

Effects of Peers on Obesogenic Behavior in Indonesia's Adolescents: A Case Study of Adolescents in the Provinces of DI Yogyakarta, South Kalimantan, and Bali

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ABSTRACT

The obesity prevalence rate continues to increase at the global level, and in Indonesia it is much higher than the international average. For Indonesian women, the obesity rate has doubled. Among children, boys have seen a greater increase than girls. This article discusses the influence of peers on obesogenic behavior in adolescents in the three provinces of Indonesia, namely, DI Yogyakarta, South Kalimantan, and Bali. The participants were high school students living in urban and rural areas. From each school, 100 participants were taken, for a total of 600 students. The findings show that obesogenic behavior in adolescents is influenced by several factors such as the intensity of friendship, having obese friends, and activities with friends

Keywords: Obesity, Teenager, Societal Norms, Obesogenic Behavior

1. INTRODUCTION

In Indonesia, the prevalence of obesity continues to increase and is much higher than the prevalence at the global level. Within the last 14 years (1993–2013), the prevalence of being overweight in Indonesia has increased very rapidly. In men, there was an increase of around 11 points, from 20.8% to 31.2%, while in women the increase was 13%–16%, from 17.7%–31.2% and 32%–48.8%. Meanwhile, at the global level, the increase was 8.1% in men and 8.2% in women. That is, the increase in the prevalence of obesity in Indonesia exceeds that at the global level. For women especially, the twofold increase is much greater. Among children in Indonesia, however, boys have seen a higher increase than girls (Rachmi et al., 2017). In the context of Southeast Asia, Indonesia is ranked first for having the greatest increase in obesity prevalence (ASEAN, 2016).

For adolescents, the problem of obesity is increasingly complex because they have certain characteristics that can potentially encourage obesity, such as eating patterns that include a preference for junk

food, sparse exercise, irregular sleep patterns, and use of electronic devices. In addition, there are factors in both the physical and social environments that encourage adolescents to live an unhealthy lifestyle. These influential environmental factors include peers, the availability of junk food, technological advances, and others. Santrock (2003) stated that the influence of peer groups is very strong on adolescents' behavior. Similarly, De la Haye et al. (2010, 2011) showed that friendship has a great effect on teenagers' lifestyles, from diet to physical activity. Moreover, friendship networks with physical activity are interdependent.

In addition, Vollmer and Mobley (2013) explain that obesogenic behaviors such as dietary intake (consumption of vegetables and fruit), eating behavior, family food frequency, physical activity, and continuous sitting behavior contribute to the increase in obesity. If this is linked to the context of obesity in adolescents, it may mean that obesogenic behavior including diet and a sedentary lifestyle encourage obesity. The obesogenic behavior of adolescents is basically a form of interaction between the subsystem in the body and the suprasystem

around it. Obesogenic behavior will not appear suddenly but rather because there is a strong influence from the existing suprasystem, including the following: advertising in the media, lifestyle of the closest people (parents, partners, peers), food availability, accessibility of food, availability and accessibility of general facilities, values and norms, and culture. The demands of a broader system are then responded to by the subsystem, which is a psychological aspect in adolescents, such as cognitive, emotional, motivational, and problem solving.

Jones et al. (2007) described that the obesogenic environment (environmental factors) is one of the most influential factors in the obesity epidemic. The obesogenic environment consists of two main factors: nutrition and physical activity. Nutrition is closely related to food availability and access to it. Physical activity is related to the level of physical activity determined by the population. Key variables related to the neighborhood include parks and other green spaces for physical activity, perceived security, land use and settlement density, and environmental attractiveness (Lipek et al., 2015).

The regional report on nutrition categorizes the three main factors causing increased fat and obesity in developing countries. First, children who in the first 1,000 days of life experience bad development are at risk of becoming obese or obese in the next life period. Second, the factor of increasing consumption patterns is characterized by the high consumption of foods that are high in sugar and fat and lack nutrients. Third, there are lifestyle factors such as sitting more and reduced time for physical activity (ASEAN, 2016). Another factor that is a main driver of obesity in developing countries is the existence of a food system transformation that ultimately turns to junk food (Lake and Townshend, 2006).

This article investigates the influence of peers on obesogenic behavior in adolescents in the three provinces of Indonesia, namely, DI Yogyakarta Province, South Kalimantan, and Bali. These three provinces were selected because they have the highest rates of obesity as indicated by Basic Health Research data (Penelitian, 2013).

2. METHOD

Data were collected from teenagers who were senior high school students living in urban and rural areas in the three provinces. One urban and one rural area were selected that had the highest obesity rates in each province. School becomes the basis of determining respondents because it is one of the important parties that influence adolescent behavior. The condition of the school is also considered to reflect the students' socioeconomic level. One hundred participants were recruited from each school, for a total of 600 students.

A survey was conducted to collect information about the socioeconomic conditions of the family, living environment, access to health care, utilization of services, and the adolescents' activities at home, school, and with their peers. Data were also collected to determine the food intake and energy expenditure of the adolescent subpopulation.

A descriptive analysis was applied to the two variables. Next, a comparison of the two variables was based on the participants' BMI status. The result was a food intake and energy expenditure profile for the participants, reflecting four categories of BMI: underweight, normal, overweight, and obesity.

As Figure 1 shows, most of the participants' BMI scores fell in the categories of normal or underweight, but if this is not anticipated from their consumption patterns and activities, there can potentially be a shift from normal to overweight or obese conditions. The data also show that being overweight or obese were not unusual.

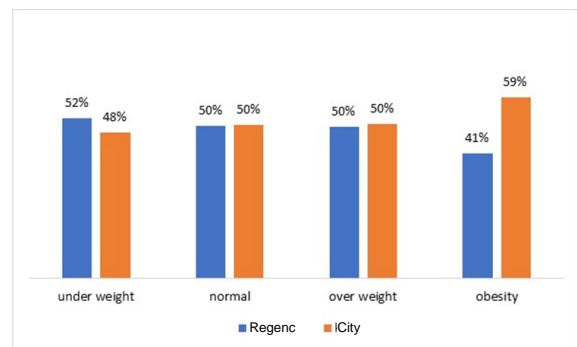


Figure 1 Student BMI Conditions

Similarly, Figure 2 shows that the majority of adolescents in three provinces had a normal BMI condition. However, girls were more likely to have BMI scores in the overweight or obesity categories. This may be due to the different types of activities they engaged in, especially activities with fat-burning movements.

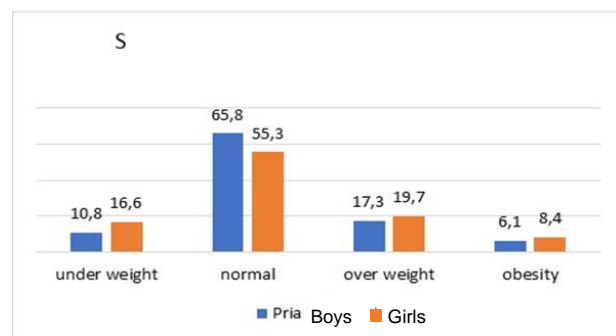


Figure 2 Weight by Gender.

3. RESULT

Family conditions influenced the adolescents' overweight classification. That is, adolescents in all three

provinces who experienced problems with being overweight had overweight family members. Around 70% of the participants had a parent (either a father or mother) who was overweight, and about 18% of the participants had siblings who were overweight. Thus, in total, around 88% of the participants had overweight family members, and this number does not even include the other categories of family obesity. Only about 5% of the adolescents in the study did not come from families with overweight problems (see Figure 3).

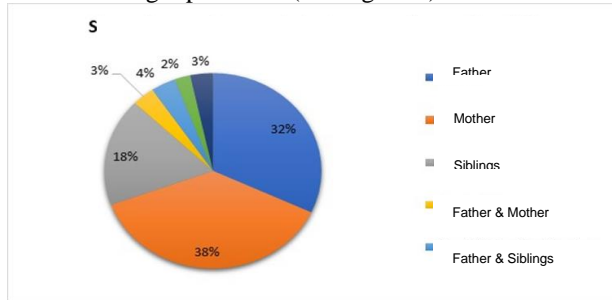


Figure 3 Students with Overweight Family Members.

The data in Figure 4 show that many adolescents had fathers (61%) or mothers (11%) with obesity. This reinforces the argument that adolescents who are at risk for obesity come from families with obesity.

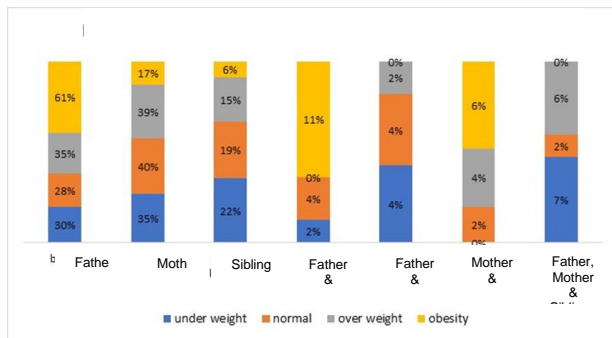


Figure 4 Students with Overweight Family Members.

In addition to family, peers influenced the participants' BMI classifications as overweight or obese. Figure 5 below shows that many participants had friends with obesity. The data strengthen the argument that obesity in adolescents can also occur because of the influence of friends.

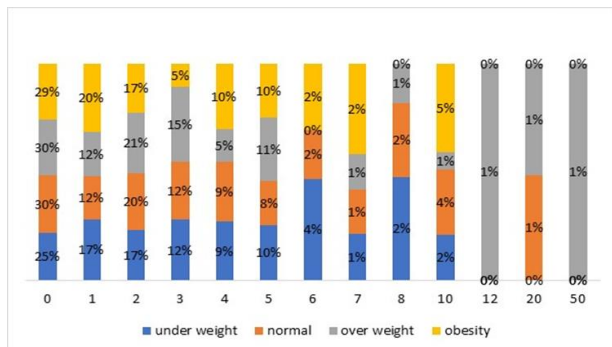


Figure 5 Student Data and Number of Friends with Obesity.

Adolescents who are obese, in addition to being influenced by their family and friends, show certain consumption patterns. Most teenagers are obese because they often snack on or consume unhealthy foods. The data from the three provinces showed that most of the participants with BMI scores classified as underweight to obesity received pocket money ranging from Rp. 10,001 to Rp. 20,000 a day (see Figure 6). This amount of pocket money is not much for buying food and drinks, but that does not mean the teenagers do not consume unhealthy food; instead, given that they have relatively little money, they can only afford to buy unhealthy food and drinks such as foods that are fried with oil that is used several times as well as foods and beverages that contain high levels of sugar or carbohydrates.

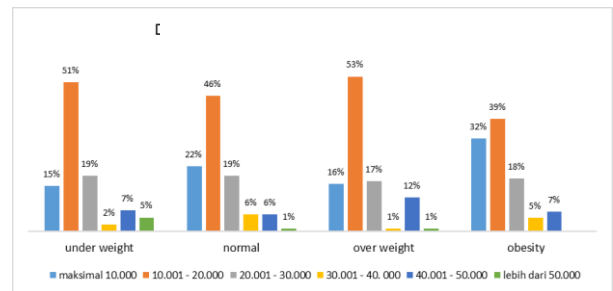


Figure 6 Students' Daily Allowance by Weight Classification

Figure 7 shows that the majority of adolescents enjoyed fried foods, with very few reporting that they did not (5.7% of boys and 9.6% of girls).

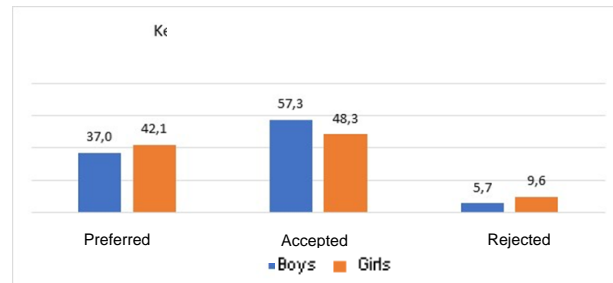


Figure 7 The Habit of Consuming Fried Foods by Gender

As Figure 8 shows, girls tended to consume more fried foods than boys. A majority of the girls in the study reported that they always or often consumed fried foods at school, whereas most of the boys said they seldom or rarely did.

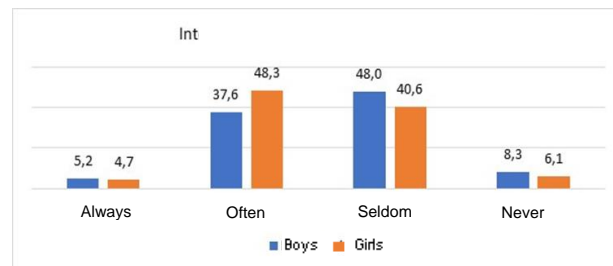


Figure 8 Frequency of Eating Fried Foods at School

The reason teenagers consume fried food is because it is easy and available in the school canteen and also cheap and affordable. As the data in Figure 6 indicate, given the amount of their allowances, fried food is indeed what the participants could afford to consume.

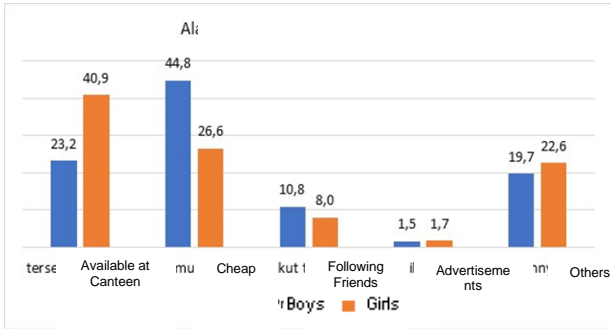


Figure 9 Reason for Buying Fried Food at School

Both boys and girls reported that they “always” or “often” hung out with their friends (see Figure 10). The activities they usually did with friends were eating together (see Figure 11) and other activities such as studying together, looking for entertainment, and playing games or sports.

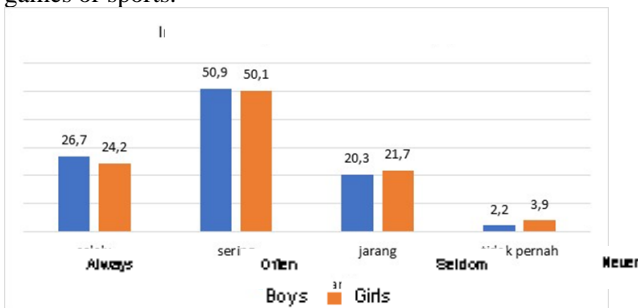


Figure 10 Frequency of Hanging out with Friends

The participants in all three provinces, including both cities and rural areas, had a habit of eating with friends when they did activities. Figure 11 shows that both boys and girls “always” or “often” ate with their friends while doing activities together. This pattern was stronger for girls compared to boys.

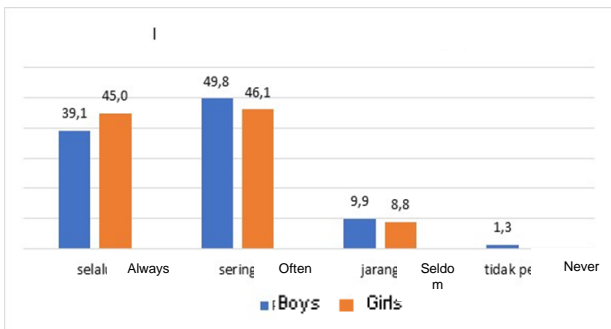


Figure 11 Frequency of Eating Together with Friends

There were gender differences in the participants’ activities when they hung out with friends. Boys tended

to play game activities with their friends (see Figure 12). This could lead to overweight or obesity because most of the games were online games or games on computer devices that involved little or no movement. Plus, when playing, they ate snacks such as potato chips, nuts, and other unhealthy items.

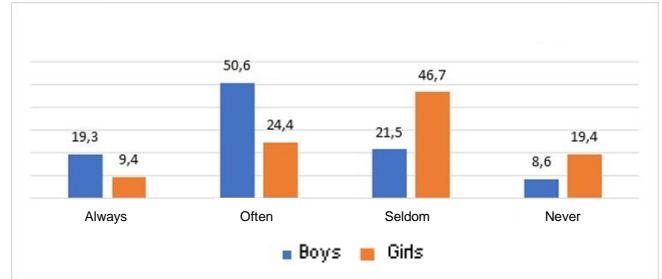


Figure 12 Frequency of Playing Game with Friends

On the other hand, girls did more studying together when they hung out (see Figure 13), but that does not mean that this activity does not involve any risk factors causing adolescents to become obese. During joint learning activities, in addition to not engaging in physical movement, the girls also consumed unhealthy foods such as fried foods and other snacks.

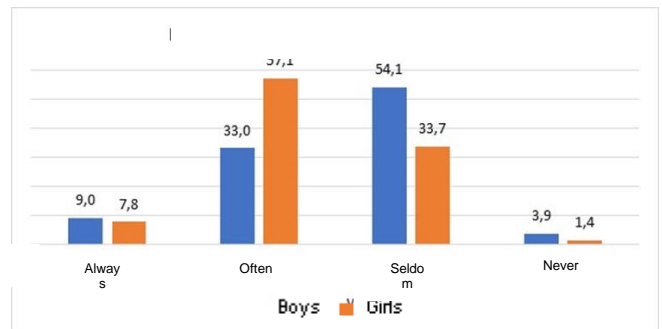


Figure 13 Frequency of Studying Together with Friends

4. DISCUSSION

An important characteristic of adolescents is that they have a strong need to be liked and accepted by friends and a wider peer group. They feel comfortable when they have this and, vice versa, will experience extreme stress and fear when they are expelled from the peer group. For many teens, how they are seen by their peers is the most important aspect of life. (Santrock, 2003)

Peers are individuals who have the same age and maturity. The main function of peers is to provide information about the world outside the family. From their peer group, teens receive feedback about their abilities. For instance, they learn whether what they do is better, the same, or worse than what other teens do. Studying this at home would be more difficult because their siblings are usually older or younger, and competition can lead to more comparisons. (Santrock, 2003)

Peer influences and friendships, especially in adolescent growth compared to the previous period, have a close relationship with intimacy. Intimacy is an agreement between two people to share knowledge, thoughts, and personal feelings. Teenagers talk about their thoughts and feelings as well as their hopes and fears, and help each other to understand what is happening with their parents, teachers, and friends. They are generally more comfortable sharing intimate information with their friends than with their parents. For example, when there is a conflict, teens are more likely to tell friends because they consider that their friends will be better able to provide support them and help them overcome the problem. (Santrock, 2003)

The form of peer interaction is influenced by the context, including the type of teen peer interaction and the situation or location (school, neighborhood, community, religious settings, sports, etc.), as well as the culture in which the teenagers live. This peer context is also influenced by factors such as how effective the role of parents is in regulating teen peer interactions and whether adults are present. (Santrock, 2003)

Furthermore, teenagers spend a lot of time with their peers and friends. Indeed, as Santrock (2003) points out, they spend twice as much time with their friends than their parents. Arnett mentions that teenagers fill their free time with various activities including watching concerts or going to bars with friends. These activities are carried out often even within a one-week period (Santrock, 2003). That is, friends have a great influence on how teens spend their free time.

Peers can have both positive and negative influences. Recent studies show that teens who interact with peers who are pro-social have good self-control. In terms of how children relate to peers, those with deviant behavior have a low level of self-control. (Santrock, 2003)

Adolescents explore the principle of fear and justice through disagreement with each other. They also learn to be keen observers of the interests and perspectives of their friends so that they can easily integrate themselves into ongoing peer activities. Moreover, teens learn to be smart and sensitive partners in intimate relationships by establishing close friendships with their chosen peers. They bring these intimacy skills forward to help shape the foundation of future dating and marriage relationships. (Santrock, 2003)

There are also theories and research that emphasize the negative influence of peers on adolescent development. Being rejected or ignored by peers encourages teenagers to feel alone and hostile. Furthermore, rejection and neglect by peers correlate with individual mental health. Recent studies have shown that low parental control is associated with high levels of naughty behavior in adolescents, which is associated with affiliation with naughty peers. (Santrock, 2003)

Friends are closer than peer groups. Santrock (2003) summarized the importance of friendship for adolescents in six categories as follows.

1. **Companionship (friendship):** Friendship provides teens with familiar partners, i.e., people who want to spend time with them and collaborate on certain activities.
2. **Stimulation:** Friendship provides teenagers around information, excitement, and relationships.
3. **Physical support:** Friendship provides resources and assistance.
4. **Ego support:** Friendship provides hope for support, encouragement, and feedback that will help teens maintain their impression of themselves as individuals who are competent, attractive, and useful.
5. **Social comparison:** Friendship provides information about where teenagers stand vis-a-vis others and whether they are doing well.
6. **Intimacy affection.** Friendship provides adolescents with warmth, closeness, trusting relationships with other individuals, and a relationship that involves self-disclosure.

5. CONCLUSION

The effect of peers on obesity in adolescents becomes significant when associated with food availability and accessibility to food. Thus, peers alone are not enough to affect the nutritional status of adolescents but rather adolescents are also influenced by the type of food they can access, and whether healthy or unhealthy food is accessible has a big influence on the habits that teenagers have when hanging out with friends. This study shows that food that is liked or received by a peer is greatly influenced by its availability and price.

Therefore, to overcome the problem of obesity in adolescents, it is crucial to study and improve the availability and accessibility of healthy food, both at home and in schools.

To solve the problem of obesity, especially in adolescents, there must be clear norms or rules in terms of religious norms, community norms, and government policies, especially those related to consumption patterns, and also the provision of facilities and infrastructure for youth activities.

According to Midgley, every effort to solve a social problem should have an institutional dimension (Midgley, 1995). Accordingly, the problem of obesity must have an institutional dimension so that it can be handled properly. This institutional dimension can be seen from the following:

1. Handling the problem of obesity must be dealt with through a formal organization formed by the government, especially to overcome the problem among vulnerable groups.
2. Obesity must be managed through various levels such as the local level, local government level (city/regency), regional level (provincial level), and state level (social ministry). Each level coordinates with each other in terms of fostering and monitoring to handle the obesity problem. Coordination between various levels of government must be managed properly.
3. The obesity problem must be managed by professional staff from various fields such as the health disciplines, social sciences, and education.

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