

Relationship Between Online Food Ordering Time and Physical Activity with The Nutritional Status of Students at Medan Area University

^{1*}Laila Apriani Hasanah Harahap, ²Eva Flourentina Kusuma Wardhani
^{1,2}Faculty of Public Health, Universitas Teuku Umar, Aceh, Indonesia

Corresponding author: Laila Apriani Hasanah Harahap, e-mail: Lailaapriani@utu.ac.id

Co-author: EFKW : evaflourentina@utu.ac.id

Submitted: 28/10/2022 **Revised:** 19/11/2022 **Accepted:** 20/02/2023 **Published online:** 18/04/2023

doi: <https://doi.org/10.7804/j-kesmas.v7i2.6936>. **How to cite this article:** Laila Apriani Hasanah Harahap, Eva Flourentina Kusuma Wardhani (2023). Exploring relationship between online food ordering time and physical activity with the nutritional status of students at medan area university. *J-Kesmas: Jurnal Fakultas Kesehatan Masyarakat (The Indonesian Journal of Public Health)*. 10(1): 70-73

Abstract

The emergence of online food ordering applications. Currently, it is widely used by various groups of people including students. With the online food ordering application, it provides convenience in mobilization and in ordering food. The negative impact of using online applications is that there will be reduced physical activity used to buy food. Low physical activity will have an impact on increasing the risk of non-communicable disease incidence. Excessive eating patterns, carried out at inappropriate times (night) and lack of physical activity can cause poor metabolism so that it will cause more nutrition. The type of research used is descriptive research, with a cross-sectional research design, using the survey method. The population is students of the faculty of economics at Medan Area University. The sampling technique used is nonprobability sampling with incidental sampling technique, which is a sampling technique based on chance, that is, anyone who by chance or incidentally meets the researcher can be used as a sample, if it is seen that the person who happened to be met is suitable as a data source. The number of samples in this study were 100 respondents. Based on the results of the analysis using the Chi-Square test, it is known that research on the relationship between online food ordering time and physical activity with nutritional status explains that the value of $p = 0.004$ (physical activity) and $p = 0.006$ (online ordering time).

Keywords: Online Food Ordering Time, Physical Activity, Nutritional Status

Introduction

The rapid development of technology makes it easier for everyone to do various kinds of things, one of which is the emergence of online food ordering applications. Currently, it is widely used by various groups of people including students. With the online food ordering application, it provides convenience in mobilization and in ordering food. The easy payment system and fast service make this application grow rapidly among students or teenagers.

Health problems in adolescents are one of the important things in the life cycle because health behavior patterns in adolescence will contribute to most health problems in adulthood. During adolescence, there will also be an increase in the speed of growth / growth spurt which is strongly influenced by nutritional needs and status. Factors associated with adolescent nutritional status include family income, dietary patterns, health problems, malnutrition, knowledge and education, freedom, time aspects, physical activity and body image (Rahayu, 2020).

Adolescents can be categorized as vulnerable to nutritional problems that put them at risk for health.

Currently, Indonesia is faced with a double burden of nutrition problems, namely undernutrition and overnutrition or obesity (Kemenkes RI, 2018).

The use of online delivery applications has both positive and negative impacts. The negative impact is that there will be reduced physical activity used to buy food (Agustina 2013). Low physical activity will have an impact on increasing the risk of non-communicable disease incidence (Agustian et al. 2021).

Nutritional status is the state of health of the subject's body based on BMI which is divided into severe thinness, mild thinness, normal, mild fatness, and severe fatness (MOH 2014). Inadequate or excessive nutritional status will affect quality of life in later life (Nursilmi et al. 2017).

Changes in diet and physical activity result in more and more people experiencing overnutrition problems. Excessive diet and lack of physical activity can lead to poor metabolism that will cause overnutrition. Overnutrition is considered important because it can cause degenerative diseases that are currently prevalent in Indonesia.

Excessive appetite in adolescents at night is the percentage of daily food consumption after dinner, there

are 29.2% experiencing night hyperphagia with total daily calories after dinner $\geq 25\%$ and 6.2% with total dinner calories $\geq 50\%$ (Lundgren, et al, 2013). Adolescents who are in the age of 15-18 years, is one of the populations that are vulnerable to night eating syndrome and deviant eating behavior. (Parastika, 2012).

A good dinner time is 3 or 4 hours before bedtime so that the digestive system has enough time to work and then rest (Bandin, 2015). Eating at night is not good for the body's metabolism and health. This is because there is no more physical activity done in general at night. Eating at night coupled with consuming foods that are high in carbohydrates and fat can lead to overweight or obesity.

This study aims to analyze the relationship between online food ordering time and nutritional status and analyze the relationship between physical activity and nutritional status of students. This research is expected to be a source of reference for students who want to make scientific papers and learning for future research and for the community. For researchers, as a learning material and also experience and as a means to apply the knowledge gained for the benefit of the wider community.

Methods

The type of research used is descriptive research, with a cross-sectional research design, to determine the relationship between online food ordering time and physical activity with nutritional status in students, using the survey method, which uses a questionnaire as the main instrument.

The population is Economics faculty students at Medan Area University. The sampling technique used is nonprobability sampling with incidental sampling technique, which is a sampling technique based on chance, namely anyone who happens or incidentally meets the researcher can be used as a sample, if it is seen that the person who happened to be met is suitable as a data source. The number of samples in this study were 100 respondents. The data collection used in this study was to use a questionnaire (questionnaire) distributed directly to respondents.

Data analysis in this study used univariate and bivariate analysis which was used to determine the relationship between each variable.

Results

Characteristics of respondents

In the following table 1 which explains that the majority who order food online are women as many as 74 people (74%) and men as many as 26 people (26%). The age of students who order food online in this research is 18-24 years, as many as 40 people (40%)

students aged 19 years who order food online and students aged 23-24 are only 2 people (2%) (table 1).

Table 1. Characteristics of Respondent

Characteristics	Number	Percentage
Age		
a. 18-21Th	92	92,0
b. 22- 24 Th	8	8,0
Gender		
a. Male	26	26,0
b. Female	74	74,0
Total	100	100,0

Data on the time of online food ordering was obtained by asking about when online food ordering is done in the morning, afternoon, evening (not at night) and night. Table 2 shows that most online food orders are made at night.

Table 2. Online food ordering time

Time to order food online	Total	Percentage
Morning(08:00 - 10:59)	12	12.0
Day (11:00- 14:59)	37	37.0
Afternoon(15:00 - 17:59)	13	13.0
Night (18:00 - 23:59)	38	38.0
Total	100	100.0

To determine the level of physical activity of respondents in this study, namely using PAL values. The results of physical activity research obtained through questionnaires, respondents often spend their time sitting - sitting both during class and at work after college. Table 3 shows that the majority of physical activity categories in the study were inactive.

Tabel 3. Physical Activity

Physical Activity	Total	Percentage
Less Active	79	79.0
Active	21	21.0
Total	100	100.0

Body Mass Index of respondents includes measurement of Body Weight (kg) divided by the square of Height (m). The results of measuring body mass index in adolescent girls show that as many as 36 people (36.0%) with obesity and as many as 64 people (64.0%) who are not obese can be seen in Table 4.

Tabel 4. Student nutritional status

Nutritional Status	Total	Percentage
Normal	64	64,0
Obesity	36	36,0
Total	100	100,0

In table 5 which explains that as many as 2 people with obesity have active activities and as many as 34 people with less active activities.



Table 5. Relationship between physical activity and nutritional status

Physical Activity	Status Gizi				Total		P
	Obesity		Normal		N	%	
	n	%	n	%			
Less Active	34	94,4	45	70,3	79	100	0,004
Active	2	5,6	19	29,7	21	100	
Total	36		64		100		

Table 6 below explains that as many as no (0) respondents with obesity ordered online food not at night and as many as 36 or all those with the obesity category ordered online food at night.

Table 6: Relationship between online food ordering time and nutritional status

Time to order food online	Nutritional status				Total	P
	Obesity		Normal			
	n	%	n	%		
Night	36	100	41	64,1	77	0,006
Not night	0	0	23	35,9	23	
Total	36		64		100	

Discussion

In this study the majority of respondents had activities in the less active category, this was because respondents spent more time sitting during class hours, after returning from college some respondents chose to sit back while playing cellphones. Long enough activities on campus make respondents lazy to do heavy or active activities such as exercising even on holidays.

Based on the results of statistical tests in this study, it proves that there is a relationship between physical activity and obesity with a p value = 0.009. This study is in line with Fitriyani's research (2017), where there is a relationship between physical activity and obesity, namely the value ($p = 0.000 < 0.05$) with $r: 0.855$ is a very strong relationship because the higher the incidence of obesity, the lighter the physical activity, and the heavier the physical activity, the lower the incidence rate.

Based on research by Wulandari (2016), the results of statistical tests with chi square obtained a p value (0.000) < 0.05 then H_0 is rejected or H_1 is accepted so that it can be interpreted that there is a relationship between physical activity and obesity in adolescents in Kendari.

Physical activity carried out by obese people shows that most respondents do light physical activity, especially those with obese nutritional status, both on college days and during vacations (Nuraliah et al, 2013). Based on Kurniawati's research (2016), it shows that there is a relationship between physical activity and obesity, namely a p value = 0.000 with an OR

value = 29.824 with 95% (CI) = 6.350 - 140.080, meaning that respondents with moderate physical activity have a tendency towards obesity incidence of 29.824 times compared to respondents with high activity.

Based on the results of research by Triandhini (2018), there is a significant relationship between physical activity and the incidence of overweight ($p=0.003$). Someone who has normal weight does more heavy physical activity (15.38%) than those who have more weight (1.92%). Light physical activity is more done in overweight (46.15%) compared to those with normal weight (21.15%). This study is in line with the research of Hardiansyah, et al (2014), namely there is a relationship between physical activity and overweight or obesity obtained a value of $p = 0.000$.

Conclusion

Of the two variables, namely online food ordering time and physical activity based on the results of the research conducted, there is a relationship between physical activity and nutritional status and there is no relationship between online food ordering time and nutritional status. That is because many factors can affect a person's nutritional status. The nutritional adequacy of respondents in this study was mostly poor or not good, this was due to the lack of variety in the types of food consumed so that it had an impact on the nutritional needs of each respondent.

Acknowledgement

The authors would like to sincerely thank their academic advisors for their guidance and support throughout the research process. The authors also thank Universitas Indonesia and Universitas Teuku Umar for providing the necessary resources and facilities to conduct this study. Additionally, the authors acknowledge the funding provided that made this research possible

Author Contribution and Competing Interest

LAHH provided the writing concept, supervised the writing process, analyzed the data and wrote the article, The other authors provided input and suggestions to improve the article. All authors contributed to the writing of the article.

References

- Agustian H, Eka Putra A, Hendsun H, Chandra H, Firmansyah Y, Chandra Sumampouw H, Firmansyah Y. 2021. An overview of student physical activity during distance learning and the COVID - 19 pandemic. *J Med Hutama*, 2(1):726-732.
- Agustina RK. 2013. Analysis of factors that influence



the consumption patterns of boarding students in Makassar City [thesis]. Makasar: FEB UIN.Anonymous. Accessed 2020. Mims Indonesia. Ethyl Chloride.

Bandín C, Scheer FA, Luque AJ, Ávila-Gandía V, Zamora S, Madrid JA, Gómez-Abellán P, Garaulet M. Meal timing affects glucose tolerance, substrate oxidation and circadianrelated variables: A randomized, crossover trial. *Int J Obes (Lond)*. 2015;39(5):828-33. <https://doi.org/10.1038/ijo.2014.182>.

[Department of Health of the Republic of Indonesia. 2014. Regulation of the Minister of Health of the Republic of Indonesia Number 5. Jakarta: Indonesian Ministry of Health.

Lundgren, D. J., 2013. The Prevalence of Night Eating Syndrome and Binge Eating Disorder Among Overweight and Obese Individuals. *HHS Public Access*, pp. 233-236.

Nursilmi, Kusharto CM, Dwiriani CM. 2017. Relationship between nutrition and health status with quality. *MKMI*, 13(4):369-379. <https://doi.org/10.30597/mkmi.v13i4.3159>

Parastika, T. D., 2012. Overview of Factors Associated with Night Eating Syndrome in Students of the Faculty of Engineering, University of Indonesia, Depok: s.n.

Rahayu, T.B., 2020. Analysis of Factors Affecting the Nutritional Status of Adolescent Girls. *J. Vocational Health*. 6, 46.<https://doi.org/10.30602/jvk.v6i1.158>

Nuraliyah, Syam, Aminuddin & Hendrayati. (2013). Physical Activity and Sleep Duration in Overweight and Obese Students of Hassanudin University. Nutrition Science Study Program, Faculty of Public Health. Hasanudin University.

Hasdianah, HR, (2014). Nutrition, Nutrition Utilization, Diet, and Obesity. Yogyakarta: Nuha Medika.

