

Parenting Style, Feeding Patterns, and Adolescent Eating Behavior in South Kalimantan between Male and Female Adolescents

Nurfitriani^{1*}, Dwi Hastuti², Lilik Noor Yuliati³

¹ Study Program of Child Development and Family Science, Faculty of Human Ecology, Graduate School, IPB University, Bogor 16680, Indonesia

^{2,3} Department of Family and Consumer Sciences, Faculty of Human Ecology, IPB University, Bogor 16680, Indonesia

*) Corresponding author: nurfitriani.fitri@gmail.com

Abstract

Parenting style and parenting eating patterns are a way of controlling teenagers eating behavior. This study aims 1) to analyze gender differences in adolescent characteristics, family characteristics, feeding patterns, and eating behavior; 2) to analyze the effect of adolescent characteristics, family characteristics, and feeding patterns on adolescent eating behavior. This study used a cross-sectional study design with survey methods. The sample of this study was 160 adolescents (61 boys and 99 girls who were in grade 10 of high school). The results of the T-test showed that there were no significant gender differences in adolescent characteristics and family characteristics. There were significant differences in authoritarian parenting style, feeding patterns and eating behavior between boys and girls. The results of the regression analysis showed that eating behavior was influenced by age and feeding patterns.

Keywords: age, adolescent, eating behavior, feeding pattern, parenting style

Abstrak

Gaya pengasuhan orang tua dan pola asuh makan merupakan cara mengontrol perilaku makan remaja. Perilaku makan remaja adalah respon remaja terhadap sikap dan praktik makan terhadap makanan, seperti kebiasaan jajan, kebiasaan makan tepat waktu, kualitas makanan, frekuensi makan, kebiasaan sarapan serta perilaku menyimpang anoreksia dan bulimia. Penelitian ini bertujuan untuk 1) Menganalisis perbedaan karakteristik remaja laki-laki dan perempuan, karakteristik keluarga, pola asuh makan dan perilaku makan; 2) Menganalisis pengaruh karakteristik remaja laki-laki dan perempuan, karakteristik keluarga, pola asuh makan terhadap perilaku makan. Penelitian ini menggunakan desain *cross-sectional study* dengan metode survei. Sampel penelitian ini adalah 160 remaja (61 remaja laki-laki dan 99 remaja perempuan yang duduk di kelas X SMA). Penelitian dilaksanakan pada bulan Desember 2017. Analisis data yang digunakan dalam penelitian adalah analisis deskriptif dan inferensia. Hasil penelitian ini menunjukkan tidak ada perbedaan yang signifikan antara karakteristik remaja, karakteristik keluarga remaja laki-laki dan remaja perempuan. Hasil penelitian ini menunjukkan ada perbedaan yang signifikan antara gaya pengasuhan *authoritarian*, pola asuh makan dan perilaku makan antara remaja laki-laki dan remaja perempuan. Hasil penelitian ini menunjukkan bahwa perilaku makan remaja dipengaruhi oleh usia remaja dan pola asuh makan.

Kata kunci: gaya pengasuhan, perilaku makan, pola asuh makan, remaja, usia

Introduction

Adolescence is a vulnerable and critical age period, especially in eating behavior problems due to dissatisfaction with their physical appearance (Kurniawan, Briawan, & Caraka, 2015). Lewinsohn, Striegel-Moore, and Seeley (2000) state that eating disorders generally occur in adolescence and young adults with an increase in the rate at the age of 10. The Ministry of Health of the Republic of Indonesia (2015) mentions the eating behavior of Indonesian adolescents, including not always having breakfast (65.2%), consuming less fiber derived from fruit vegetables (93.6%), and often consuming foods that are flavorful (75.7%). Specifically, in the Province of South Kalimantan, malnutrition status was experienced by as many as 15.8% of men and 13.8% of women aged 6-14 years. Poor nutritional status experienced by adolescents 15 years and over by 16%. National data states that very underweight adolescents aged 13-15 years are as much as 2.4 percent and underweight nutritional status as much as 7.4% (Ministry of Health, 2015).

Good eating behavior is the behavior of daily food consumption according to nutritional needs, the type of food consumed is a carbohydrate, protein, vegetables, fruit, and milk (Bobak, 2005). Conversely, poor eating behavior is the habit of consuming food that is not appropriate and irregular both in time and type of food (Sarintohe & Prawitasari, 2006). Data from Basic Health Research (Riset Kesehatan Dasar) shows that as many as 96.6% of high school teenagers in Indonesia consume fewer vegetables or fruit. In the period 2007-2013, there was no rapid increase in the consumption of vegetables and fruit among adolescents in South Kalimantan. The definition of lack, in this case, means the consumption of fewer than 5 servings (400 gr) per day.

Based on Basic Health Research data (Riset Kesehatan Dasar, 2013), adolescents in Indonesia tend to like sweet foods and drinks (53.1%) and fatty foods (40.7%). Adolescents consume sweet foods/drinks more than once a day (53.1%) and consume biscuits more than 1 time per day (17.2%). Nationally, South Kalimantan Province ranks highest (70.4%) in terms of risky food consumption behavior. In South Kalimantan Province, Hulu Sungai Tengah Regency is included in the five regencies/cities with the highest consumption of seasoning. Also, Hulu Sungai Tengah Regency and Banjarmasin City are included in 7 regencies/cities in South Kalimantan with the highest consumption of sweet foods and drinks.

Adolescent eating behavior is influenced by internal factors and external factors. Internal factors consist of physical and psychological factors, while external factors consist of cultural, economic, social norms, knowledge, and media or advertising factors (Barasi, 2007). Other studies show factors that predict adolescent eating behaviors, including peer, family atmosphere, body image, mass media, and economic level (Birch & Fisher, 1998; Giskes et al., 2005; Khomsan, 2003; Story, Neumark-Sztainer & French, 2002). Families, especially parents as the closest environment of adolescents, are the place to develop and form patterns and habits of daily living (Bronfenbrenner, 1994). Parents play an important role in shaping adolescent eating behavior. One impact of the application of parenting style is related to the pattern of providing healthy food (Hughes et al., 2017). Parenting style is related to adolescent eating quality (Pinquart et al. 2014). Parenting styles include authoritarian, authoritative, and permissive parenting styles (Baumrind, 1987). Numerous studies show different effects of each parenting style on adolescent eating behavior (Lohman et al., 2016; Loth et al., 2015; Pearson et al., 2010; Rozenblat et al., 2017; Wang et al., 2014; Zahra et al., 2014).

Karyadi (1985) defines feeding practice as a parenting practice applied by parents to children related to feeding. According to Pramuditya (2010), feeding practice is a practice that is applied by mothers to children covering the situation and way of eating, so that it can provide a pleasant atmosphere for children at mealtime. Nutritious food and drinks provided by parents

from before pregnancy to adulthood are part of feeding practice. Feeding practice also refers to what and how the child eats, as well as the situation that occurs when the child eats provided by the mother or primary caregiver (Hastuti, 2015). The results of prior studies show that feeding patterns significantly predict adolescent eating behavior, both in terms of regular eating behavior, food quality, adolescent diet, overeating behavior, and weight gain (Birch, Fisher, & Davidson, 2003; Kitzman et al., 2011; Loth et al., 2014).

Previous studies indicate that adolescent sex is significantly related to feeding patterns (Larson et al., 2013; Loth et al. 2013). Also, previous findings show that parental gender, parental education, parental occupation, parental income, and number of family members are significantly associated with parenting (Ambrosini et al., 2009; Berge et al., 2015; Larson et al., 2013; Li et al., 2017; Lohman et al., 2016; Loth et al., 2013). Therefore, these sociodemographic factors are important to be involved in research on adolescent eating behavior to better understand the relation between these variables and adolescents in other research locations. Besides, this study incorporates gender differences in adolescent eating behavior which is still scarce among Indonesian research.

Based on the explanation above, this study aims to: (1) analyze gender differences in adolescent characteristics, family characteristics, parenting styles, feeding patterns, and eating behavior between adolescent boys and girls; and (2) analyze the effects of adolescent characteristics, family characteristics, parenting style, and feeding patterns on adolescent eating behavior.

Methods

Participants

This research was a cross-sectional study that was carried out through a survey method with the help of a set of questionnaires. This research was conducted at senior high schools in South Kalimantan Province as the province in Indonesia with the highest prevalence of risky food consumption behavior. The research was undergone through the stages of preparation, data collection, data processing, data analysis, and report writing. Data were collected in December 2017.

The population of this study amounted to 519 people coming from two selected senior high schools in South Kalimantan Province to represent urban and rural areas. The senior high school in urban areas amounted to 385 students and senior high school in rural areas amounted to 134 students. The sample criteria in this study were 10th-grade students. Sampling in this study used a simple cluster random sampling method where the samples have the same opportunity to be selected as examples. The research sample was calculated using the Slovin formulation and resulted in 160 participants.

The type of data used in this study were primary and secondary data. Primary data were obtained directly from self-administered questionnaires including adolescent characteristics, family characteristics, parenting styles, feeding patterns, and eating behaviors of adolescents. Secondary data were obtained from related departments in the research location that support this research.

Measures

The instrument for measuring parenting style was referred to and modified from the Parental Authority Questionnaire (Buri, 1991) consisting of the authoritative parenting style, authoritarian parenting style, and permissive parenting style. There were 10 statement items for the authoritative parenting style, 10 statement items for authoritarian parenting style, and 10

statement items for permissive parenting style. The instrument used a 5-point rating scale (0=strongly disagree, 1=disagree, 2=disagree, 3=agree, 4=strongly agree). The Cronbach's alpha values for the authoritative parenting style, authoritarian parenting style questionnaire, and permissive parenting style were 0.639, 0.637, and 0.639, respectively. The instrument of feeding patterns was modified and referred to as Hastuti's (2015) instrument consisting of 20 statements. The responses were rated on a 5-point scale (0=never, 1=once in a while, 2=sometimes, 3=often, 4=very often). The Cronbach's alpha value of this questionnaire was 0.802. Given that mothers are widely taking the role of primary caregiver, the assessment of parenting styles and feeding practices are referred to practices carried out by mothers.

The instrument of eating behavior was modified using a food frequency questionnaire (Willett et al., 1985) consisting of 20 items. The instrument used a 5-point rating scales (0=never, 1=once in a while, 2=sometimes, 3=often, 4=very often). The Cronbach's alpha value of this measurement was 0.708.

Analysis

Data processing procedure was done using Microsoft Excel software whereas data analysis was carried out using Statistical Package for Social Science (SPSS) version 21. The self-administered questionnaire data was processed through the data processing stage which included editing, coding, scoring, entering, cleaning, and analyzing. Next, descriptive analyses were conducted for primary data (adolescent characteristics, family characteristics, parenting styles, feeding patterns, and eating behavior). The results of the scoring data were summed up to obtain a total score which was then transformed into an index. Furthermore, the index scores obtained were categorized into three: low (<60), moderate (60-80), and high (>80).

The procedure of data analysis was as follows:

1. Descriptive analysis was to obtain the frequency, percentage, mean, standard deviation, minimum score, and maximum score of the studied variables.
2. Independent sample T-test was to determine differences in studied variables between boys and girls.
3. Multiple linear regression test was to analyze the factors that predict adolescent eating behavior. The regression model that was tested first had gone through 4 classic assumption tests, namely the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test.

Findings

Adolescent Characteristics and Family Characteristics

This research involved a total of 160 adolescents consisting of 61 boys and 99 girls. The age range of adolescents was between 15 to 17 years with an average age of 15 years. In terms of gender differences, the average age of male adolescents was 15.3 years and the average age of female adolescents was 15.2 years. There was no significant difference between the ages of male and female adolescents ($p>0.05$).

The average age of mothers of boys was 42.2 years whereas the average age of mothers of girls was 41.9 years. The T-test result showed that there was no significant difference ($p>0.05$) between the maternal age of male and female adolescents. The average length of education of male adolescent mothers was 10.0 years or equivalent to the 10th grade of senior high school and the average education of female adolescent mothers was 9.8 years or equivalent to the 9th grade of junior high school. The result of T-tests showed no significant difference between the maternal education of male and female adolescents ($p>0.05$). The average number

of family members was 4.4 for male adolescents and 4.6 for female adolescents. The T-test results showed no significant differences in the number of family members between male and female adolescents ($p>0.05$).

Table 1. Average index scores and T-test results of socio-demographic characteristics by gender

Variable	Average \pm SD		<i>p</i> -value
	Male	Female	
Adolescent characteristic			
Adolescent age (year)	15.32 \pm 0.65	15.20 \pm 0.58	0.209
Family characteristics			
Mother's age (year)	42.21 \pm 7.69	41.92 \pm 5.50	0.786
Mother's length of education (year)	10.08 \pm 3.80	9.85 \pm 3.88	0.722
Per capita income (thousand Rp/month)	634,767.77 \pm 892,508.79	674,870.93 \pm 802,678.86	0.769
Number of family members (person)	4.47 \pm 1.08	4.65 \pm 1.42	0.395

Per capita income is the amount of income a family earns every month divided by the number of family members. The average income per capita for male teenage families was Rp634,000 per month. The average per capita income of female teenage families was Rp674,000 per month. The T-test showed that there were no significant differences ($p>0.05$). The Regional Minimum Wage in the Province of South Kalimantan is Rp2,454,671 per month. Thus, the per capita income of the family of female adolescents tended to be higher than that of the family of female adolescents (Table 1).

Parenting Styles

Table 2 shows the average index scores and T-test results of three types of maternal parenting styles reported by male and female adolescents. The results of this study found that most mothers tended to use authoritative parenting styles. In terms of gender differences, mothers of female adolescents were more likely to use an authoritative parenting style compared to mothers of male adolescents. The result of the T-test confirmed the significant differences between these groups ($p<0.001$).

Table 2. Average index scores and T-test results of parenting style by gender

Parenting style	Average \pm SD		<i>p</i> -value
	Male	Female	
Authoritative (index score)	61.68 \pm 12.57	63.86 \pm 13.31	0.305
Authoritarian (index score)	51.18 \pm 14.47	45.02 \pm 13.71	0.008**
Permissive (index score)	42.50 \pm 17.65	38.35 \pm 14.18	0.105

Note. (*) significant at $p<0.05$, (**) significant at $p<0.001$

Feeding Patterns

The results of this study found that the average index score of feeding practices in female adolescents was higher than that in male adolescents with significant differences ($p<0.001$). The feeding pattern in this study is referred to the child's perception of the ways and habits of the mother in fulfilling the child's food consumption. Table 3 shows the average response score of male and female adolescents on each statement as well as the different significance between these two groups of adolescents. The average score of female adolescents was higher than that of male adolescents. Out of 20 items, 6 items had a significant difference between male and female adolescents.

Female adolescents reported that mothers fairly often got angry when they often ate late whereas male adolescents reported the mother's response as rarely got angry ($M_{\text{female}}=2.56$,

$M_{\text{male}}=1.78, p<0.001$). On the statement “Mother gets angry when I don’t eat regularly”, both female adolescents and males, on average, responded sometimes and fairly often ($M_{\text{female}}=2.63, M_{\text{male}}=2.01, p<0.05$). On the statement “Mothers get used to providing animal protein sources, such as fish, chicken, egg, and meat”, on average, female adolescents and males answered on a scale of relatively often ($M_{\text{female}}=2.99, M_{\text{male}}=2.63, p<0.05$). On average, mothers were rarely angry when male and female adolescents didn't like eating food with vegetable protein, such as tempeh and tofu ($M_{\text{female}}=1.96, M_{\text{male}}=1.31, p<0.05$). When the adolescents were having no appetite, mothers of female adolescents sometimes got angry whereas mothers of male adolescents rarely got angry ($M_{\text{female}}=2.24, M_{\text{male}}=1.39, p<0.001$). Mothers of female adolescents often let them not eat when they didn’t want to whereas mothers of male adolescents sometimes let them do so.

Table 1. Gender differences in feeding practices between male and female adolescents

Item	Male	Female	<i>P-value</i>
My mother prepares breakfast every day.	2.93	2.89	0.819
My mother let me not to eat fruit.	3.37	3.46	0.583
My mother gets angry when I often eat late.	1.78	2.56	0.000**
My mother gets angry when I don't eat regularly.	2.01	2.63	0.002*
I get used to eating animal protein sources such as fish, chicken, eggs, and meat.	2.63	2.99	0.040*
My mother gets angry when I don't like to eat vegetable protein sources such as tempeh and tofu.	1.31	1.96	0.002*
My mother forbids me to eat fish for fear of fishy/allergic.	3.70	3.83	0.171
My mother lets me eat a snack.	1.78	1.80	0.902
My mother gets me used to drinking water.	2.95	3.07	0.437
My mother gets angry when I often consume sweet foods.	1.72	2.01	0.138
My mother provides a complete meal every day: rice, side dishes of animal and vegetable protein sources, vegetables, and water.	2.57	2.57	0.991
My mother lets me eat rice and vegetables only, or rice and side dish only.	2.16	2.17	0.968
My mother gets angry when I'm having no appetite.	1.39	2.24	0.000**
My mother lets me when I don't want to eat.	2.68	3.20	0.006*
My mother provides fruit in the daily menu.	1.41	1.80	0.014
My mother explains the benefits of nutritious food.	1.80	1.91	0.542
My mother gives an example to eat nutritious food.	2.44	2.51	0.691
My family often eats together.	2.83	2.84	0.935
My mother forbids me to throw food.	2.68	3.00	0.069
My mother forbids me from eating fast food.	1.77	1.99	0.182

Note. (*) significant at $p<0.05$, (**) significant at $p<0.001$ (0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)

Eating Behavior

Eating behavior in this study was measured by eating habits, eating on time, types of food, eating frequency, breakfast habits, and eating disorders (anorexia and bulimia) totaling 20 items. The results of this study found that the average score of eating behavior among female adolescents was higher than that of male adolescents. Generally, the results of T-tests showed that there were significant differences in eating behavior between male and female adolescents ($p<0.05$). Specifically, there were 5 items with significant differences between adolescent boys and girls. The response on each measurement item and the significance value of the differences by gender can be seen in Table 4.

The average female adolescents often had lunch on time while the male adolescents sometimes had lunch on time ($M_{\text{female}}=3.07, M_{\text{male}}=2.52, p<0.05$). Female adolescents, on average, only consumed packaged snacks rarely, while male adolescents consumed it quite often ($M_{\text{female}}=1.93, M_{\text{male}}=2.59, p<0.001$). In contrast, the consumption of homemade snacks

among female adolescents showed higher frequency (sometimes) than male adolescents (rarely) ($M_{\text{female}}=1.92$, $M_{\text{male}}=1.42$, $p<0.05$). In terms of types of food, female adolescents quite often consumed rice while male adolescents consumed it frequently ($M_{\text{female}}=3.68$, $M_{\text{male}}=3.34$, $p<0.05$). Similarly, the water consumption of female adolescents and males on average was classified as frequent, but female adolescents had it in a slightly higher frequency ($M_{\text{female}}=3.74$, $M_{\text{male}}=3.19$, $p<0.001$).

Table 2. Gender differences in eating behavior between male and female adolescents

Item	Male	Female	<i>p-value</i>
Eating time			
Breakfast	2.80	2.94	0.473
Lunch	2.52	3.07	0.005*
Dinner	2.45	2.79	0.095
Eating habit			
Eat together	2.27	2.45	0.322
Eat on time	1.90	2.14	0.189
Consume fast food	2.67	2.36	0.049
Consume packaged snack	2.59	1.93	0.000**
Consume homemade snack	1.42	1.92	0.003*
Consume packaged beverage	2.34	2.13	0.216
Types of food consumed in one week			
Rice	3.34	3.68	0.008*
Vegetable	2.70	2.66	0.828
Fruit	1.90	2.00	0.556
Animal protein (fish/egg/meat/chicken, etc.)	2.96	3.20	0.178
Vegetable protein (tempeh/tofu, etc.)	2.38	2.58	0.205
Milk	1.86	1.96	0.648
Water	3.19	3.74	0.000**
Salted fish	2.36	2.60	0.136
Eating disorder			
Do you throw up food on purpose to reduce food intake after eating?	3.65	3.56	0.393
Do you pry food that has already been eaten?	3.37	3.58	0.070
Do you hold/keep your intake (not eating)?	2.80	3.04	0.154

Note. (*) significant at $p<0.05$, (**) significant at $p<0.001$ (0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)

Factors that Predict Eating Behavior

The coefficient of determination (Adjusted R-Square) for the regression equation model that tested the effect of adolescent characteristics, family characteristics, parenting styles, feeding patterns, and eating behaviors on adolescent eating behavior was 0.290 (Table 5). It indicates that as much as 29% variations of adolescent eating behavior were predicted by the studied variables in the model. The remaining 71% was predicted by other variables that were not examined in this model. The results of multiple linear regression tests showed that adolescent eating behavior was predicted by adolescent age ($\beta=-0.180$, $p<0.05$). The younger the adolescents, the better their eating behavior is. Also, adolescent eating behavior was predicted by feeding patterns ($\beta=0.386$, $p<0.05$). The better the feeding patterns of mothers, the better the adolescent eating behavior is.

Table 3. Multiple regression results

Variable	Eating behavior		
	B	β	<i>p-value</i>
Constant	84.394		0.000**
Adolescent age (year)	-2.985	-0.180	0.022*
Sex (0: male; 1: female)	1.114	0.053	0.473
Mother age (year)	0.165	0.103	0.155
Mother's length of education (year)	0.449	0.169	0.067
Per capita income (thousand Rp/month)	-0.001	-0.061	0.502
Number of family member (person)	-0.330	-0.042	0.550
Authoritative (index score)	0.006	0.007	0.926
Authoritarian (index score)	0.003	0.004	0.966
Permissive (index score)	-0.052	-0.080	0.315
Feeding practice (index score)	0.320	0.386	0.000**
F			6.908
<i>p-value</i>			0.000**
R-square			0.339
Adjusted R-square			0.290

Note. (*) significant at $p < 0.05$, (**) significant at $p < 0.001$

Discussion

This study involved 160 adolescents with an age range of 15-17 years. Marchi (2007) revealed adolescence is a period that is susceptible to eating disorders. Parenting is a parent's interaction with their child which includes caring, protecting, giving love, and directing the child (Hastuti, 2015). Baumrind (1987) divides parenting styles as authoritative, authoritarian, permissive, and unengaged. However, this study only measures authoritative, authoritarian, and permissive parenting styles. The results of this study indicate that the authoritarian parenting style was reported the most by male adolescents than female adolescents. Authoritarian parenting styles emphasize the exercise of power rather than explaining, demanding children, applying high discipline, and lacking affection for children. This may be due to female adolescents have more sensitive feelings so parents tend to be more delicate. On the contrary, parents tend to apply higher discipline to male adolescents compared to females. Parents who apply the authoritarian parenting style to their children can negatively impact the character of children. Prior findings showed that male adolescents will be more irritable and resistant (Bee & Boyd, 2004; Respati, Yulianto, & Widiana, 2006).

Feeding practice is a parenting practice that is applied by parents to children concerning foods (Karyadi, 1985). The results of this study indicate that female adolescent reported higher scores of feeding patterns than male adolescents. The results of the T-test also showed a significant difference in feeding patterns between male and female adolescents. This finding is different from the study of Loth et al. (2013) which states that teenage boys were more likely than girls to receive parental pressure to eat. The differences in geographic and demographic conditions of the sample between the studies need to be considered in interpreting this finding.

There were 59% of adolescent boys who reported low categorized feeding patterns, 37% of the medium category, and 2% of high category. On the other hand, 50% of female adolescents reported a moderate category of feeding patterns, 43% of low category, and 6% of high category. Female adolescents reported higher scores than male adolescents in some statements which may be interpreted as rules and pressures the adolescents receive from their mothers in terms of their eating patterns.

Eating behavior is a person's response to the need for life which includes knowledge, perceptions, attitudes, and eating practices towards food (Notoatmodjo, 2007). The results

found that female adolescents reported better-eating behavior than adolescent boys. The T-test results showed that there were significant gender differences in eating behavior between male and female adolescents. This is in line with the statement of Tantiani and Syafiq (2008) that boys are more likely to experience deviate eating behavior compared to girls. As many as 54% of male adolescents were in the moderate category of eating behavior, 37% were in a low category, and 5% were in the high category. There were 63% of female adolescents who were categorized as having moderate eating behavior, 28% were categorized low, and 8% were categorized high. The average score of eating behavior among female adolescents was lower than male adolescents.

The results of multiple linear regression tests indicate that adolescent eating behavior was predicted by adolescent age. The younger the adolescent, the better the adolescent eating behaviors are. This result is in line with the research conducted by Monteagudo et al. (2013) which found that early adolescents were more frequent in having breakfast. Also, adolescent eating behavior was predicted by feeding practices. The better the feeding practice, the better the adolescent eating behavior is. This is in line with research conducted by Pinquart et al. (2014) which explains that parents who can provide positive parenting can make adolescent eating behaviors healthier. This result proves that feeding patterns may improve adolescent eating behavior. The limitations of this study are, data were based on adolescent perceptions and did not incorporate parents' (mother) reports and did not make direct observations on the real-life of adolescent eating behavior.

Conclusion and Recommendation

Conclusion

This study involved 160 teenagers consisting of 61 boys and 99 girls. The age range of teenagers in this study was 15-17 years with an average age of 15 years. The average age of mothers of male adolescents was 42.2 years and of female adolescents was 41.9 years. Based on the findings of this study, there were no differences in the adolescent characteristics (age), family characteristics (maternal age, length of mother's education, mother's occupation, per capita income, and the number of family members) between male and female adolescents. There were significant gender differences in the authoritarian parenting style, feeding patterns, and eating behavior between two groups of adolescents. Male adolescents reported higher scores of authoritarian parenting styles that they received from their mothers compared to female adolescents. Female adolescents reported higher scores of feeding patterns than male adolescents. Female adolescents were also better in eating behavior than male adolescents.

Recommendation

Based on the findings of this study, suggestions that can be given are as follows: (1) Parents especially mothers can improve feeding practices through habituation in providing nutritional intake and control of poor eating behavior; (2) Adolescents can improve good eating behaviors by establishing positive responses to food and realizing the need of foods for life. This step can be realized through habits such as, eating on time, eating together, paying attention to the type of food consumed, and avoiding eating disorders such as spitting food intentionally and skipping meals and/or no eating; (3) Schools should provide teaching and learning about healthy living, especially good eating behavior; (4) The government should increase the socialization of good eating behavior and education in the family regarding eating patterns and eating disorders among adolescents; and (5) Future research may want to investigate other predicting factors on adolescent eating behavior, such as peers and adolescent knowledge.

References

- Ambrosini, G. L., Oddy, W. H., Robinson, M., O'Sullivan, T. A., Hands, B. P., de Klerk, N. H., & Beilin, L. J. (2009). Adolescent dietary patterns are associated with lifestyle and family psycho-social factors. *Public Health Nutrition*, 12(10), 1807-15. <http://dx.doi.org/10.1017/1368980008004618>.
- Barasi, M. (2009). *At a Glance: Ilmu Gizi* (Hermin, Transl.). Jakarta: Penerbit Erlangga.
- Baumrind, D. (1987). A developmental perspective on adolescent risk-taking behavior in contemporary America. In W. Damon (Ed.), *New Directions for Child Development: Adolescent Health and Social Behavior* (Vol. 37, pp. 93-126). San Francisco: Jossey-Bass.
- Bee, H. L., & Boyd, D. (2004). *The Developing Child* (10th ed.). London: Pearson Education.
- Berge, J. M., Wall, M., Larson, N., Eisenberg, M. E., Loth, K. A., & Neumark-sztainer, D. (2014). The unique and additive associations of family functioning and parenting practices with disordered eating behaviors in diverse adolescents. *Journal of Behavioral Medicine*, 37(2), 205-17. <http://dx.doi.org/10.1007/10865.012.9478.1>.
- Birch, L. L., & Fisher, J. O. (1998). Development of eating behaviors among children and adolescents. *Pediatrics*, 101, 539-549.
- Birch, L. L., Fisher, J. O., & Davison, K. K. (2003). Learning to overeat: maternal use of restrictive feeding practices promotes girls' eating in the absence of hunger. *American Journal of Clinical Nutrition*, 78(2), 215-220. <http://dx.doi.org/10.1093/ajcn/78.2.215>
- Bobak. (2005). *Perilaku Makan Sehat*. Jakarta: Salemba Medika.
- Bronfenbrenner, U. (1994). Ecological models of human development. In *International Encyclopedia of Education* (Vol. 3, 2nd ed., pp. 37-43). Oxford: Elsevier.
- Buri, J. R. (1991). Parental authority questionnaire. *Journal of Personality and Social Assessment*, 57(1), 110-119.
- Giskes, K., Patterson, C., Turrell, G., & Newman, B. (2005). *Health and nutrition beliefs and perceptions of Brisbane adolescents*. *Nutrition & Dietetics*, 62(2-3), 69-75. <http://dx.doi.org/10.1111/j.1747-0080.2005.00002.x>
- Hastuti, D. (2015). *Pengasuhan: Teori dan Prinsip serta Aplikasi di Indonesia*. Bogor: IPB Press.
- Hughes, S. O., Hayes, J. T., Sigman-Grant, M., & VanBrackle, A. (2017). Potential use of food/activity, parenting style, and caregiver feeding style measurement tools with American Indian families: a brief report. *Maternal and Child Health Journal*, 21(2), 242-247. <http://dx.doi.org/10.1007/s10995-016-2145-3>
- Karyadi, L. (1985). *Pengaruh pola asuh makan terhadap kesulitan makan anak bawah tiga tahun (batita)* (Unpublished master's thesis). IPB University, Bogor.
- Kementerian Kesehatan. (2015). *Rencana Strategis Kementerian Kesehatan Tahun 2015-2019*. Jakarta: Kementerian Kesehatan RI.
- Khomsan, A. (2003). *Pangan dan Gizi Untuk Kesehatan*. Jakarta: PT Rajagrafindo Persada.
- Kitzman-Ulrich, H., Wilson, D. K., St George, S. M., Segal, M., Schneider, E., & Kugler, K. (2011). A preliminary test of a motivational and parenting weight loss program targeting low-income and minority adolescents. *Childhood Obesity*, 7(5), 379-384. <http://dx.doi.org/10.1089/2011.0030>.
- Kurniawan, M. Y., Briawan, D., & Caraka, R. E. (2015). Persepsi tubuh dan gangguan makan pada remaja. *Jurnal Gizi Klinik Indonesia*, 11(3), 105-114. <http://dx.doi.org/10.22146/ijcn.19287>
- Larson, N., MacLehose, R., Fulkerson, J. A., Berge, J. M., Story, M., & Neumark-Sztainer, D. (2013). Eating breakfast and dinner together as a family: associations with

- sociodemographic characteristics and implications for diet quality and weight status. *Journal of the Academy of Nutrition and Dietetics*, 113(12), 1601-1609. <http://dx.doi.org/10.1016/j.jand.2013.08.011>.
- Li, J., Loerbroks, A., & Siegrist, J. (2017). Effort–reward Imbalance at work, parental support, and suicidal ideation in adolescents: a cross-sectional study from Chinese dual-earner families. *Safety and Health at Work*, 8(1), 77-83. <http://dx.doi.org/10.1016/j.shaw.2016.09.003>
- Lohman, B. J., Gillette, M. T., & Nepl, T. K. (2016). Harsh parenting and food insecurity in adolescence: the association with emerging adult obesity. *Journal of Adolescent Health*, 59(1), 123-127. <http://dx.doi.org/10.1016/j.jadohealth.2016.03.024>
- Loth, K. A., MacLehose, R. F., Fulkerson, J. A., Crow, S., & Neumark-Sztainer, D. (2013). Food-related parenting practices and adolescent weight status: a population-based study. *Pediatrics*, 131(5), 1443-1450.
- Loth, K. A., MacLehose, R. F., Fulkerson, J. A., Crow, S., & Neumark-Sztainer, D. (2014). Are food restriction and pressure-to-eat parenting practices associated with adolescent disordered eating behaviors?. *International Journal of Eating Disorders*, 47(3), 310-314.
- Loth, K., Wall, M., Choi, C.W., Bucchianeri, M., Quick, V., Larson, N., & Neumark-Sztainer, D. (2015). Family meals and disordered eating in 41 adolescents: Are the benefits the same for everyone?. *International Journal of Eating Disorders*, 48(1), 100-110. <http://dx.doi.org/10.1002/eat.22189>
- Monteagudo, C., Palacín-Arce, A., Bibiloni, M. D. M., Pons, A., Tur, J. A., Olea-Serrano, F., & Mariscal-Arcas, M. (2013). Proposal for a breakfast quality index (BQI) for children and adolescents. *Public Health Nutrition*, 16(4), 639-44. <http://dx.doi.org/10.1017/1368980012003175>.
- Pearson, N., Atkin, A. J., Biddle, S. J. H., Gorely, T., & Edwardson, C. (2010). Parenting styles, family structure and adolescent dietary behaviour. *Public Health Nutrition*, 13(8), 1245-1253. <http://dx.doi.org/10.1017/1368980009992217>.
- Pinquart, M. (2014). Associations of general parenting and parent–child relationship with pediatric obesity: a meta-analysis. *Journal of Pediatric Psychology*, 39(4), 381-393. <http://dx.doi.org/10.1093/jpepsy/jst144>
- Respati, W. S., Yulianto, A., & Widiana, N. (2006). Perbedaan konsep diri antara remaja akhir yang mempersepsi pola asuh orang tua authoritarian, permissive, dan authoritative. *Jurnal Psikologi*, 4(2), 119-138.
- Riset Kesehatan Dasar. (2013). *Badan Penelitian dan Pengembangan Kesehatan Kementerian RI tahun 2013. Global School Health Survey*. Retrieved from <https://www.depkes.go.id/resources/download/general/Hasil%20Riskesdas%202013.pdf>
- Rozenblat, V., Ryan, J., Wertheim, E., King, R., Olsson, C. A., Letcher, P., & Krug, I. (2017). Relationships between self-reported and observed parenting behaviour, adolescent disordered eating attitudes and behaviours, and the 5-HTTLPR Polymorphism: Data From the Australian Temperament Project. *European Eating Disorders Review*, 25(5), 381-388. <http://dx.doi.org/10.1002/erv.2530>
- Sarintohe & Prawitasari. (2006). *Perilaku Makan Tidak Sehat*. Jakarta: Rineka Cipta.
- Story, M., Neumark-Sztainer, D., & French, S. (2002). Individual and environmental influences on adolescent eating behaviors. *Journal of the American Dietetic Association*, 102(3), S40–S51. [http://dx.doi.org/10.1016/s0002-8223\(02\)90421-9](http://dx.doi.org/10.1016/s0002-8223(02)90421-9)

- Tantiani, T., & Syafiq, A. (2008). Perilaku makan menyimpang pada remaja di Jakarta. *Kesmas: National Public Health Journal*, 2(6), 255-262. <http://dx.doi.org/10.21109/kesmas.v2i6.245>
- Wang, H., Kim, J., Su, D., Xu, L., Chen, L. W., & Huang, T. T-K. (2014). Joint influence of individual choices, parenting practices, and physician advice on adolescent obesity, Nebraska, 2008. *Preventing Chronic Disease*, 11(E175), 140210. <http://dx.doi.org/10.5888/pcd11.140210>
- Willett, W. C., Sampson, L., Stampfer, M. J., Rosner, B., Bain, C., Witschi, J., Hennekens, C. H., & Speizer, F. E. (1985). Reproducibility and validity of a semiquantitative food frequency questionnaire. *American Journal of Epidemiology*, 122(1), 51-65. <http://dx.doi.org/10.1093/oxfordjournals.aje.a114086>
- Zahra, J., Ford, T., & Jodrell, D. (2014). Cross-sectional survey of daily junk food consumption, irregular eating, mental and physical health and parenting style of British secondary school children. *Child: Care, Health and Development*, 40(4), 481-491. <http://dx.doi.org/10.1111/cch.12068>