

**THE EFFECT OF PEMPEK BREAKFAST ON SHORT TERM
MEMORY IN STUDENTS AT PSYCHOLOGY STUDY PROGRAM
UIN RADEN FATAH PALEMBANG**

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ABSTRACT

A lot of theory and research said that breakfast can improve someone's short term memory. The purpose of this research is to find out whether breakfast really improve short term memory or not. This research used quasi-experimental with control group design. There's 30 students of Psychology students at Raden Fatah State Islamic University Palembang, 15 as subjects who were given breakfast, 15 as control group subjects who were not given breakfast. Subjects have an age range between 19-20 years old, all of subject are those who are accustomed to breakfast. Subject given pempek as the breakfast. Memory test used is biopsychologytes, performed twice, before breakfast and 3 minute after material. The result of this study are there is a significant difference in short term memory scores between subjects given breakfast and subjects not given breakfast with $p = 0,00$ withpaired sample t-test technique. Conclusion of this research is, breakfast has an effect to short term memory.

Keywords: Breakfast, Pempek, Short Term Memory, Psychology Student

INTRODUCTION

When in the adolescent phase, a child will experience more lifestyle changes, including in carrying out a healthy lifestyle such as consuming healthy food with regular meal times (Sulistyoningsih, 2011). Lately the breakfast habit has begun to be abandoned, with the excuse that there is not enough time or not used to having breakfast. Whereas when someone skips breakfast, the brain's work will be disrupted so that it cannot concentrate on studying (Rahmawati, 2009).

According to the Clinical Nutrition Specialist in the Department of Radiotherapy, DR. CiptoMangunkusumo, dr. FiastutiWitjaksono, the breakfast menu does not have to be rice but can be replaced with other menus such as bread, fruit or other nutritious foods (Triyono, 2009). The fact is that there are many traditional foods that have high nutrition, one of which is pempek, a typical food from Palembang.

Research results from the Ministry of Health of the Republic of Indonesia, pempek contains 182 kilo calories of energy, 9.2 grams of protein, 27.8 grams of carbohydrates, 3.8 grams of fat, 401 milligrams of calcium, 116 milligrams of phosphorus and 2.4 milligrams of iron. Not only that, pempek also contains several vitamins needed by the body, such as vitamin A of 13 IU and vitamin B1 of 0.16 milligrams. From the results of this research it can be concluded that pempek has good nutritional content for the human body.

Many do not know that breakfast also helps in the process of losing weight, this is because breakfast can increase glucose levels in the body so that the body will feel fuller (Bento & Parker, 1998). In addition, in a study of adolescent children, breakfast can improve cognitive abilities, improve focus, be ready to receive information, and have good results in math and language tests (Micha et al, 2010).

Glucose can improve memory by increasing the concentration of glucose in blood plasma, this effect occurs at all ages. Glucose works very well to support memory because glucose can be the main source of energy for the central nervous system (Kaplan et al, 2001). Glucose is the main ingredient for making acetyl CoA, where acetyl CoA is the precursor for acetylcholine, this content if released can improve a person's brain memory by releasing it (Das, 2001).

In addition, when some body sleep in night day, they in circumstances no eat or drink (fast) until morning. As a result, sugar blood down in morning day, which damage function cell nerve and ability remember. Breakfast play role important in increase sugar blood which down moment sleep, and give body nutrition which enough so that neurons function optimal (Amy et al., 2008).

So, this may affect short-term memory or *short-term memory* and affect the storage of learning outcomes. *short term memory* is a memory that

has limited capabilities and processes to remember information for a short period of time, this memory is also used to temporarily retain information received from long memory (Baihaqi, 2006).

A study was conducted by Scroll (2006) to examine the effect of giving breakfast on short-term memory in Saint Martin University students. In that study, 20 students were randomly selected to take a 2-day short-term memory test. The results showed that students who had breakfast beforehand had higher memory test results than those who were not given breakfast. Pempek consumption habits can form an attitude pattern that can appear repeatedly in consuming certain foods for early adulthood (Puri, 2007). Consuming pempek with cuko is no stranger, most Palembang students like pempek because they consider eating pempek a mandatory habit every day, besides that pempek is a food that is easy to find and practical that can be taken anywhere.

From various previous studies, it can be seen that breakfast can improve short-term memory abilities, therefore researchers are interested in conducting this experimental research with the aim of knowing whether there is an effect between breakfast and short-term memory in psychology students at the Faculty of Psychology, State Islamic University Raden Fatah Palembang.

RESEARCH METHODS

In this study the design used is *Two-Group Pretest-Posttest with control group Design*. The subjects selected in this study were Psychology students at Raden Fatah State Islamic University Palembang in their fifth semester. Subjects totaled 30 people who were divided into two groups with one group of 15 people each and the age range was 19-20 years. In this study breakfast was used as a manipulation, the breakfast used was pempek. Pretest-Posttest questions used to measure *Short Term Memory* in students. The procedure in this research is, the research begins with provide breakfast to a group after that researcher will given material in which there is a grid to answer pretest questions, with different sheets, after these instructions respondents are asked to memorize for 3 minutes, and after 3 respondents are asked to answer 10 posttest questions multiple choice question. After all were completed, the respondents were given a token of thanks for agreeing

to participate in this study. The analysis technique in this study used IBM SPSS Statistics Version 20 with the *paired sample t-test technique*. During the recruitment process, the researcher asked the participants' willingness to participate in this study. They were also informed that they could withdraw from the study at any time.

RESULTS AND DISCUSSION

The data in this study were processed using a paired sample technique. Based on table 1, the following data is obtained:

Table 1 (Paired Sample Statistics)

		Means	N	std. Deviation	std. Error Means
Pair 1	PRE-TEST	6,93	15	1,710	,441
	POST-TEST	8,93	15	1,223	,316

Table 2 (Paired Samples Correlations)

		N	Correlation	Sig.
Pair 1	PRE-TEST & POST-TEST	15	,476	,073

Table 3 (Paired Samples Test)

		Paired Differences				t	df	Sig. (2-tailed)
		Means	std. Deviation	std. Error Means	95% Confidence Interval of the Difference			
Pair 1	PRE-TEST - POST-TEST	-2,000	1,558	,402	-2,863 -1,137	4,971	14	,000

In this study were analyzed using the *paired sample t-test technique* to test the effect of pempek breakfast on *short term memory* in students in psychology study program, Raden Fatah State Islamic University Palembang. The results of the analysis test in table 1 show that there was a

significant increase between before being given pempek breakfast ($M = 6.93$ $SD = 1.710$) and after being given pempek breakfast ($M = 8.93$ $SD = 1.223$), $t() = -4.971$. $P < 0.001$. The mean increase is -2000 with 95% internal confidence. Furthermore, the researchers also looked at the significance value in table 3 (2-tailed: $0.000 < 0.005$). This indicated that the hypothesis was accepted in this study. H_a : The subject's *short term memory score* after being given pempek breakfast will be significantly higher than before drinking coffee.

From the results of the analysis of the t-test hypothesis testing of 15 psychology students at the State Islamic University of Raden Fatah Palembang. The age range of the respondents is 19-20 years. The results of the study stated that pempek breakfast had a significant relationship to short term memory. In this experimental study, it can also be concluded that pempek breakfast improves short-term memory. This is in accordance with the existing theory, that glucose can improve memory by increasing the concentration of glucose in the blood plasma, this effect occurs well at all ages. Glucose works very well to support memory because glucose can be the main source of energy for the central nervous system (Kaplan et al, 2001).

Another theory also says, When somebody sleep in night day, they in circumstances no eat or drink (fast) until morning. As a result, sugar blood down in morning day, which damage function cell nerve and ability remember. Breakfast play role important in increase sugar blood which down moment sleep, and give body nutrition which enough so that neurons function optimal. This is also because glucose is the main ingredient for making acetyl CoA, where acetyl CoA is the precursor for acetylcholine, this content if released can improve a person's brain memory by releasing it (Das, 2001).

The results of the correlation test using the *paired sample t-test technique* according to a *cross-sectional study* conducted by Tursina and Aminah which stated that there was a relationship between breakfast activity and cognitive function of short-term memory in psychology study program students at Malikussaleh University. Results this also in accordance with study experiment which conducted by Hidayati about influence rate glucose blood which tall to enhancement memory period short on woman mature,

which find exists connection Among enhancement rate glucose blood after breakfast with enhancement *Short term memory*.

CONCLUSION

According to the results of the correlation test using the *paired sample t-test technique* in this study, it was concluded that breakfast has an effect on short-term memory, with a *p value* = 0.00. Suggestions for future research, for inclusion criteria to be stricter on subjects, researchers must ensure that the subjects studied really did not consume any food before running the test.

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