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## **Cooking Training Intervention to Improve Cooking Skills and Self Efficacy in Preparing Breakfast for Kendari City Junior High School Students**

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### **Abstract**

The quality of adolescent breakfast is very influential on daily nutritional needs. Fast food is a favorite food for teenagers but the nutritional content is lacking. Love to eat - ready-to-eat food makes the practice of cooking decline. The purpose of this study was to improve cooking skills and self-efficacy in preparing breakfast for junior high school students in Kendari City. This study is a quasi-experimental design. The subjects in this study were 26 students of SMPN 10 Kendari, namely the intervention group who were given cooking training and nutrition education with the lecture method and 26 students of SMPN 9 Kendari were the control group who were given nutrition education through leaflets. Data were analyzed using paired t-test and independent sample t-test. The results showed that there were differences in cooking skills and self-efficacy in preparing breakfast ( $p < 0.05$ ) in the intervention group ( $p < 0.05$ ). In addition, there were also differences in self-efficacy in preparing breakfast between the intervention group and the control group ( $p < 0.05$ ). It was concluded that there was a positive effect of cooking training on increasing self-efficacy and cooking skills for preparing breakfast. For the school, it is better to hold extracurricular cooking activities to train students' skills in meeting daily nutritional intake.

**Keywords:** Cooking Training, Self-efficacy, Skills

### **Introduction**

Adolescence is a period of growth and development characterized by very rapid changes physically, psychologically, and cognitively. (McWilliams, 1993 in Fikawati et al, 2017). The increased nutritional needs of adolescents are influenced by rapid physical changes and reproductive organs resulting in an increase in the need for energy and other nutrients which are accompanied by increased freedom to own and spend their personal money related to decisions to choose food which puts adolescents in a nutritional position who are at risk (Fikawati et al, 2017). Good nutritional intake plays an important role in achieving optimal body growth. Optimal body growth includes brain growth which will determine a person's intelligence. The strategic role of nutrition on growth and development will lead to an increase in the quality of human resources because individuals can reach their maximum potential with adequate nutrition (Fikawati et al, 2017).

Currently, teenagers are very fond of eating fast food (Field, 2011). Dependence on fast food and delicious food makes cooking practice decline, because it is seen as a time-consuming activity (Condrasky & Hegler, 2010; Lang & Caraher, 2001; Mac Con Iomare &

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Lydon, 2011; Pettinger et al., 2006). The type of breakfast menu on school days is more often in the form of side dishes, snacks, and drinks, while on holidays it is in the form of rice complete with side dishes and vegetables (Sari et al, 2012).

Cooking skills are one of the important determinants of food selection. People who have cooking skills tend to choose healthier foods (Frans, 2017). Perez-Rodrigo & Aranceta, (1997) suggested that 60% of children prepared at home some of the dishes they tried after intervention and scores for cooking skills improved significantly. The study also showed an increase in consumption of fruits, vegetables, fish and dairy products after the intervention. Cooking skills have an important role in the process of increasing the knowledge and practical skills needed to achieve healthy eating practices (Caraher et al, 2010). Self-efficacy is a person's self-confidence in completing his work, someone who has high self-efficacy tends to believe in his abilities, then behavior change will be easy to do (Bandura, 1993). Several studies show a relationship between Self Efficacy with cooking and eating patterns. High self-efficacy was associated with eating at home, while lower efficacy was associated with fast food consumption. Having higher self-efficacy is also associated with better meal planning (Morin et al., 2013). The same research also shows that Self Efficacy has a positive relationship with cooking from scratch (Lavelle et al, 2016). A study also found that higher self-efficacy was associated with higher vegetable intake (Kourajian, 2015).

Currently, there are several cooking skills interventions that combine nutrition education, cooking skills and self-efficacy which have the aim of increasing nutritional knowledge, cooking skills and high self-efficacy (Caraher et al, 2010). Based on the description above, the importance of instilling cooking skills in each student to be able to prepare their own breakfast makes students more independent.

## Methods

The type of research used is a quasi-experimental (quasi-experimental) with a pre-test post-test control group design. This study used two groups, namely group I, students of SMPN 10 Kendari who were given the intervention of cooking training and nutrition education with the lecture method, totaling 26 students. Group II of SMPN 5 Kendari students was the control group providing nutrition education through leaflets totaling 26 students.

The initial stage was to conduct screening at SMPN 10 Kendari and SMPN 5 Kendari for 2 weeks. Screening for cooking interest in SMPN 10 students who meet the criteria for having an interest in cooking are 76 students (64.96%). Screening for cooking interest in SMPN 5 students who met the criteria for having an interest in cooking were 81 students (60.45%). Then a simple random sampling technique was used, namely simple random sampling by lottery (lottery technique). There were 52 students who were willing to take part in this study, each 26 students from SMPN 5 Kendari and 26 students from SMPN 10 Kendari with an age range of 13-14 years.

This research was conducted for 5 weeks which was carried out in January - February 2021. Data on cooking skills, self-efficacy SPSS 20.0 Software Application. Then it was analyzed to see the difference in mean difference ( $\Delta$ ) before and after the intervention between the research groups using SPSS, the paired data difference test using the Wilcoxon test because the data was not normally distributed, the data difference test was independent using the Mann Whitney test because the data was not normally distributed.

## Results and Discussion

**Table 1.** Characteristical Characteristics of Smpn 10 Kendari and SMPN 5 Kendari Student Respondents

Characteristic	Group					%
	Intervention		Control			
Respond		%		%		
<b>Gender</b>						
Male	6	23,1	8	30,8	14	26,92
Female	20	76,9	18	69,2	38	73,08
<b>Total</b>	<b>26</b>	<b>100</b>	<b>26</b>	<b>100</b>	<b>52</b>	<b>100,00</b>
<b>Parental Education</b>						
Elementary School	1	3,8	0	0,0	1	1,92
Junior School	2	7,7	0	0,0	2	3,85
High School	15	57,7	21	80,8	36	69,23
College	8	30,8	5	19,2	13	25,00
<b>Total</b>	<b>26</b>	<b>100</b>	<b>26</b>	<b>100</b>	<b>52</b>	<b>100,00</b>
<b>Parent Jobs</b>						
Not Working	2	7,7	0	0,0	2	3,85
Labor/Farmer	1	3,8	0	0,0	1	1,92
Private/Self-Employed	16	61,5	21	80,8	37	71,15
Civil Servants/Army/Police Officer	7	26,9	5	19,2	12	23,08
<b>Total</b>	<b>26</b>	<b>100</b>	<b>26</b>	<b>100</b>	<b>52</b>	<b>100,00</b>

Source: Primary Data, 2021.

<sup>122</sup> description of the characteristics of the research sample shows that there are more women in the intervention group, namely 76.9% and the control group, namely 69.2%. Respondents are students aged 13 years and class VIII. Based on the parents' education, the highest number was SMA, in the intervention group it was 57.7% and the control group was 80.8%. Based on the occupation of the parents, the majority were private/self-employed, in the intervention group as much as 61.5% and in the control group as much as 80.8%.

**Table 2.** Assessment of Cooking Skills of SMPN 10 Kendari Students Before and After Cooking Training Intervention

Cooking Skills					P Value
	Pre-Test		Post Test		
	n	%	n	%	
<b>criterion</b>					
Not Yet Compethere	21	80,7	0	0	0.000*
Competent Enough	5	19,3	0	0	
Competent	0	0	20	76,9	
Highly Competent	0	0	5	19,3	
special	0	0	1	3,8	
<b>Total</b>	<b>26</b>	<b>100</b>	<b>26</b>	<b>100</b>	

Source: Primary Data, 2020. \* Wilcoxon test

Assessment of students' cooking skills before and after being given cooking training showed the group of students before being given the cooking training intervention had incompetent cooking skills as many as 21 people (80.7%) and quite competent as many as 5 people (19.3%). After being given cooking training, the cooking skills of the group of

students turned into competent as many as 20 people (76.9%), very competent as many as 5 people (19.3%), and special as many as 1 person (3.8%). The results of the assessment of differences in students' cooking skills before and after being given cooking training showed a significant value ( $p = 0.000$ ).

Table 3. Differences in Cooking Skills Junior High School Students 10 kendari Before and After Being Given Cooking Training Interventions

Cooking Skills			D Mean	P Value
	Mean	±SD		
Pre Test	45,7419	13,49684	30,63 ↑	0.000*
Post Test	76,3719	5,98274		

Source: Primary Data, 2020. \* Wilcoxon test

Table 4. Self-Efficacy Assessment of SMPN 10 Students in Preparing Breakfast Before and After Cooking Training

Self-Efficacy	Group				P Value
	Pre Test		Post Test		
	N	%	N	%	
<b>Criterion</b>					0.000*
Low/Bad	0	0	0	0	
Less Good	20	76,9	0	0	
Good Enough	6	23,1	5	19,3	
Good / Very Good	0	0	21	80,7	
<b>Total</b>	<b>26</b>	<b>100</b>	<b>26</b>	<b>100</b>	

Source: Primary Data, 2020. \* Wilcoxon test

Table 5. Differences in Self-Efficacy SMPN 10 Kendari Students in Preparing Breakfast Before and After Being Given Cooking Training Intervention

Self-Efficacy			D Mean	P Value
	Mean	±SD		
Pre Test	46,7962	6,48796	37,1792 ↑	0000*
Post Test	83,9754	10,38702		

Source: Primary Data, 2020. \* Wilcoxon test

Table 6. Self-Efficacy Assessment of Junior High School Students 5 kendari In Preparing Breakfast Before And After Being Given Nutritional Education leaflet

Self-Efficacy	Group				P Value
	Pre Test		Post Test		
	N	%	N	%	
<b>Criterion</b>					0.000*
Low/Bad	0	0	0	0	
Less Good	23	88,5	0	0	
Good Enough	3	11,5	18	69,3	
Good / Very Good	0	0	8	30,7	
<b>Total</b>	<b>26</b>	<b>100</b>	<b>26</b>	<b>100</b>	

Source: Primary Data, 2020. \* Wilcoxon test

Table 7. Differences in Self-Efficacy of SMPN 5 Kendari Students in Preparing Breakfast Before and After Being Given Nutritional Education Interventions

Self-Efficacy	Mean/Median	±SD	D Mean	P Value
Pre Test	45,6731	8,33468	29,0057 ↑	<b>0.000*</b>
Post Test	74,6788	11,60189		

Source: Primary Data, 2020. \* Wilcoxon test

Table 8. Differences in Self-Efficacy Of Students In Preparing Breakfast Between Cooking Training Intervention Group With Nutrition Education Group leaflet

Variable			Δ Mean	P Value
	Pre Test	Post Test		
	Mean	Mean		
Self- Efficacy				
Intervention (N=26)	46,7962	83,9754	37,1792 ↑	<b>0.000*</b>
Control (N=26)	45,6731	74,6788	29,0057	<b>0.000*</b>
P Value	<b>0,447**</b>	<b>0,002**</b>		

Source: Primary Data, 2020. \*Wilcoxon Test\*\*Whitney Mann Test

The self-efficacy assessment of students in preparing breakfast before and after being given cooking training showed that the group of students before being given cooking training had self-efficacy with poor criteria as many as 20 people (76.9%) and quite good as many as 6 people (23.1%) . After being given cooking training, students' self-efficacy in preparing breakfast turned into quite good as many as 5 people (19.3%) and good/very good as many as 21 people (80.7). Then for the self-efficacy assessment of students in preparing breakfast obtained before being given nutrition education with leaflets with poor criteria as many as 23 people (88.5%) and good enough as many as 3 people (11.5%) after being given nutrition education intervention leaflets showed enough good as many as 18 people (69.3%) and good/very good as many as 8 people (30.7). The results of the assessment of differences in student self-efficacy preparing breakfast before and after being given the intervention, both the cooking training intervention group and the control group given leaflet nutrition education both showed a significant value ( $p = 0.000$ ). The test results between the cooking training group and the leaflet nutrition education group after the intervention showed a p-value ( $0.0002 < (0.05)$ ) which means that there is a difference in the average score between the intervention group and the control group.

Adolescence is a period of growth and development characterized by very rapid changes physically, psychologically and cognitively (McWilliams, 1993). According to the expert view of adolescence, there is an increase in the need for energy and nutrients along with the freedom to spend personal money so that adolescents can make their own decisions to choose food. However, the ability of adolescents to think about choosing healthy foods is still low, which puts them at risk for health problems (Fikawati et al 2017). Adequate nutritional intake makes adolescents not easily tired and can concentrate while studying, therefore the importance of nutritious food for adolescents includes eating nutritious foods at breakfast because breakfast contributes 15-30% of energy to the total daily intake (Permenkes, 2013).

The assessment of cooking skills was carried out to measure the ability of respondents before being given cooking training interventions and after being given cooking training, this

skill measure included abilities in the preparation stage, implementation process, testing, finishing, and cooking percentage. The assessment of differences in students' cooking skills before and after being given a cooking training intervention will provide an overview of the benefits of cooking training interventions in shaping students' abilities to prepare healthy breakfasts independently which will have an impact on good attitudes and behavior in forming breakfast routine habits before carrying out activities.

It is known that the results of the assessment before and after being given cooking training showed a significant value ( $0.000 < 0.05$ ) so it can be interpreted that there are differences in students' cooking skills before and after being given a cooking training intervention. The test results indicate that there is an effect of the cooking training intervention on students' cooking skills in preparing breakfast. This illustrates that students' cooking skills after being given cooking training are better than before being given a cooking training intervention. The results obtained are in line with the research conducted by Perez-Rodrigo et al (1997) that there was a significant increase in scores after the intervention for cooking skills. Another study conducted in America, namely a curriculum-based cooking program for students with the aim of developing cooking skills, showed significant results on positive attitudes towards home cooking (Cunningham-Sabo et al, 2011).

The cooking training intervention with nutrition education through the lecture method in this study is in line with the opinion of Caraher et al (1999) that the intervention program in the form of nutrition education will run effectively if it is done by direct cooking practice.

The results of the assessment of the difference in self-efficacy of students in preparing breakfast before and after being given the intervention of cooking training and nutrition education with the lecture method showed a significant value ( $p = 0.000$ ). According to Bandura's (1999) theory, someone who has high self-efficacy is associated with successful behavior change. Someone who has good self-efficacy will be confident in his abilities and tend to change his behavior. Changes in self-efficacy in this study are in line with Wrieden et al (2007), high cooking self-efficacy associated with the ability to cook a variety of foods with greater variety, higher knowledge of food preparation, and more courage in trying new recipes. Another study conducted by Caraher et al (2013) also showed an increase in self-efficacy scores after direct cooking practices with chefs. The results of the assessment of differences in student self-efficacy in preparing breakfast before and after being given nutrition education leaflets showed a significant value ( $p = 0.000$ ). According to (Kelder et al, 2015) the increase in self-efficacy is also influenced by the factor of verbal persuasion, namely in the form of nutrition education given to the control group through leaflets.

The test results between the cooking training group and the leaflet nutrition education group before the intervention showed insignificant results ( $0.447 > 0.05$ ). The test results after the intervention showed a p-value ( $0.002 < 0.05$ ), which means that there is a difference in the average score between the intervention group and the control group. According to research results (Liqori et al. 1998) nutrition education alone has no effect on cooking self-efficacy, in general nutrition education provided in the form of nutrition education does not focus on the theory of cooking skills. This shows that the educational material coupled with the training practice will affect the formation of self-efficacy in preparing breakfast before carrying out activities. This shows the importance of self-efficacy as a factor that can determine students to be encouraged and have good awareness as a social response based on their knowledge to always maintain breakfast intake in order to meet nutritional intake, especially for school students. Improving self-efficacy can be done through the experience of mastering social modeling, verbal persuasion, and practice without feeling pressured (Kelder

et al., 2015). In this study, the experience to prepare an easy and healthy breakfast. Verbal persuasion in the form of nutrition education.

### Conclusion

The conclusion of this study is that there are differences in students' cooking skills before and after being given a cooking training intervention, there are differences in student self-efficacy before and after being given a cooking training intervention, there are differences in student self-efficacy before and after being given nutrition education leaflets, there are differences in self-efficacy between the cooking training intervention group and the nutrition education group, so overall it shows that there is a positive effect of cooking training on increasing cooking skills and self-efficacy in preparing breakfast. The suggestion from this research is that the school should hold extracurricular cooking activities to train students' cooking skills in meeting daily nutritional intake.

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