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**THE RELATIONSHIP BETWEEN AVAILABILITY AND OTHER FACTORS WITH
BREAKFAST PATTERN AT SELECTED HIGHSCHOOL STUDENT IN TANGERANG -
INDONESIA 2014**

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Skipping breakfast habitual will increase the risk of obesity, unhealthy lifestyle, and lack of intelligence, especially for the students. Moreover, adolescent growth spurt is undergoing a process that needs more nutritional requirements. Tangerang has lowest high school graduation rate in Banten Province for the academic year 2013 so it is important to develop research on adolescent breakfast pattern in this region. This study aims to determine the relationship between the availability of breakfast and other factors with student breakfast pattern in selected high school in Tangerang on 2014. Research method is a quantitative research with cross sectional design study. Data were collected using self-completed questionnaires for 160 students. Breakfast intake was assessed using a 2x24 hour food recall questionnaire. The results showed, 70.6% of respondents had a bad breakfast pattern. There is a significant association between the availability of breakfast (0.003) and the school accessibility (0,016) with respondents' breakfast pattern. After multivariate analysis, it is known that the availability of breakfast is the dominant factor associated with the breakfast pattern of student in selected high school in Tangerang on 2014.

Keywords: Breakfast pattern, Availability, Intelligence

1. INTRODUCTION

Diet pattern in adolescence is important issue since eating behaviors during adolescence may affect a person's eating behavior after adulthood. Unhealthy eating behavior that is common in teenagers is skipping breakfast, with a frequency of three times in one week (Brown, 2011).

Tangerang is one of regencies located in Indonesia. This region is one of the major cities of the suburban that has rapid development sufficiently. The rapid development can be seen from the development in the Tangerang region over the last few years. Previous research has shown that the habit of skipping breakfast on adolescents generally occurs in rapid development cities.

Information obtained from two local media Banten mention that the graduation rate of National Examination on high school level in the district of Tangerang year 2012/2013 was the lowest in Banten province (News, in <http://www.bantenposnews.com> and <http://www.kabaranten.com>). A preliminary survey conducted in SMAN 15 Tangerang showed 53% of 15 students skip their breakfast. Khomsan (2003) mention that breakfast can improve blood sugar which helps young people in improving their concentration. The level of concentration has effect on intelligence and learning achievement.

2. RESEARCH METHODOLOGY

This research is a quantitative cross-sectional study. Data is collected at the same time (Kelsey, 1996). This research used primary data to identify the relationship between the independent variable and the breakfast habits of the students in SMA Tarsisius Vireta and SMAN 1 Tangerang.

The study was conducted at SMA Tarsisius Vireta and SMAN 1 Tangerang. The city chosen because it has the lowest high school graduation rate in Banten province, therefore more investigation needed to know the breakfast pattern of student since breakfast pattern effect on intelligence. The study was conducted in April 2014.

School inclusion criteria are (1) public and private high school in Tangerang accredited by BAN-SM with the highest scores (2) School actively operating in 2014. The number of sample is calculated based on the formula of hypothesis testing for two proportions and set on 95% confidence interval (Ariawan, 2012).

There are two types of questionnaire that used in this study, self-administered questionnaire and 2x24 hour food recall. Self-administered questionnaire is a collection of questions prepared to describe individual characteristics, characteristics of the family members, psychosocial conditions, and accessibility of respondents to school. Questions in the questionnaire are questions adapted and modified from a variety of sources Arora, et al (2012), Lipshuetz (2002), and Muhadjir (1998). While 2x24-hour food recall was used to determine the average number of respondent's intake at breakfast (Gibson, 2005). Food recall was administered by 5 student of Public Health Nutrition, Universitas Indonesia using food model as the media. Food recall of the second day is done after two days of the first food recall. Both were done in the weekday. This study used chi square test to analyze independent variables and the dependent. Significance level set at 5% of alpha. Multiple regression models were conducted in this study as the prediction model.

3. RESULT AND DISCUSSION

Refers to the ideal frequency of breakfast according to Brown (2011), researcher found that 51.2% of respondents have frequency of breakfast in the bad category (more than 3 times per week). More than 50% among respondents who has bad frequency of breakfast was only take their breakfast 1-2 times per week. The average of breakfast frequency is 5 times per week. As much as 28.1% of respondents skip breakfast in 3-4 times of their school day. If calculated before entering the first break time (09:00 to 9:30) those who skip breakfast have not optimally concentrated in the first period and the second (one session certain subjects). According to what the researcher have observed, first and second class hours usually filled with subjects that will be tested in the National Exam. If the respondent skipped breakfast 3-4 times a week, they will lost 3-4 chapters of lessons.

Skipping breakfast prevalence in this research is higher than data from the research conducted by Rashidi, et al (2009) and Arora, et al. (2012) in other Asian countries, Iran and India. In Iran, 19.2% of adolescents breakfast with a frequency of 0-1 times a week. While in India, 30% of teenagers do not breakfast every day.

Table 1. Bivariate analysis result

Variable	Category	Breakfast Pattern				OR	P value
		Bad		Good			
		n	%	n	%		
Gender	Female	65	67.7	31	32/3	0.699 (0.344-1.421)	0.415
	Male	48	75	16	25		
Nutrition knowledge	Bad	73	72.3	28	27.7	1.238 (0.616-2.490)	0.674
	Good	40	67.8	19	32.2		
Preference	Dislike	6	60	4	40	0,626 (0.168-2.331)	0.490
	Like	103	70.5	43	29.5		
School	Public	55	71.4	22	28.6	1.078 (0.545-2.130)	0.967
	Private	58	69.9	25	30.1		
Meal availability	Not always	67	81.7	15	18.3	3.107 (1.514-6.377)	0.003*
	Always	46	59	32	41		
Body image satisfaction	Unsatisfied	57	76	18	24	1.640 (0.819-3.283)	0.219
	Satisfied	56	65.9	29	34.1		
School accessibility	Inaccessible	73	64.6	40	35.4	0.319 (0.131-0.778)	0.016*
	Easy to access	40	85.1	7	14.9		

The results showed 57.5% of respondents had an average intake of breakfast meet 15-30% daily energy needs. The average intake of breakfast in all respondents was 268.2 kcal. From the average intake of all respondents, the number of respondent who did not meet the 15-30% RDA was 8.1% of respondents. The result showed the proportion of adolescents who meet adequate intake of breakfast was better if compared with Hardinsyah (2010) on Riskesdas (2013). Hardinsyah (2010) showed that 55.4% of student who meet the adequate intake of breakfast.

According to gender, proportion of female and male proportion was not different. The results showed bad breakfast pattern is more common in male respondents compared to female respondents. Bivariate analysis demonstrated that bad patterns of breakfast is more common among respondents who has a poor nutritional knowledge. As mentioned by Notoatmodjo (2003), knowledge is a domain that is important for overt behavior. Behavioral adoption based on knowledge will be long lasting.

The results showed that skipping breakfast habit more common among respondents who actually liked the breakfast provided at home. It can be caused by the respondents answer for home-breakfast preference which showed statistically not different. The results showed that respondents who did not like the home-breakfast is only 6.2%.

Based on bivariate analysis for relationship between school types on the pattern of school breakfast, respondents who had a bad breakfast pattern is more common in public schools than those in private schools. According to this problem, few countries have implemented the policy of the School Breakfast Program. This program raises funds to provide breakfast to students who come from difficult socio-economic status. This program has been proven to increase intake of macronutrient.

Based on bivariate analysis, student with bad breakfast pattern is more common in the respondents who are not always provided by breakfast at home (81.7%). It means that, breakfast availability is important to support breakfast habit. From the results of the study also shown that adolescents who were not always provided by breakfast at home will have risk 3.107 times to have a bad breakfast pattern. The results also showed a significant correlation between the availability of breakfast with breakfast patterns in adolescents with p value of 0.003. The relationship between the availability of breakfast with teenager breakfast pattern also indicated in previous study conducted by Hermina (2009), Kumala (2013), and Novanti (2013). Student who cannot access their breakfast at home are more likely to skip breakfast because they have no time to prepare their breakfast.

Based on bivariate analysis, respondents who had a bad breakfast pattern is more common in respondents who were dissatisfied with her body image. It also shown that the respondents with no satisfaction on their body image will get risk 1.640 times higher to have a bad pattern of breakfast. However, the significance value was not found in this study.

From multiple regression analysis, it was found that the availability of breakfast is the most dominant factor in determining the pattern of breakfast in student of SMA Tarsisius Vireta and SMAN 1 Tangerang.

4. CONCLUSION

There is significant difference between the availability of meal and breakfast patterns on student in Tangerang. This findings can be a basis for supporting a healthy lifestyle by providing an alternative breakfast for students. Improving the breakfast menu in the school cafeteria into the food that can meet RDA is recommended to be implemented in school. School also can conduct other activities that raise awareness of the importance of breakfast. The government can begin to try similar program as School Breakfast Program which has been implemented in other countries and were proven effective in improving the breakfast habit.

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