



Factors associated with student snacking consumption

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Abstract

Snacks and food are sold in school, mostly consumed by students. The unhealthy random snacking may cause them at risk of health problems. This study was aimed at analyzed factors that are related to students in snack consumption. Correlation design was applied in this study. The population in this research was children who are in grades second, third, fourth, fifth, and sixth in elementary school. The total sampling was 258 respondents that qualified inclusion with stratified random sampling. The independent variables were student's knowledge, student's attitude, mother's role, teacher's role, and peer's role. The dependent variable was student snacking consumption. Data were collected by a structured questionnaire. Then, it was analyzed using the Spearman rho correlation test with a significance level of $\alpha \leq 0.05$. Result showed that student knowledge ($p = 0.000$), student attitude ($p = 0.000$), mother's role ($p = 0.009$), teacher's role ($p = 0.000$), and peer's ($p = 0.01$) do have correlation with student snack consumption. In conclusion, student's knowledge, student's attitude, mother's role, teacher's role, and peer's role correlate with student snack consumption. Students' snack consumption is supported by predisposing factors; good knowledge and attitude of the student. Then, the good roles of mother, teacher, and peer are reinforcing factors. Further studies enabling the factors of snack consumption can be used to obtain more accurate results.

Keywords: attitude, knowledge, mothers, peers, snacking consumption, teachers

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INTRODUCTION

School-age children need nutritional intake for growth and development. Healthy snacks contribute to providing energy intake for school children. Through the consumption of healthy snacks, dietary intake in children can be fulfilled. However, the facts in the field are that there are still school children who consume snacks without paying attention to the cleanliness and safety of snacks. A preliminary study conducted on 15 elementary school students found that 13 out of 15 children consume snacks from the outside of the canteen school. The snack includes *cilok* (Indonesian food), sausage satay, *otak-otak* (Indonesian food), ice syrup, iced tea, crispy fried chicken, fried omelet, etc.

Meanwhile, the environment outside the school fence looks dusty, so the safety of the food being sold is not necessarily guaranteed to be clean. Based on the results of the interview, 13 of the 15 students had experienced coughs and colds (40%), sore throats (13.3%), stomachaches (20%), and diarrhea (13.3%). This is in line with research Lubis et al. (2019) that coughing, sneezing, diarrhea, and other symptoms of the digestive tract are symptoms of foodborne diseases that occur due to lack of food hygiene and sanitation (Lubis, Amelia, Arrasyid, & Rozi, 2019). Foods sold by street food sellers (PKL) are generally not well prepared

and clean. Most of the PKL have less knowledge about safe food handling. They also lack access to clean water and washing and disposing of trash facilities (Agustaria, Fazidah, & Nurmaini, 2019; Aritonang & Siagian, 2017; Judarwanto, 2012). Also, based on observations, there are still students who, after the activity of playing with peers, do not wash their hands before consuming snacks and directly touch these snacks so that not all students behave as healthy as expected.

Data from the Republic of Indonesia Drug and Food Supervisory Agency (BPOM RI) in 2009-2014 showed the number of contaminants by microbes in all foods that do not meet the requirements above 50%. Meanwhile, the conditions in the field show that 99% of students have a snacking habit (BPOM RI, 2014; Obat & Indonesia, 2009). The percentage of snacks for school children who did not meet the requirements was 23.89% (2012), 19.21% (2013), and 23.8% (2014). Meanwhile, the causes of snacks for school children who do not meet the highest requirements are caused by microbial pollution (2012: 66%, 2013: 76%, 2014: 74.9%), excess food additives (BTP) (2012: 24%, 2013: 17.3%, 2014: 15.7%), and the use of hazardous materials (2012: 9%,

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2013: 5.9%, 2014: 9%)(Kemenkes RI, 2015). Based on data from BPOM, snacks for school children who do not that food safety for school children is still not guaranteed.

Based on the results of an interview with one of the accompanying teachers of the School Health Efforts (UKS), the school effort that has been done is to verbally prohibit students from not eating snacks outside the school fence by closing the school fence during recess and calling for snacks in the school canteen and bringing supplies from home. Through class teachers, students are reminded not to snack haphazardly and choose healthy snacks. However, there are still students who snack outside the school fence during recess and at home. In addition, the school through the School Health Efforts (UKS) has never held special counseling about healthy and safe snacks for school residents (teachers, parents, and students). This shows the knowledge and attitudes that influence students' consumption of snacks still need to be studied. According to the School Health Efforts (UKS) assistant, teachers, parents of students, especially mothers, play a role in directing their children to consume healthy snacks. The role of mothers to direct their children in the selection of snacks is quite large (Aprillia & Dieny, 2011). The school also provides canteen and handwashing facilities inside the school. The canteen manager has also received information about healthy and safe snacks for school students.

Based on Lawrence Green's theory, the behavior is formed from predisposing, enabling, and reinforcing factors (Maulana, 2014). Factors associated with the act of consumption of snacks can be grouped into predisposing factors. Namely, factors that facilitate include student knowledge and student attitudes; enabling factors, namely the availability of facilities; and included in the reinforcing factor are parents, especially mothers, teachers, and peers. Factors relating to the act of consuming snacks on students need to be known to plan appropriate interventions in the prevention of snack consumption measures that do not meet health requirements. Based on the description above, researchers were interested in analyzing the factors associated with the act of consumption of snacks on elementary school students.

MATERIALS AND METHODS

This research was conducted using a correlational research design. The population in this study were all grade II-VI elementary school students in Surabaya, amounting to 784 students. The sample size obtained in this study was 258 students conducted by a stratified random sampling method based on inclusion and exclusion criteria. The independent variables in this study were student knowledge, student attitudes, the mother's role, the teacher's role, and the peer role. The dependent variable in this study was the act of eating

meet the requirements in the province of East Java are 26% (2012), 15% (2013), and 27% (2014). This explains snacks on students. The instrument used for data collection in this study was a questionnaire that included student knowledge, student attitudes, the act of eating snacks, the role of mothers, teachers, and peers.

Questionnaires about students' knowledge, mother's role, teacher's role, and peer roles consist of closed-ended dichotomy statements, with the score "1" if the answer correct and "0" if the answer incorrect. The score of student attitudes is positive if $T \geq \text{mean data}$ and negative attitude if $T < \text{mean data}$ (Saputri & Kristiawati, 2012). The data were analyzed using the Spearman rho statistical technique to determine the relationship of independent variables (student knowledge, student attitudes, mother's role, teacher's role, peer role) with the dependent variable (snacks consumption actions) with a significant level of $\alpha \leq 0.05$.

RESULTS

The results of this study indicate that there is a relationship between student knowledge, student attitudes, the role of mothers, the role of teachers, and the role of peers with the act of consuming snacks. Based on **Table 1**, it can be seen that there are 191 people (74%) who have good knowledge but found students with good knowledge with less consumption of snacks (24.4%). Students who have a positive attitude there are 194 people (75.2%) but found a positive attitude with less consumption of snacks (27.1%). The role of mothers of 96 people (37.2%) has a good role, but they found a good role with fewer snack consumption (12.8%). The role of teachers of 153 people (59.3%) has a good role, but they found the role of good teachers with less consumption of snacks (17.8%). The role of peers of 216 people (83.7%) has a good role.

In **Table 1**, it can be seen that the results of the Spearman rho statistical test on students' knowledge with snack consumption show the value (p) = 0,000 \leq 0.05 and (r) = 0.302, which means there is a relationship and has a low level of relationship. The attitude of students shows the value (p) = 0,000 \leq 0.05 and (r) = 0.227, which means there is a relationship and has a low level of relationship. The role of the mother shows the value (p) = 0.009 \leq 0.05 and (r) = 0.162, which means there is a relationship and has a very low level of relationship. The teacher's role shows the value (p) = 0,000 \leq 0.05 and (r) = 0.308, which means there is a relationship and has a low level of relationship. Peers indicate the value (p) = 0.01 \leq 0.05 and (r) = 0.210, which means there is a relationship and has a low level of relationship.

DISCUSSION

Based on the study results, there is a relationship between student knowledge, student attitudes, the role

Table 1. Distribution of data based on student knowledge, student attitudes, mother's role, teacher's role, peer role related to snacks consumption

Variable	Category	Snack Consumption Actions			Total
		Less n (%)	Enough n (%)	Good n (%)	
Student knowledge	Less	32 (12.4%)	7 (2.7%)	7 (2.7%)	46 (17.8%)
	Enough	16 (6.2%)	1 (0.4%)	4 (1.6%)	21 (8.1%)
	Good	63 (24.4%)	60 (23.3%)	68 (26.4%)	191 (74%)
Total		111 (43%)	68 (26.4%)	79 (30.6%)	258 (100%)
<i>Spearman Rho</i> (p) = 0.000; correlation coefficient (r) = 0.302					
Student attitude	Negative	41 (15.9%)	11 (4.3%)	12 (4.7%)	64 (24.8%)
	Positive	70 (27.1%)	57 (22.1%)	67 (26.0%)	194 (75.2%)
Total		111 (43%)	68 (26.4%)	79 (30.6%)	258 (100%)
<i>Spearman Rho</i> (p) = 0.000; correlation coefficient (r) = 0.227					
Mother's role	Less	47 (18.2%)	22 (8.5%)	20 (7.8%)	89 (34.5%)
	Enough	31 (12.0%)	18 (7.0%)	24 (9.3%)	73 (28.3%)
	Good	33 (12.8%)	28 (10.9%)	35 (13.6%)	96 (37.2%)
Total		111 (43%)	68 (26.4%)	79 (30.6%)	258 (100%)
<i>Spearman Rho</i> (p) = 0.009; correlation coefficient (r) = 0.162					
Teacher's role	Less	26 (10.1%)	3 (1.2%)	3 (1.2%)	32 (12.4%)
	Enough	39 (15.1%)	14 (5.4%)	20 (7.8%)	73 (28.3%)
	Good	46 (17.8%)	51 (19.8%)	56 (21.7%)	153 (59.3%)
Total		111 (43%)	68 (26.4%)	79 (30.6%)	258 (100%)
<i>Spearman Rho</i> (p) = 0.000; correlation coefficient (r) = 0.308					
The role of peers	Less	9 (3.5%)	2 (0.8%)	2 (0.8%)	13 (5%)
	Enough	19 (7.4%)	6 (2.3%)	4 (1.6%)	29 (11.2%)
	Good	83 (32.2%)	60 (23.3%)	73 (28.3%)	216 (83.7%)
Total		111 (43%)	68 (26.4%)	79 (30.6%)	258 (100%)
<i>Spearman Rho</i> (p) = 0.01; correlation coefficient (r) = 0.210					

of mothers, the role of teachers, and the role of peers with snack consumption. The majority of respondents have good knowledge of the good consumption of snacks. However, there are still respondents who are well informed who have fewer hawker actions. This shows that knowledge is related to the act of consumption of snacks on students, but still at a low level of relationship. Knowledge is the result of knowing someone about an object through sensing (Notoatmodjo, 2010). Knowledge is one of the predisposing factors that can influence health behavior (Arief, Farokha, & Armini, 2017; Green, 1984; Hasan, Hadju, Jafar, & Thaha, 2019). Piaget's cognitive development stage in children aged 7-11 years is a concrete operational phase. In this phase, they were thinking increases or increases logically and coherently. Children can classify objects and orders and solve problems concretely and systematically based on what they receive from their environment. The ability to think of children is rational, imaginative, and can explore more objects or situations to solve problems. The child can think about the concept of time and remember past events and be aware of the activities carried out repeatedly, but the understanding is not yet deep. It will increasingly develop at the end of school-age or early adolescence (Wong, 2009).

Based on the results of statistical tests, it can be seen that the majority of respondents have a positive attitude. However, there are still positive respondents who have fewer snacks. This shows that the attitude of students associated with the act of consumption of snacks on students, but still in a low level of relationship. Attitude is a person's closed response to a particular stimulus or object. According to Newcomb, a psychologist, attitude

is not an action or activity, but it is a predisposition to action (Notoatmodjo, 2010). Attitude is one of the predisposing factors that can influence health behavior (Green, 1984). Attitude consists of three components, namely trust, emotional life, and a tendency to act (Notoatmodjo, 2015). The majority positive attitude of students manifested in the act of consuming good snacks because positive attitudes tend to act well. However, a positive attitude is not necessarily manifested in good actions.

Based on the results of statistical tests, it is known that the majority of respondents have a good mother role. However, it does not affect the act of consuming good snacks. This shows that students' attitude is associated with the act of consumption of snacks on students, but still in a low level of relationship. One of the reinforcing factors that can strengthen health behaviors is family (Hasinuddin, Noviana, & Fitriah, 2019; Notoatmodjo, 2010). The role of parents, especially mothers, has a big influence in shaping the habits of children (Erika, Nurachmah, Rustina, As'ad, & Nontji, 2016). Elementary school-age children need guidance in shaping their habits. Children will get used to consuming food according to what is provided by parents. In this case, the child needs someone more mature to prepare it and, in general, is the duty of the mother (Soedibyo & Gunawan, 2016). According to Erickson's theory of psychosocial development at this stage, the child learns to respect the actions carried out with others and gain benefits in achieving goals.

Based on the results of statistical tests, the majority of the teacher's role is good. However, there is still a role for good teachers with less consumption of student snacks. This shows that the teacher's role is related to

consuming snacks among students, but is still at a low level of relationship. Teachers play a role in providing education, guidance, and direction to students so they can choose and buy and consume foods that have nutritional value and are safe for consumption (Direktorat Bina Gizi, 2011; Hasinuddin et al., 2019). This shows that the better the teacher's role, the better the action of consuming snacks on students. A good teacher role model in the school environment is a reinforcing factor for the act of consuming good snacks for children (Green, 1984).

Based on the results of statistical tests, the majority of the role of peers is good. However, there is still a role of good peers with less consumption of snacks. This shows that the role of peers is related to the consumption of snacks for students, but still at a low level of relationship. This is consistent with Erickson's theory of psychosocial development, where the most important relationship at school age is daily relationships with peers. Peers are powerful motivators. Peers are a

reinforcing factor that can influence health behavior. Peers as students play a role in making the selection, purchase, consumption of foods that have nutritional value, and are safe following the guidance and direction are given by the teacher (Green, 1984). The role of peers can influence the health behavior of school children. This shows that peers can become health promoters or have a positive influence on school-age children.

CONCLUSION

Based on the results of research on factors relating to the act of consumption of snacks on students it can be concluded that the higher the student's knowledge about snacks, student attitudes about snacks, the role of mothers, the role of teachers, and the role of good peers, the higher the actions of good consumption of snacks in elementary school students.

REFERENCES

- Agustaria, G., Fazidah, A. S., & Nurmaini, N. (2019). The relationship of gender, school sanitation and personal hygiene with helminthiasis at juhar karo regency in North Sumatera Province, Indonesia. *Open Access Macedonian Journal of Medical Sciences*, 7(20), 3497–3500. <https://doi.org/10.3889/oamjms.2019.686>
- Aprillia, B. A., & Dieny, F. F. (2011). Faktor yang berhubungan dengan pemilihan makanan jajanan Pada anak sekolah dasar.
- Arief, Y. S., Farokha, I. M., & Armini, N. K. A. (2017). Changing the Personal Hygiene Behavior of Preschool by Reading Stories from Contemporary Books. *Jurnal Ners*, 5(1), 1–9.
- Aritonang, E., & Siagian, A. (2017). Relation between food consumption and anemia in children in primary school in a final disposal waste area. *Pakistan Journal of Nutrition*, 16(4), 242–248. <https://doi.org/10.3923/pjn.2017.242.248>
- B POM RI. (2014). Keamanan Pangan dalam Pengembangan Manajemen UKS Taman Kanak-Kanak di Jawa Timur. <https://doi.org/10.1017/CBO9781107415324.004>
- Direktorat Bina Gizi. (2011). *Pedoman Keamanan Pangan di Sekolah Dasar*.
- Erika, K. A., Nurachmah, E., Rustina, Y., As'ad, S., & Nontji, W. (2016). Effect of family empowerment modified model to a family's ability in controlling life style and physical activity of children with overweight and obesity. *Pakistan Journal of Nutrition*, 15(8), 737–744. <https://doi.org/10.3923/pjn.2016.737.744>
- Green, L. W. (1984). Modifying and developing health behavior. *Annual Review of Public Health*, 5(1), 215–236.
- Hasan, N., Hadju, V., Jafar, N., & Thaha, R. M. (2019). A relationship between knowledge, attitude, and practice about balanced nutrition guidelines and metabolic syndrome among central obese teachers in makassar. *Indian Journal of Public Health Research and Development*, 10(3), 579–583. <https://doi.org/10.5958/0976-5506.2019.00562.X>
- Hasinuddin, M., Noviana, U., & Fitriah, F. (2019). Family Support System as an Effort to Optimize Coping Mechanism of Preschool Children During Hospitalization. *Jurnal Ners*, 14(2), 199–204.
- Judarwanto, W. (2012). Perilaku makan anak sekolah. Pdf Form Available from: <Http://Kesulitanmakan.Bravehost.Com>.
- Kemenkes RI. (2015). Situasi Pangan Jajanan Anak Sekolah. *Pusat Data Dan Informasi. Kementerian Kesehatan RI. ISSN, 2442–7659*.
- Lubis, N. D. A., Amelia, S., Arrasyid, N. K., & Rozi, M. F. (2019). Modelling of risk factors associated with foodborne disease among school-aged children in Medan, Indonesia. *Open Access Macedonian Journal of Medical Sciences*, 7(19), 3302–3306. <https://doi.org/10.3889/oamjms.2019.721>
- Maulana, H. (2014). Promosi kesehatan. *Jakarta: EGC*, 5.

- Notoatmodjo, S. (2015). Health Promotion & Behavioral Sciences (Promosi Kesehatan & Ilmu Perilaku). *Jakarta: Rineka Cipta*.
- Notoatmodjo. (2010). *Ilmu perilaku kesehatan*. Rineka Cipta.
- Obat, B. P., & Indonesia, M. R. (2009). Jajanan Anak sekolah. *Sistem Keamanan Pangan Terpadu, 1*.
- Saputri, L. O., & Kristiawati, K. I. (2012). Peningkatan pengetahuan dan sikap dalam pemilihan jajanan sehat menggunakan alat permainan edukatif ular tangga. *Skripsi: Universitas Airlangga*.
- Soedibyo, S., & Gunawan, H. (2016). Kebiasaan Sarapan di Kalangan Anak Usia Sekolah Dasar di Poliklinik Umum Departemen Ilmu Kesehatan Anak FKUI-RSCM. *Sari Pediatri, 11*(1), 66–70.
- Wong, D. L. (2009). *Buku ajar keperawatan pediatrik Volume 1 Edisi 6*. Jakarta: EGC.

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