The Cultur of School Environment Associated with Overweight in Urban Adolescent

Oktia Woro Kasmini Handayani[1], Daniel D. Kameo[2], Rukmadi Warsito[2]
[1] Departement of Public Health Science, Semarang State University
[2] Postgraduate Development Study, Faculty of Agriculture, University of Kristen Satya Wacana

Article Info	ABSTRACT
	The number of cases in overweight adolescents tend to increase will have an impact on the quality of Human Resources (HR) in the present and future. For that, the problem in this research is what the cultural of school environment factors related to the overwight in urban adolescent. This study was a cross sectional survey. The population in this study is all high school students Kesatrian 2 Semarang in 2012, amounting to 918 people. Samples were 30 students selected by purposive sampling. The independent variable was the frequency of street food consumption, physical activity and the amount of pocket money. Dependent variable is overweight events. The data analysis is using chi square test. There is a relationship between the frequency of street food consumption (p= 0.020), physical activity (p= 0.030) with the risk of incidence of overweight in urban adolescents. There is no relationship between the amount of pocket money (p= 0.225) and the incidence of overweight in urban adolescent. Suggestion: 1) Urban adolescent need to understand the incidence of overweight and the factors that influence it in order to take steps to prevent overweight independently 2) For the department of health, public health center and the school need to promote prevention programs in adolescent nutrition for adolescent to have normal nutritional status.

Corresponding Author:

Oktia Woro Kasmini Handayani,
Departement of Public Health Science,
Semarang State University,
Building F1, 2nd floor, campus Sekaran, Gunungpati, Semarang.
Email: oktia_woro@yahoo.co.id

1.   INTRODUCTION

Health development aimed at improving the quality of human resources (HR). One that plays a role in improving the quality of human resources is a good nutrition, including nutrition in adolescents. Nutritional problems in adolescents can occur due to incorrect nutrition behavior, namely the imbalance between nutrient intake with the recommended dietary allowance, and one nutritional problem in adolescents are overweight [1].

Based on data from Central Java Provincial Health Office in 2009, in Central Java, especially in Semarang, malnutrition prevalence rate of more than 1730 teenagers known 9% overweight and 20% obese. Recapitulation Results Penjaringan Health Level of Students SMA/ MA in 2011 showing of 16 579 adolescents aged 16 years experience as much as 3.71% more nutritional status and most were in the clinic working Gayamsari reaching 18.83% of all cases of over nutrition. Based on the results of periodic examinations Gayamsari centers on high school educational institution found in most nutritional data over SMA Kesatrian 2 that 22.41% of all cases of over nutrition.

Overweight can be caused by several risk factors are genetic, psychological, physical activity, excessive energy consumption, knowledge of nutrition, environmental factors, gender, socioeconomic level and education level of parents. Adolescent is not yet fully mature and rapidly affected by the environment. Activities at school and outside school cause they choose to eat out or just eating a snack. Furthermore, this practice is influenced by family, friends and advertisements on television. Peers have great impact on young people in terms of choosing the type of food. Non-compliance with friends feared could cause him isolated and would undermine confidence. The results of research on nutrition in adolescents, says there is a relationship between: 1) the adequacy of the level of carbohydrates, fats and proteins with more nutrition event, 2) knowledge of nutrition has a significant relationship with the incidence of overweight and 3) numerous studies have shown that environmental factors may play less over 70%, while approximately 30% genetic in nutrition [2][3].

Research conducted by Franzini et al. (2009), to get the influence of the environment surrounding the residence of the nutritional status of children in the UK (United Kingdom) [4]. Healthy norms contained in the tissues of the parents know each other and are willing to keep the neighborhood kids influence obesity or nutritional status of children in the UK. Social familiarity has been shown to affect health at the neighborhood level, with increased social contact and social transactions between people can help implement healthier behaviors. The results of the research performed also shows that the causes of food insecurity and nutrition problems are often a complex issue and a very specific location. The problem can vary by region, location, population groups, different cultures even in the same country, relating to the conduct in this case parenting nutrition, and influenced by the environment [5][6][7][8][9]. In the state of youth, the environment can be a culture in the school environment can be habits related to the type of snack, snack time which can be related to the frequency of snacks, school activities, including cultural environment influenced by educational status and income of parents.

Nutrition can cause the body to malfunction. Impaired function of these body risk factors for the disease such as diabetes mellitus, hypertension, coronary heart disease, cancer and shorten life expectancy. Nutrition especially when accompanied by a large circle of belly helped contribute to significant health problems, decreased quality of life and increased health care costs [10][11].

Nutritional problems in adolescents if not attempted repairs will affect the quality of the people and especially the human resources in the future, so it is necessary to find information about nutritional problems in adolescents, about the risk factors associated with overweight risk factors that can be identified early and dealt with properly. So the formulation of the following research questions:
1. Is there a relationship between the frequencies of street food consumption with risk of incident overweight in adolescents?
2. Is there a relationship between physical activities with risk of incident overweight in adolescents?
3. Is there a relationship between the amounts of pocket money at the risk of the incidence of overweight in adolescents?

2.   RESEARCH METHOD

This study was a cross sectional survey. The study was conducted at SMA Kesatrian 2 Semarang, on the basis that high school students have Kesatrian 2 Semarang youth category, is located in urban schools, and the case of nutrition reached 22.41% (highest) of all cases of overweight Puskesmas Gayamsari region, the city of Semarang. The population in this study is throughout high school students Kesatrian 2 Semarang in 2012, amounting to 918 people. Samples were 30 students selected by purposive sampling, provided the sample of students of class X, doesnot have a history of illness, were not taking medication and had no history of genetic influence weight.

The independent variable in this study are the frequency of street food consumption, physical activity and the amount of the allowance, the dependent variable in the form of events overweight, while confounding variables were controlled in this study were health status, and genetic history. Instruments using a questionnaire, 24h recall and recall everyday activities. While the data collected in the form of quantitative and qualitative data. Data analysis using chi square test with $p = 0.05$.

3.   RESULTS AND ANALYSIS

SMA Kesatrian 2 Semarang is located on the Gajah Street No. 58 District Gayamsari Semarang. The number of students as much as 918, which amounted to 303 students of class X, class XI and class XII 291 324 students. Teaching staff is 40 people. Teaching activities that exist in the form of intra-curricular activities and extra-curricular, which includes graphic design, futsal, badminton, basketball, volleyball and paskribra. Support facilities associated with the consumption of food students in the school environment in

the form of extensive canteen selling snacks such as fried foods, light snacks, soft drinks, candy, chocolate, bread soggy, dry bread, noodles and sauce, satay, soto, pecel. Outside of the school environment were also encountered food vendors, such as meatballs, batagor, dumplings, various fried, ice, etc., as well as some food stalls along the road to school.

Univariat Analysis

Univariate analysis such as frequency of street food consumption, physical activity, amount of pocket money and nutritional status. Frequency of street food consumption samples were obtained from questionnaires and 24-hour recall for 3 days. The frequency distribution according to the frequency of street food consumption showed that 9 students (30%) in a day to eat snacks only 1-3 times, 21 students (70%) in the snack eating 4-6 times a day. Physical activity in the SMA sample Kesatrian 2 Semarang obtained from questionnaires and recall everyday activities. Based on the data obtained can be seen the highest percentage of samples that have high levels of physical activity with moderate-severe category ie as many as 16 students (53%), while 14 students (47%) mild activity. Data on the number of samples obtained from the pocket money filling out the questionnaire. Based on the data obtained, it can be seen that the highest percentage of samples with an allowance of more than 10,000 per day ie a total of 17 students (57%) and 13 students (43%) the daily allowance of less than and equal to Rp. 10,000.

Nutrition status of the index measured based on Body mass index for age (BMI/Age) is a Z-score threshold, with overweight criteria (> 1 SD-2 SD) and the criteria for obesity (> 2 SD). Based on the measurement data shows that most of the samples classified as overweight status, with percentages of overweight status in a sample of 17 students (57%) and were not overweight were 13 students (43%).

Table 1 Characteristic of Respondents

No.	Variable	Number	Frequency (%)
1.	**Frequency of street food consumption**		
	1-3x per day	9	30
	4-6x per day	21	70
2.	**Physical activity**		
	Ringan	14	47
	Sedang-berat	16	53
3.	**The amount of pocket money**		
	≤ 10.000	13	43
	>10.000	17	57
4.	**Nutritional Status**		
	Overweight	17	57
	Obesity	13	43

Bivariat Analisys

Bivariate analysis conducted to determine the relationship between free and bound variables. The relationship between the frequency of street food consumption and nutritional status events, showed that of the nine students who have the habit of eating snacks 1-3x a day, 2 students (7%) experienced incidence of overweight and 7 students (23%) had no nutrition. A total of 21 students have the habit of eating snacks 4-6x a day, 15 students (50%) of them had over nutrition and 6 students (20%) had no nutrition.

Table 2 Relationship Frequency of street food consumption and Nutritional Status

Frequency of street food consumption	Nutritional Status			
	Overweight		Obesity	
1-3x per day	2	7%	7	23%
4-6x per day	15	50%	6	20%
Total	**17**	**57%**	**13**	**43%**

Chi Square test results obtained 0.020 p value less than 0.05 which means that the hypothesis that there is a relationship between the frequency of street food consumption with nutritional risk more acceptable to adolescents. Given the value of CC 0.037 meaning the relationship is in a very weak category (0.00 to 0.199).

The relationship of physical activity with risk of incident overweight can be seen that from 14 samples with light physical activity levels, as many as 5 students (17%) had over nutrition and 9 students (30%) had no nutrition. A total of 16 students had a moderate level of physical activity-weight, 12 students (40%) of them had over nutrition and 4 students (13%) had no nutrition. Chi Square test obtained p value 0.030 is less than 0.05 which means that the hypothesis that there is a relationship between physical activity with the risk of incidence of overweight in adolescents received. These known value of 0.072, which means the level of CC relationship both in the category of very weak (0.00 to 0.199).

Table 3 Relationship Frequency of street food consumption and Nutritional Status

Physical activity	Nutritional Status			
	Overweight		Obesity	
light activity	5	17%	9	30%
moderate-severe activity	12	40%	4	13%
Total	**17**	**57%**	**13**	**43%**

Relationship Amount Allowance nutrition risk events, indicating that the sample has an allowance of less than and equal to Rp. 10,000 per day and have more nutrition than 9 students (30%). A total of 4 students (13%) also had an allowance of less than and equal to Rp. 10,000 per day and no more nutritional experience. Students who have more pocket money than Rp. 10,000 per day by 8 students (27%) had more nutrition. A total of 9 students (30%) also had an allowance of more than Rp. 10,000 per day and had no more nutritional Based on the results obtained bivariate *p* value 0.225 is greater than 0.05 which means that the hypothesis that there is a relationship between the amount of pocket money at risk in the incidence of overweight adolescents rejected. Given the value of CC 0.921 which means there is no relationship between the two in the weak category (0.20 to 0.399).

Table 4 Relationship Frequency of street food consumption and Nutritional Status

The amount of pocket money	Nutritional Status			
	Overweight		Obesity	
≤ Rp 10.000	9	30%	4	13%
>Rp 10.000	8	27%	9	30%
Total	**17**	**57%**	**13**	**43%**

Table 5 Chi Square test resuts

No	Variable	*P*	*CC*	Results
1.	Frequency of street food consumption	0,020	0,037	There is a relationship
2.	Physical Activity	0,030	0,072	There is a relationship
3.	Amount of pocket money	0,225	0,399	There is no relationship

Sources: Primary data

Discussion

Location of Kesatrian High School 2 Semarang is in the urban center of support for access to shopping, dining and religious tourism to students after school. Learning activities and extracurricular activities at school are quite solid, allow students who have a big opportunity to eat outside the home. The number of food vendors inside the school and outside the school allows students to get a snack food. Food intake and physical activity is not balanced can influence the nutritional status of students. The imbalance between energy intake and energy expenditure can lead to better nutrition in adolescents aged students.

1. Relationship Frequency of street food consumption with Incidence Risk of Overweight

Test the hypothesis states there is a relationship between the frequencies of street food consumption with overweight risk in urban adolescents (at SMA Kesatrian 2 Semarang) received, where the relationship is very weak both in the category. The more often consuming more and more frequency of snack or eat a snack more at risk for experiencing of overweight.

In this case is a snack synonymous with street food that can be viewed from terms of type, frequency, and amount of nutrient content. Snack food itself has several functions, among others: 1) For school children, sometimes snack foods to serve for breakfast. 2) For a class of people, snack foods can serve as a snack eaten between main meals. 3) For food vendors, snack foods also have important social and economic functions, in terms of business development snack foods. 4) For some consumers, snack food nutrition contributes significantly to consumer groups such as students who do not have time to eat at home or other reasons. Snack foods in many schools that are categorized as food sold by street vendors or street food, according to the FAO defined as foods and beverages prepared and sold by street vendors on the streets and in crowded public places such as schools eaten directly or consumed without further processing or preparation. Snack foods sold at street vendors can respond to the challenges of society to an inexpensive, easy, interesting and varied [12]. It also expressed Winarno (1997), about snack foods, also known as street food, is a type of food sold at the feet of five, suburban street, at the station, at the market, where settlements and similar locations [13].

Food samples are the preferred snack with a slightly sweet taste and sweet. Typically the samples get street foods or snacks especially at school. Time consuming foods or snacks more often between the time before a big meal and after a great meal. Some of the samples in a day reduces a great meal and ate more

snacks. Kinds of snack foods are often consumed as diverse as dumplings, meatballs, crusty bread, cake, chocolate, light snacks and fried foods and cold drinks. It can be said to sample a snack food groups: 1) main dish or a main dish, 2) snacks or snacks, 3) beverages, 4) Fresh fruits [13]. In this study, a group of most snack foods or street food and the second best is the major food groups. While this type of food group their lunch in the form of: 1) the form of snack foods (fried cakes), 2) diporsi snack foods (meatballs, dumplings) 3) the form of beverages of snacks (Widya Work National Food and Nutrition, 1993).

For example, the energy content in the intake of snack foods consumed in 1 day samples in the form of: 1 serving of meatballs 190 kcal, 162 kcal dumplings 1 serving, 1 serving empek-empek 190 kcal, 1 packet (10 g) 50 kcal crusty bread, sponge cake (100g) 197 kcal, chocolate (25 g) 118 g, 109 kcal bakwan 1 piece, 1 piece of fried tempeh 82 kcal, 207 kcal ice cream, apple juice (100g) 58 kcal. If calculated from the total energy content of snack foods in the daily consumption of as much as 1363 kcal. Figures the recommended dietary allowance for age 16-19 years 2000 kcal of energy intake, energy intake of snack foods accounted for 68.15% of the total energy needs.

According Notoatmodjo (2007), a lot of things associated with eating behaviors including eating food snack-related foods and beverages can maintain and improve one's health. Instead snack foods can also cause a person's health declining, even a sickness. Threats of snack food consumption in adolescents who are school children, on the one hand is the potential that can be utilized to meet the energy needs for daily activities, but on the other hand is a threat of malnutrition among others, better nutritional status, and therefore has a high content carbohydrates and fat, which allows the intake is not a nutritionally balanced meal. Besides of street foods consumption not escape chemical contamination, parasites or micro-organisms harmful to health [14].

According Atikah (2010), in adolescence snacks contribute 30% or more of total caloric intake each day. Similarly, the sample studied, teenagers often eat snacks from the big meal. More samples have a day eating habits are less than 3 times. Sample more than happily to replace large portions with snacks [15].

According Arisman (2004) adolescents often skip two meals and prefer to snack [3]. Consumption of snacks or snacks children can maintain adequate energy before meals. However, excessive consumption of snacks also cause weight gain in the form of an option snack foods high in calories, fat, sugar and low in nutrients needed by adolescents. In addition, the teen-age children already have the skills and more opportunities to choose their own food, teenagers are very easily influenced by the environment such as: family, peers or ads in choosing street foods or snacks.

In this study, the frequency of street food consumption influence obesity, because when viewed from the amount of incoming energy, the body's energy needs contributes snack that is high enough (maximum of 68.15%, which is observed from one sample). Also has a snack fat and high carbohydrate intake, causing not a nutritionally balanced diet. Besides, the energy of this snack causes excessive consumption of nutrients compared to the adequacy. Teens love snacks that are supported by school cultural environmental factors primarily related to customs, in the form of habits: 1) parents provided substantial allowances 2) students eat snack foods either as a substitute for a great meal as well as snacks. This habit is supported by the school environment, such as: 1) the existence of a solid ektrakulikuler activities that teenagers do not have time to go home and provides a great opportunity for teens to buy snack foods, 2) number of food vendors in the form of snacks in school canteens and food stalls schools around the school, 3) environmental or peer influence, 4) rules that allow school snack while in school.

2. The Relatonship between Physical Activities with Risk of Overweight

There is a relationship between physical activity with the risk of incidence of overweight in urban youth (high school of Kesatrian 2 Semarang), and the level of relationship both in the category of very weak.

Physical activity is defined as the movement of the body, especially the muscle that requires energy. Forms of physical activity in adolescents in this study may be the activity of daily routine, as well as extracurricular activities such as sports. Type of light physical activity is often done in a day the sample was sitting, studying, watching television, playing games. While being a frequent activity ie walking, biking to school and strenuous activity is often done in the form of extra-curricular activities, namely futsal, soccer, basketball, volleyball and badminton.

In this study, physical activity most samples were classified in activities, as well as the results of research conducted by Irianto (2007), that physical activity or school-age adolescents generally have moderate level of physical activity, because the activity is often done is to learn and take part in extracurricular in schools which may be done only once a week or even not routinely done [16].

The results also obtain, in adolescents with moderate physical activity experienced more overweight than adolescents who have mild physical activity. This is in contrast with the results of previous studies, such as the research conducted by Mustelin (2009), shows that there is a significant relationship between physical activity and obesity in children [17]. Children who do not regularly exercise or with mild activity had 1.35

times the risk of obesity compared with regular exercise. Beside that children who do not regularly exercise have tended to have a higher energy intake than children who regularly exercise. This difference can be explained related to food and physical activity can influence the onset of obesity both together or each.

In this study, obesity is caused by a higher physical activity that moderate physical activity. Where is physical activity in need of more energy than the sample with light activity, derived from the food consumption. But the food is obtained primarily from the consumption of snacks that are likely greater than the need for food in terms of its activity, therefore snack foods can give a sense of satisfaction and better perceived by teens, resulting in obesity. It can be said teens with moderate physical activity affect the body's physiological processes are better, so the appetite, digestion becomes better anyway.

Cultural environment associated with adolescent physical activity in schools here is the rules relating to extracurricular activities, namely: 1) the values associated with extracurricular activities in which they are active and disciplined in extracurricular activities selected will get some ease from the school and from friends peers, 2) the habit of choosing extracurricular activities such as certain sports that are affected by the trend teenager at the time (eg futsal, basketball, volleyball).

3.The Relationship Between Amount of Pocket Money with Risk of Overweigh

Based on the results of the study show that the amount of pocket money have no affect the incidence of overweight. The results of this study reinforce previous research that stated, there were no effects on the incidence of obesity allowance at SMU Tri Sakti Medan.

Based on the results of data collection, the use of samples not only pocket money to buy a snack food, but also to meet other needs such as for the cost of travel to school, buy petrol, toll, photocopies and some for savings. The amount of pocket money more closely related to the selection of snack foods consumed. Children who receive a stipend above Rp. 10.000 have a greater ability than children under the allowance of Rp. 10.000 to buy a variety of snack foods in terms of diversity, nutrient content, the food is safe and wholesome food.

With a large enough pocket money, usually teenagers often consume foods modern with consideration and hope to be accepted among their peers. By having the freedom to choose their own food, teens tend to buy whatever they like or that interests them regardless of whether the food is nutritionally balanced or not. Selection of the wrong foods can ultimately affect their nutritional status. According to Gibney (2009), the selection of food in humans involves many complex interactions that include a variety of fields, ranging from the biological mechanisms controlling appetite, feeding behavior psychology, social values and culture [11].

4.   CONCLUSION

Based on the results of research conducted at SMA Kesatrian 2 Semarang in 2012, it can be concluded as follows: 1) there is a correlation between the frequency of snacks and physical activity with risk of overweight incidence in urban youth (high school Kesatrian 2 Semarang), 2) there is no relationship between the amount of pocket money at risk in the incidence of overweight urban youth (Kesatrian high school 2 Semarang).

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BIBLIOGRAPHY OF AUTHORS

A.   Personal Identity
1.   Full name (with title): Dr.dr. Oktia Woro Kasmini H, M. Kes
2.   Sex: Female
3.   Academic Rank: Head Lector
4.   Civil Service Data (National Identification Number): 195910011987032001/ 0001105909
5.   Place and Date of Birth: Yogyakarta, October 1, 1959
6.   E-mail oktia_woro@yahoo.co.id
7.   Number Phone / Mobile 024 6714339/08164243569
8.   Office Address: Building F1, 2nd floor, campus Sekaran, Gunungpati, Semarang
9.   Telephone / Fax 024 8508107/024 8508107

B.   History of Education

	Bachelor Degree	Magister	Postgraduate
Name of University	Diponegoro University	Gadjah Mada University	University of Kristen Satya Wacana
Field of Study	Medical	Public Health	Study of Development
Entry Year – Graduation	1978-1986	1996-1999	2008-2011
Judul Skripsi/ Tesis/ Disertasi	Haematuri	The study of customer satisfaction with health services in the Polyclinic UNNES	value children and snacks in the sociocultural context (study of the nutritional status of children in vulnerable environments nutrition)
Name of Advisor/ Promotor	Dr. Himawan SpD	Prof.Dr. Yohana P	Prof. Daniel D Kameo SE,MA,Ph.D Dr.Ir. Lasmono Tri S, MSc Dr. Ir. Rukmadi W, MS

C.   Research Experience in the Last 5 Years
1.   2008: Preparation of a pilot model by mapping area between nutritional status and the environment in Kendal regency and Demak
2.   2009: Business nutritional improvement with test model of competitive grants Area of Higher Education.
3.   2010 Contribution in improving the nutritional status of sociocultural.
4.   2010 Planning a healthy lifestyle through program design activity and food intake
5.   2010 Development Grant nutritional development index model.
6.   2011 Pengetrapan social system as a model for optimization of the neighborhood health center in order to attempt to repair the nutritional status of children under

| | | five years. |
| | 7. | 2012 The addition of fish meal remainder of sorting (fingerlings) for food supplementation of breastfeeding (MP-ASI) in Child under 5 years. |