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Peer support and healthy lifestyle among adolescents in urban areas in Indonesia

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ABSTRACT

Unhealthy lifestyles among adolescents in urban areas are still a problem. Peers are role models in adolescent's lifestyle. However, little is known about the peer support in eating behavior, sedentary lifestyle and physical activities, which thus needs to be explored. This study aims to analyze the relationship between peer support and adolescent lifestyle. This study used a cross-sectional design with a sample size of 105 adolescents using proportional stratified random sampling. Data were collected by questionnaire. The Spearman rho test was performed to identify the relationship between peer support within a sedentary lifestyle and eating behavior, while to identify the relationship between peer support and physical activity using pearson, the level of significance was determined as $p \leq 0.05$. The results showed that there was a relationship between peer support and eating behavior ($p=0.012$; $r=0.243$) as well as adolescents' physical activity ($p=0.001$; $r=0.324$). There is no relationship between peer support and a sedentary lifestyle both on weekdays ($p=0.181$; $r=0.131$) and on weekends ($p=0.735$; $r=0.033$). The results show that peers have an important role in improving healthy lifestyle patterns in adolescents, especially in eating behavior and physical activity, so peer involvement interventions to improve healthy lifestyles in adolescents are recommended.

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1. INTRODUCTION

Adolescents are vulnerable to unhealthy lifestyles. Adolescence is a critical period that determines an individual's health and well-being, where there is a transition from physical, social, emotional, and cognitive aspects that can lead to certain behaviors [1]. Adolescents in urban areas tend to choose food that is trending, follow their peers and tend to choose fast food compared to food with good nutritional quality [2]. Currently, there is also a tendency for teenagers in urban areas to use screen time media which triggers sedentary activities for social media, watching films or playing games, a penchant for consuming fast food, foods high in sugar and salt [2]–[5]. The current phenomenon is a significant increase in the incidence of obesity and diabetes mellitus in children and adolescents. This condition is caused by an unhealthy lifestyle such as unhealthy eating behavior, sedentary lifestyle and lack of physical activity [6].

Adolescence is a transition period towards adulthood, an unhealthy lifestyle will have an impact on current health until adulthood [7]. Adolescents have a tendency to follow the surrounding environment as a reference for choosing a lifestyle, such as peers who have a role in shaping adolescent behavior [8]. Research

shows that 43.3% of adolescents in one country in Southeast Asia consume fast food 4-7 days per week, 60.6% of children and adolescents in East Java have screen time of more than two hours per day for activities outside of school needs and 29% of early adolescents never exercise in a week [7]. Adolescents in the city of Surabaya live a modern life with an unhealthy lifestyle, they like to eat fast food and sedentary activities such as hanging out rather than exercising [9]. The behaviors of eating unhealthy food and engaging in sedentary activities are recognized by teenagers as obstacles to adopting a healthy lifestyle [10]. Based on their developmental characteristics, adolescents tend to trust and feel comfortable with their peers [11], Although many factors will influence adolescent behavior, such as the environment and parents [10], [11]. For adolescents, peers are role models and sources of information in their lifestyle [12]. However, little is known about the relationship between peer support and a healthy lifestyle among adolescents in urban areas.

The literature review states that previous studies outside Indonesia identified that peers have a lot of influence on unhealthy food consumption and physical activity [13]–[15]. Several studies related to peers in Indonesia identified peer relationships with risky behavior in adolescents, such as smoking behavior, free sex, bullying and also reproduction health [16]–[18]. Eating behavior, sedentary activity and physical activity in adolescents are interrelated lifestyle behaviors, which are at risk of causing obesity and non-communicable disease [19]. However, there is still little research found that is specific to the character of adolescents in urban areas in Indonesia which identifies the relationship between peer support and the three lifestyle variables. This research is important and urgent to analyze the influence of peer support on teenagers' healthy lifestyles which include sedentary activities, physical activity and eating behavior.

2. METHOD

2.1. Research design

A descriptive analytic design with cross-sectional approach was used to conduct the study. The population were adolescents in urban areas in Surabaya, Indonesia. This study was conducted from July-Agust 2023. The independent variable in this research was peer support for a healthy lifestyle for adolescents, while the dependent variable is eating behavior, sedentary lifestyle and physical activity.

2.2. Sample and research procedure

The inclusion criteria for this study were adolescents aged 13–15 who attended junior high schools in the three sub-districts in the city of Surabaya. Determining the sample size used the Slovin formula with a result of 105 respondents and determining the number of samples in each sub-district using proportional stratified random sampling [20]. Data was collected using a questionnaire, namely the Peer Support Questionnaire (PSQ), to measure peer support variables. Questionnaire to measure adolescent eating behavior using the Adolescent Food Habits Checklist (AFHC), which consists of the components avoidance of specific energy-dense foods, selection of low-fat alternatives, consumption of fruit and vegetables, and snacking behavior; questionnaire to measure sedentary activity using the Adolescent Sedentary Activity Questionnaire (ASAQ); and questionnaire to measure physical activity using the Physical Activity Questionnaire for Adolescents (PAQ-A). The questionnaire has been tested for validity and reliability, and all are declared valid and reliable.

Research conduct after obtaining permission from the Department of Education in Surabaya and Schools where the research was conducted. Students with parents who have filled out and agreed to the informed consent to take part in the research are collected and fill out the questionnaire that has been prepared by the researcher. The time required by respondents to fill out the questionnaire is around 20 minutes.

2.3. Data analysis

The results of the normality test using Kolmogorov Smirnov showed that the variables of sedentary activity and eating behavior were not normally distributed, to identify the relationship between peer support and sedentary activity and eating behavior, Spearman's rho was used with a p-value<0.05. Meanwhile, the normality test for the physical activity variable was normally distributed so that to determine the relationship between peer support and physical activity in adolescents, the Pearson test was used with a p-value<0.05. The reporting in this text complies with STROBE compliance. This research received ethical approval from the Health Research Ethics Committee, Faculty of Nursing, Universitas Airlangga, Indonesia, No: 2939-KEPK.

3. RESULTS AND DISCUSSION

Table 1 shows the characteristics of the respondents. Most respondents were 13 years old (60%), female (57.1%), Javanese (94.3%), the duration of deep sleep was less than nine hours (64%), they used

gadgets 30 minutes before bed (82.9%), and on average, the average use of gadgets and watching TV per day is more than two hours (81.9%). Table 2 shows the results of the descriptive demographic analysis of respondents according to the characteristics of age, weight, height, and body mass index (BMI). Age characteristics in this study ranged from 13 to 15 years (13.53±13.00), body weight 28 to 87 kilograms (50.36±47), height 136 to 179 centimeters (157±158), and body mass index (20.28±18.83). Table 3 shows the item scores for each variable. This research shows that the sedentary lifestyle weekday in adolescents ranges from 160 minutes to 3,000 minutes (943.92±583.09); the sedentary lifestyle weekend in adolescents ranges from 240 minutes to 5,471 minutes (1146.25±797.86); eating behavior with a score of 3 to a score of 21 (12.8±4.17); physical activity with a score of 36 to 108 (69.53±14.93); and peer support with a score of 55 to 103 (79.48±9.40).

Table 1. Characteristics of respondents (n=105)

Characteristics	n	%
Age		
13 years old	63	60%
14 years old	28	26.7%
15 years old	14	13.3%
Gender		
Male	45	42.9%
Female	60	57.1%
Tribe		
Javasenese	99	94.3%
Maduresе	2	1.9%
Sundanese	1	1%
Banjar	1	1%
Batak	1	1%
Dayak	1	1%
Duration of deep sleep		
<9 hours	64	61%
9-11 hours	33	31.4%
>11 hours	8	7.6%
Use of gadgets 30 minutes before going to bed		
Yes	87	82.9%
No	18	17.1%
Average playing gadgets and watching TV per day		
<2 hours	19	18.1%
>2 hours	86	81.9%

Table 2. Descriptive analysis of the respondent's demographics (n=105)

Characteristics	Minimum	Maximum	Mean	SD
Age	13	15	13.53	13.00
Weight (Kg)	28	87	50.36	47
Height (Cm)	136	179	157	158
Body Mass Index (BMI)	12.86	32.75	20.28	18.83

Table 3. Item scores of variables (n=105)

Item	Minimum	Maximum	Mean	SD
Sedentary lifestyle weekday (minutes)	160	3,000	943.92	583.09
Sedentary lifestyle weekend (minutes)	240	5,471	1146.25	797.86
Eating behavior	3	21	12.82	4.17
Physical activity	36	108	69.53	14.93
Peer Support	55	103	79.48	9.40

Table 4 shows detailed item scores for peer support. Peer support consists of five factors: informational support, emotional support, instrumental support, validation or feedback, and companionship support. The information support factor has five items for the highest average on peer support for a healthy lifestyle and youth understanding for a healthy lifestyle (4.01±0.67), while the lowest average on peer support is getting teenagers involved in health counseling (3.69±0.77). The emotional support factor with four items for the highest average on the peer item influences adolescents to live a healthy lifestyle (4.28±0.88), while the lowest average on the peer item invites physical activity in their spare time (3.63±0.82). The instrumental support factor with three items for the highest average on the peer item provides suggestions for a healthy lifestyle (3.90±0.70), while the lowest average on the peer item provides

facilities for doing physical activity together (3.66±0.99). The validation/feedback factor with four items has the highest average on the item eating healthy food with peers and the lowest average on items of praise given by peers regarding routine physical activity (3.77±0.76). The companionship support factor with five items for the highest average is in the opinion of adolescents and peers who eat balanced, nutritious foods (4.32±0.75), while the lowest average is in the absence of peer support to engage in physical activities together (2.64±1.04).

Table 4. Item scores of peer support (n=105)

Item	Mean	SD
Informational support		
Peer support increases my motivation to live a healthy lifestyle (eating a balanced nutritional diet and participating in regular physical activity)	3.88	0.79
Peer support makes me actively involved in health counseling	3.69	0.77
When I received peer support to have a healthy lifestyle, I had previously understood how to live a healthy lifestyle (eating nutritious food and participating in regular physical activity)	3.89	0.72
I think that having the support of my peers to adopt a healthy lifestyle will make it easier for me to live a healthy lifestyle	4.01	0.67
Peer support helps me find healthy food references	3.89	0.75
Emotional Support		
I do more physical activity in my free time with my friends	3.63	0.82
When my friend likes to eat balanced, nutritious food, then I will also like to eat balanced, nutritious food	3.95	0.72
When my friends don't live a healthy lifestyle, I don't either	4.28	0.88
My friends help me access a healthy lifestyle by sharing healthy lifestyle information with teenagers	3.84	0.83
Instrumental Support		
My close friends help provide facilities for doing physical activities together (balls and the like)	3.66	0.99
Most of my friends only encourage me to live a healthy lifestyle (eating balanced nutritional food and participating in regular physical activity)	3.67	0.79
When I am given advice by my friends regarding a healthy lifestyle, I will be better prepared to live a healthy lifestyle	3.90	0.70
Validation/Feedback		
Praise given by my friends because diligent physical activity (60 minutes every day) will make me more excited to do it	3.77	0.76
The compliments given by my friends for routinely consuming balanced nutritional food give me the spirit to continue doing it	3.80	0.74
The praise my friend gave me for leading a healthy lifestyle made me even more enthusiastic about living a healthy lifestyle	3.99	0.79
Eating food with balanced nutrition (fruits, vegetables, carbohydrates, and protein) with my friends will be much more fun	4.17	0.68
Companionship Support		
My friends and I think that eating balanced nutrition will help prevent obesity and disease	4.32	0.75
I always didn't have friends to do physical activities with	2.64	1.04
My peers always provide positive support for me to live a healthy lifestyle, even though I find it very difficult to do so	3.75	0.78
Peers really have a big influence on the lifestyle that I live	3.56	0.81
My peers always invite me to eat fast food when we're hanging out together	3.20	0.87

Table 5 shows the results of the analysis of the relationship between peer support on teenegers' within sedentary lifestyle weekdays, sedentary lifestyle weekends, eating behavior, and physical activity. The statistical test results of the relationship between peer support and sedentary lifestyle weekdays showed that the results were not significant (p=0.181; r=0.131). The statistical test results of the relationship between peer support and sedentary lifestyle weekends showed that the results were not significant (p=0.735; r=0.033). The results of statistical tests on the relationship between peer support and eating behavior show that there is a significant relationship (p=0.012; r=0.243). The results of statistical tests on the relationship between peer support and physical activity show that there is a significant relationship (p=0.001; r=0.324). A fairly strong relationship was shown between peer support and physical activity.

Table 5. The relationship of peer support within sedentary lifestyle weekday, sedentary lifestyle weekend, eating behavior, and physical activity (n=105)

Variable	Mean	SD	r	p-value
Sedentary lifestyle weekday	943.92	583.09	0.131	0.181
Sedentary lifestyle weekend	1146.25	797.86	0.033	0.735
Eating behavior	12.82	4.17	0.243	0.012
Physical activity	69.53	14.93	0.324	0.001

Peers have quite an influence on teenagers' lifestyles. Teenagers who are close to peers who adopt a healthy lifestyle will also implement healthy living in their daily lives. The peer support found in this research does not influence the sedentary lifestyle of teenagers living in urban areas in Indonesia; however, through this research, it was identified that peers play a strong role in teenagers' active physical activity. Previous research stated that teenagers often interact with peers through daily active activities [21]. Previous research shows that physical activity in adolescents is a factor related to adolescent health, which is also associated with healthier food choices in adolescents [22]. This research found that peers have a lot of influence on teenagers' active activities, such as playing sports or playing actively. They think that peers provide support to accompany each other in physical activities active every day or exercise. Physical activity has enormous benefits for adolescents, such as improving their physical fitness, cardiometabolic health, bone health, cognitive outcomes, and mental health [23]. The importance of active physical activity for teenagers with the aim of supporting improved health in teenagers [11].

A sedentary lifestyle is largely influenced by family factors, such as socio-demographic characteristics and parental models, as well as facilities that support physical activity in the home environment [24]. Most of the sedentary activities are carried out by teenagers when they are at home, such as watching TV, playing handphone games, or sitting and relaxing at home [25]. Sedentary lifestyles in children and adolescents are also influenced by home facilities, the environment, and social interaction [5], [26]. Therefore, in this study, peers do not play a big role in sedentary lifestyle. Previous research states that when at home, teenagers lose interaction with peers [27]. However, other research states that in the current digital era, teenagers' interactions with peers are carried out through online activities such as playing online games or interacting via social media when they do not meet their peers directly [28]. Teenagers spend a lot of time together with their peers when doing activities at school. The role of parents as companions at home also plays a big role in the lifestyle chosen by teenagers [29].

This research found that peer support influences teenagers' eating behaviors. A previous review found something similar: that apart from parents, peers also have an influence on teenagers' eating behavior, and the influence tends to lead to unhealthy food consumption behavior [13]. Other research states that, apart from peer support, food literacy factors by teenagers and family support in providing healthy food also have a significant relationship with healthy eating behavior [30]. Other research also stated that consumption of fast food and sweet drinks that are high in calories and low in nutritional quality is influenced by peers [31], [32]. Previous research states that teenagers who eat healthy food and rarely consume junk food have good psychological well-being and have good moods and emotions [22]. In this study, it was identified that teenagers would feel happy if they ate balanced nutrition with their peers. This shows that teenagers' behavior tends to imitate the behavior of their peers [33]. Teenagers who have peers with healthy eating behaviors will also have healthy eating behaviors. Previous research states that teenagers tend to choose food based on trends that are popular with their age group [32]. Previous research states that there are other factors that can also influence teenagers' eating behavior, such as social factors (family, peers, community), physical factors (fast food outlets, convenience stores, schools, street vendors), and also the environment around teenagers [5]. The consumption of fast food or unhealthy food, which is currently popular among teenagers living in urban areas, is also the result of influence from their peers [9].

4. CONCLUSION

This research uniquely found that peers have tendencies influence Adolescents' active lifestyles and eating habits. Sedentary behavior by adolescents is not influenced by peers. This research recommends the need to strengthen peer support through development programs that empower peers by increasing the knowledge and skills capacity of peers in positive physical activity and healthy eating behavior as an effort to improve healthy lifestyles among adolescents living in urban areas in Indonesia.

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