communication and develop their thinking ability. Previous research shows that Think Pair Share helps students to develop conceptual understanding, information, conclusions, and helps to shape opinions and assume the viewpoints of others (Theobald, 2011). Results of research conducted by (Saragih, 2014) mentioned that the TPS learning model has a positive impact on the improvement of student learning outcomes.

TPS learning model is very appropriate given by school-aged children (7-11 years) because the intellectual ability of children at this time is able to be given a variety of skills that can develop the mindset or power of reason. Children's thinking at this age is already plausible and logical, they are able to classify, sort, compile, and organize facts to solve a problem (Wong, 2009).

Increased knowledge will increase the understanding of children in good behavior and healthy snacks. Increased student understanding because in the method of learning TPS invites students to play an active role, appreciate the opinions of others, and try to think of resolving a given problem. Previous research conducted by (Kurniawan & Istiningrum, 2012) shows that cooperative learning of TPS can improve students' learning motivation. The TPS learning model involves all students in the classroom that are quickly and easily implemented in any class, and also serve as a learning method in a seminar consisting of 12 people or a recovery consisting of 100 people (Ulrich, 2005). If found the odd number of students allowed for one group consists of 3 people (Cooper James, 2013). Based on the results of previous research mentioned that the model of TPS learning has been effectively done on 8 to 47 students or equivalent to 4 to 23 couples in one class. The learning model of TPS invites all students to play an active role in expressing their opinions, exchanging opinions on the stage of pair and share through this learning process students will understand and understand the problems given so that creates the experience of the child so as to facilitate the process of remembering the material given.

4.2 The influence of Think Pair Share learning model on the attitude of healthy snack consumption in school-age children

After intervention in the treatment group, there was no significant change in the attitude of a respondent. Health education with TPS learning model becomes one of the learning processes in children to instill knowledge, value, and perception about healthy snacks. According to (Maulana, 2009), states that attitudes are a tendency to respond (positively or negatively) to a particular person, situation or object; contains an emotional or affective judgment (curiosity, hate and sadness), cognitive (knowledge of the object and the conative (tendency to act) of a given stimulus unlike actions and actions does not necessarily reflect a person's attitude Individuals often show conflicting actions with but attitudes can lead to patterns of ways of thinking that affect the actions and behavior of society, both in everyday life and in making important decisions in life (Maulana, 2009).

According to Azwar (1995) in Maulana (2009) , there are three components that form the structure of attitudes, among which are: (1) cognitive component (Perceptual component) that contains the beliefs

associated with the perception of the individual to the object of attitude with what is seen and known, views, beliefs, thoughts, personal experiences, emotional needs and information from others, for example someone knows health it is worth it if you are aware of pain and feel good; (2) effective component (emotional component) that is this component shows individual subjective emotional dimension to object attitude, either positive (happy) and negative (displeasure); (3) the conative component (behavioral component) that is this component is predisposition or the tendency to act on the object of attitude that it faces. Furthermore, the change or unchanged attitude about a stimulus given to the treatment group can be influenced by several factors namely factors that influence the formation of attitudes are personal experience, the presence of others who are considered important, the influence of culture, mass media, educational institutions and religious institutions and emotional influences (Azwar, 1995 in Maulana, 2009).

The lack of personal experience of the respondents is one of the factors that cause the TPS learning model has no effect on the child's attitude about healthy hawker selection. Everything that a person has and is experiencing will shape and influence one's appreciation of social stimuli (Azwar, 1995 in Maulana, 2009), for example a person has been given a health education through a TPS learning model, according to test results that there is an increase in knowledge about snacks healthy, this is because they will learn, try to understand and live, which initially do not know to know, but note here that the increase in knowledge of children is not necessarily directly proportional to a positive attitude improvement if not followed by a child's personal experience. A person who has no experience at all on a psychological object will tend to form a negative attitude toward the object (Middlebrook 1974 in Maulana 2009). Someone who has not had personal experience, whether it befall him or herself about the impact of unhealthy snacks such as mild symptoms (dizziness and nausea), severe symptoms (vomiting, abdominal cramps, muscle cramps, muscle paralysis, diarrhea, disability) to cause death he will tend to give a negative response to the selection of healthy snacks, unlike the case with children who have had prior personal experience, after being given health education through the model of TPS learning did not rule out the possibility of children will give a positive attitude about healthy snacks because previously they have responded from the beginning from the experience that has been received and coupled with

the knowledge gained through the TPS learning model.

4.3 The influence of Think Pair Share learning model on the action of healthy snack consumption in school age children

The model of TPS learning has an effect on the change of action of healthy snack consumption in school-age children. Learning method is one of the most important factors in the learning process, which is where learning is a process of change of individual behavior gained through experience, stimulus-response, habituation, understanding, appreciation and through the activities of individuals in achieving something they want (Payitno, 2009) in an effort gain habits, knowledge, and attitude (Lester & Elis in Simamora R 2009). The results of previous research mentioned that the TPS learning model has an active role in increasing the interest, achievement and motivation of children about the learning in schools such as mathematics, biology, science and so on, as well as the improvement of children's actions about healthy snacks selection that has been done by researchers because the children are invited to think critically and be able to decide what is deemed good and what is not good, so it creates a good action in the selection of healthy snacks (Saragih, 2014). Similarly, the results of research conducted by Suarni (2012) states that the TPS learning model can increase the activity or action of students in learning mathematics. The research that has been done by (Wulandari, 2010) reveals that the application of TPS learning model is very effective to increase student participation in learning and also improve student achievement toward the given course.

5 CONCLUSION

TPS learning model can change the knowledge and action of school-age children in the healthy selection of snacks because in TPS invites students to play an active role in solving a problem and critical thinking. But this method of learning can not change the attitude of school-age in the selection of healthy snacks because of the factor from within the individual itself in response to the stimulus provided.

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