

Original Article

Food Security Status and Coping Strategies Among Adolescents During the Covid-19 Pandemic in Mamuju

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ABSTRACT

Adolescents are one of the vulnerable groups experiencing nutritional problems during the Covid-19 pandemic. Food insecurity in adolescents also impacts access to food, mental disorders, and eating disorders (eating disorders), which can cause nutritional problems in adolescents. This study aimed to measure the food security status of adolescents during the Covid-19 pandemic. Data was collected using a qualitative method through in-depth interviews and focus group discussions (FGD). The informants were state high school/vocational school students aged 15-17 amount 36 people who were selected by purposive sampling in the Mamuju District area, Mamuju Regency, in March-November 2021. Adolescents were vulnerable to experiencing food insecurity during the Covid-19 pandemic. This study found that adolescents experienced food insecurity during the Covid-19 pandemic, ranging from mild food insecurity (30.6%), moderate (58.6) to severe (1.8). Only 9% of youth experience good food security. As conclusion that adolescents experienced food insecurity status and doing several coping strategies to overcome this food insecurity problem by helping their parents to sell goods and find additional jobs outside the home during the Covid-19 pandemic. The problem of food insecurity will indirectly affect the nutritional status of adolescents.

Keywords: Food Security, Youth, Nutrition, Qualitative

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INTRODUCTION

Covid-19 not only has an impact on health but also has an impact on the educational process. Teaching and learning activities are mostly carried out online in various regions. This situation causes most of his time to be spent at home. Research shows changes in hygiene and sanitation behavior, eating patterns, and shopping behavior in the community^{1,2}. Having to stay at home causes many people to cook for themselves. These are positive changes, but they do not necessarily improve the quality of individual and family diets².

Adolescents are one of the vulnerable groups experiencing increased nutritional

problems during the Covid-19 pandemic. Food insecurity causes low nutritional intake in adolescents, which also impacts mental disorders, eating disorders, and changes in nutritional status in adolescents^{3,4}.

Before the pandemic, it was recorded that 14.5% of women of childbearing age, including adolescents, experienced chronic energy deficiency (CED). The central obesity rate in 2018 reached 31%, which continues to increase every year⁵. This figure can potentially increase during a pandemic due to economic changes and changes in shopping behavior and knowledge of food safety^{6,7}.

Another impact is decreased learning ability and low academic achievement⁸. But on

the other hand, based on reports from the Central Bureau of Statistics, the youth group is the group that has the least implementation of health protocols, such as rarely washing their hands, keeping their distance, and avoiding crowds⁹. This research is very important to measure and determine the status of food security in adolescents and their level of knowledge about nutrition during the Covid-19 pandemic. This study aimed to determine the food security status of adolescents and their coping strategies.

METHOD

This research was qualitative. Data was collected through in-depth interviews and focus group discussions (FGD). The informants in the study were 15-17-year-old state high school/vocational high school students in the Mamuju District, Mamuju Regency, West Sulawesi. The total number of informants were 36 and were selected by purposively based on variations in age, class, gender, and family economic status. Because the informants in this study were teenagers, all informants involved had to obtain informed consent approved by their parents.

All informants were interviewed in depth using an interview guide containing questions about adolescents' food security status and nutritional knowledge during the pandemic. Meanwhile, the FGDs were conducted by gathering 7-8 students for each FGD while still paying attention to health protocols.

Respondents' food security status was measured using the HFIAS questionnaire. The HFIAS is a questionnaire composed of nine sets of questions that have been used in various countries to measure the level of food security of individuals and households in different cultural contexts. The information generated by the HFIAS can be used to assess the prevalence of food insecurity to detect changes in the food insecurity situation of a population over time. The HFIAS questionnaire has been used to measure food insecurity in various contexts^{11,12}.

The HFIAS questionnaire was used to ask about the level of food insecurity experienced by respondents during the Covid-19 pandemic. The measurement results are then processed according to the status of food security based on the following score groups:

- a. Food Secure : 0-1
- b. mildly food insecure : 2 – 7
- c. moderately food insecure: 8-14
- d. severely food insecure :15-27

This research was conducted after obtaining permission from the Medical/Health Research Bioethics Committee, Faculty of Medicine, Unissula number 68/III/2022/Komisi Bioetik. All adolescent participants must have obtained their parents' written consent.

RESULTS

This research was conducted in March-November 2022 after obtaining permission from the Bioethics Committee. This research was conducted in two stages, namely the quantitative stage, by collecting data on the respondents' characteristics and the respondents' food security status. Quantitative data was collected at the start of the study in April 2022. A total of 111 adolescents were involved in this study. They filled out online and offline questionnaires, which were distributed directly. The characteristics of the respondents can be seen in Table 1.

Table 1. Characteristics of respondents.

Characteristics	Frequency (n)	%
Adolescent Age		
15	21	18,9
16	34	30,6
17	46	41,4
18	10	9,0
Sex		
Male	33	29,7
Female	78	70,3
Father's occupation		
Farmer/Fisher	34	30,6
Labour	5	4,5
Drive	9	8,1
Entrepreneur	31	27,9
Civil Servant	16	14,4
Private officer	7	6,3
Honorary staff	9	8,1
Mother's occupation		
Housewife	75	67,6
Farmer	5	4,5
Entrepreneur	5	4,5
Private officer	12	10,8
Honorary staff	4	3,6

Civil servant	10	9,0
Father's education		
Elementary	22	19,8
Junior High School	19	17,1
Senior High School	16	14,4
University	54	48,6
Mother's education		
Elementary	3	2,7
Junior High School	28	25,2
Senior High School	39	35,1
University	41	36,9

Table 1 shows that most of the respondents were female (70.3%), and the ages of the respondents were mostly 16 and 17 years old, namely 30.6% and 41.4%, respectively. Father's occupation as a farmer/fisherman (30.6%) and entrepreneur (27.9). The majority of mothers' work is housewives, 67.6%. As many as 48.6% of fathers and 36.9% of mothers have higher education.

Food security is generally defined as the physical, social, and economic ability to access sufficient, safe, and nutritious food¹³. Meanwhile, food insecurity is defined as a consistent lack of physical and economic access

to sufficient, safe, and nutritious food for an active and healthy lifestyle. Before COVID-19, one in 7 children and adolescents did not have consistent access to an adequate and nutritious diet. But the pandemic has changed food systems significantly, and food insecurity is expected to increase sharply due to COVID-19¹³. Adolescents are one of the vulnerable groups experiencing food insecurity during the pandemic.

After the data is processed, the respondents are classified based on their food security status. Table 2 shows adolescents' food security status (111 people). Most adolescents experienced food insecurity during the Covid-19 pandemic, ranging from mild (30.6%), moderate (58.6) to severe food insecurity (1.8). Only 9% of youth experience good food security.

Food insecurity is a public health problem that impacts the poor and inadequate quality of food intake. Food insecurity is associated with lower fruit and vegetable consumption and diet quality. In a cohort study, diet quality and food insecurity status improved compared to before the pandemic, and the frequency of eating out decreased¹⁴.

Table 2. Adolescent food security status during the Covid-19 Pandemic.

Food Security Status	n	%
Food secure	10	9,0
Mildly food insecure	34	30,6
Moderately food insecure	65	58,6
Severely food insecure	2	1,8
Total	111	100,0

Experts believe that the problem of food insecurity is caused by the negative economic impacts that occurred during the pandemic, limited household food sources and households' ability to obtain food, and disruption to the supply chain due to social restrictions. The Covid-19 pandemic has impacted the four pillars of food security, namely availability, access, use, and stability. People experiencing poverty, women, children, and youth are particularly vulnerable to experiencing a greater impact from food insecurity due to the Covid-19 pandemic¹⁵.

The Covid-19 pandemic has had an impact on adolescents' food security.

Adolescents are experiencing more difficulties in accessing food than before the pandemic. This was corroborated by qualitative data collected through 20 in-depth interviews and 3 focus group discussions (FGD). The informants in the study were 15-17-year-old state high school/vocational high school students in the Mamuju District, Mamuju Regency, West Sulawesi.

Informants were selected by purposive sampling based on variations in age, class, gender, and family economic status. All informants were interviewed using an interview guide which contained questions about the status of food security and nutritional

knowledge of adolescents during the pandemic. Meanwhile, the FGD were conducted by gathering 7-8 students for each FGD while still paying attention to health protocols. A total of 20 people were interviewed in-depth, and 34 people were involved in 3 FGDs. The results of the interviews were transcribed verbatim, and data analysis was carried out using 3 stages, starting from coding, categorizing, and preparing themes.

From the in-depth interviews, several informants expressed their worries during the Covid-19 pandemic. Access to food is becoming more difficult due to social restrictions, and people, including adolescents, are prohibited from leaving the house. As conveyed by the following informants:

"I was worried during the pandemic. Afraid of getting Covid, but also afraid of lack of food at home." (Informant 2)

"I'm worried that if my parents don't work, I can't work, what will we eat?" (Informant 4)

Adolescents feel sad and depressed because of the food insecurity conditions in their households. They describe their worries as follows.

"I used to be very worried because Covid was severe, my family got Covid. We are worried that food was running out at home. We didn't dare to go out and it's not good to communicate with other people because we're definitely worried if we find out we had Covid" (informant 15)

Other informants also felt the lack of food due to the impact of their parents' lack of income. Adolescents experience changes in eating patterns.

"Rice was there but just enough. The side dish was dry fish. But the lockdown was long, so there was no income for the parents." (Informant 7)

"In the past, it was easy to buy, eat fried food, but during the pandemic, it was rare because going out was prohibited. Sometimes it was hard to get the ingredients at home if you want to make fried foods." (Informant 19)

Our research findings provide an overview of the experiences of food insecurity experienced by adolescents during the Covid-19 pandemic. Families affected by the economic impact of the Covid-19 pandemic are directly affected by adolescents. Adolescents worry about food shortages because their parents are not working, so there is less food at home. This worry is a natural thing to happen when a person or a household experiences food insecurity¹⁶. In addition, due to social restrictions, adolescents are prohibited from going out to buy food they usually bought before the pandemic.

This research is in line with research conducted in urban youth groups, which reported that the level of food insecurity among adolescents was very high. Nearly a third of students reported potential food insecurity in the previous two weeks during fall 2020 and spring 2021¹⁷. Food insecurity in adolescents will result in inadequate nutritional intake, and food insecure adolescents are likely to have poor dietary intake^{17,18}.

Even though they are in a state of food insecurity during the pandemic, adolescents are trying to carry out coping strategies. Coping strategy is a mechanism used by a person in overcoming the problem of food insecurity that they experience, which can have a positive or even negative impact on their food security status¹⁸.

During the Covid-19 pandemic, adolescents did several things to overcome their anxiety and the food insecurity situation they faced. Self-initiated coping strategies are youth initiatives themselves to overcome the food difficulties they face¹⁷. The following is a form of self-initiated coping strategies carried out by adolescents to overcome the problem of food insecurity they faced during the Covid-19 pandemic.

"I used to help my parents sell. If we didn't work, how will we eat? Parents are no longer able to sell at the market because it was closed. So I helped work selling in people's stalls. Paid 20,000 every day." (Informant 16)

"At the beginning of the pandemic, my mother's Café was closed. No more income. So, I help my mother sell things online so that there are buyers" (Informant 9)

Self-initiated coping strategies are positive coping strategies to overcome the food insecurity problems they face (16). Several informants helped their parents by helping their parents work and sell. However, a few adolescents also try to stay calm because they are not worried and confused about what they can help their parents with.

"Maybe my parents were worried because it was hard to work. I also want to help but I didn't know how to help. So, I just stay at home and help clean the house." (Informant 12)

"I am worried. Parents must also be more worried, especially since we had Covid as a family. There is no food in the house. And no one is helping either. I could only pray at that time" (Informant 20)

Coping strategies are conscious and subconscious responses to stress due to repeated experiences that occur so that the body will respond automatically. Coping strategies are a collection of adaptive tools adopted to avoid difficulties, such as thoughts, emotions, behaviors, and actions, and rely on everyone's character design. Personal characteristics play an important role in determining stress perception and coping abilities. Efforts to survive in this food insecure condition are very important¹⁹.

Adolescents' efforts to overcome the food insecurity they face at the family level have enabled them to survive and overcome the anxiety they faced during the Covid-19 pandemic. Coping strategies adopted by children and adolescents play an important role in their mental health²⁰.

CONCLUSION

This study concludes that adolescents are vulnerable to experiencing food insecurity during the Covid-19 pandemic. Adolescents experienced food insecurity during the Covid-19 pandemic, ranging from mild food insecurity (30.6%) and moderate (58.6%) to severe (1.8%). Only 9% of youth experience good food security.

Adolescents experience several coping strategies to overcome this food insecurity problem by helping their parents to sell and find

additional jobs outside the home. Adolescents who experience food insecurity can experience nutritional problems in adolescents, such as anemia and CED. Therefore, the problem of food insecurity in adolescents needs to get the attention of policymakers.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

REFERENCE

1. Charlton KE. Food security, food systems and food sovereignty in the 21st century: A new paradigm required to meet Sustainable Development Goals. *Nutr Diet* [Internet]. 2016 Feb;73(1):3–12. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/1747-0080.12264>
2. Mengesha AD, Ayele TT. The impact of culture on the nutritional status of children and mothers during recurring food insecurity: The case of Boreicha Woreda (SNNPRS). *Am J Educ Res* [Internet]. 2015;3(7):849–67. Available from: <http://pubs.sciepub.com/education/3/7/8/>
3. Paslakis G, Dimitropoulos G, Katzman DK. A call to action to address COVID-19-induced global food insecurity to prevent hunger, malnutrition, and eating pathology. *Nutr Rev* [Internet]. 2021 Jan 1;79(1):114–6. Available from: <https://academic.oup.com/nutritionreviews/article/79/1/114/5870056>
4. Akib A, Sumarmi S. Kebiasaan Makan Remaja Putri yang Berhubungan dengan Anemia: Kajian Positive Deviance Food Consumption Habits of Female Adolescents Related to Anemia: A Positive Deviance Approach. *Amerta Nutr* [Internet]. 2017;1(2):105–16. Available from: <https://e-journal.unair.ac.id/AMNT/article/view/6232>
5. Kemenkes RI. Profil Kesehatan Indonesia Tahun 2018 [Internet]. Jakarta; 2020. Available from: <https://pusdatin.kemkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/Profil-Kesehatan-indonesia-2019.pdf>

6. Marques de Miranda D, da Silva Athanasio B, Sena Oliveira AC, Simoes-e-Silva AC. How is COVID-19 pandemic impacting mental health of children and adolescents? *Int J Disaster Risk Reduct* [Internet]. 2020 Dec;51(September):101845. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S2212420920313479>
7. Olaimat AN, Shahbaz HM, Fatima N, Munir S, Holley RA. Food Safety During and After the Era of COVID-19 Pandemic. *Front Microbiol* [Internet]. 2020 Aug 4;11(August). Available from: <https://www.frontiersin.org/article/10.3389/fmicb.2020.01854/full>
8. Mahmudiono T, Nindya TS, Andrias DR, Megatsari H, Rachmah Q, Rosenkranz RR. Comparison of maternal nutrition literacy, dietary diversity, and food security among households with and without double burden of malnutrition in Surabaya, Indonesia. *Malays J Nutr* [Internet]. 2018;24(3):359–70. Available from: <https://scholar.unair.ac.id/en/publications/comparison-of-maternal-nutrition-literacy-dietary-diversity-and-f>
9. Badan Pusat Statistik. Perilaku Masyarakat Di Masa Pandemi Covid-19 [Internet]. Badan Pusat Statistik. 2020. Available from: <https://www.bps.go.id/publication/2022/03/15/5026d1ebbb39697c4d2f280a/perilaku-masyarakat-pada-masa-pandemi-covid-19--hasil-survei-perilaku-masyarakat-pada-masa-pandemi-covid-19.html>
10. Iriantika KA, Margawati A. Studi kualitatif pengaruh pemberian konseling gizi terhadap perubahan sikap dan pemilihan makan pada remaja putri overweight. *J Nutr Coll* [Internet]. 2017 Jul 20;6(1):19. Available from: <https://ejournal3.undip.ac.id/index.php/jnc/article/view/16887>
11. Coates J, Swindale A, Bilinsky P. Household Food Insecurity Access Scale (HFIAS) for Measurement of Food Access: Indicator Guide [Internet]. USAID, FANTA III. 2007. Available from: <https://www.fantaproject.org/monitoring-and-evaluation/household-food-insecurity-access-scale-hfias>
12. Tsegaye AT, Tariku A, Worku AG, Abebe SM, Yitayal M, Awoke T, et al. Reducing amount and frequency of meal as a major coping strategy for food insecurity. *Arch Public Heal* [Internet]. 2018 Dec 4;76(1):56. Available from: <https://archpublichealth.biomedcentral.com/articles/10.1186/s13690-018-0303-3>
13. Parekh N, Ali SH, O'Connor J, Tozan Y, Jones AM, Capasso A, et al. Food insecurity among households with children during the COVID-19 pandemic: results from a study among social media users across the United States. *Nutr J* [Internet]. 2021 Dec 30;20(1):73. Available from: <https://doi.org/10.1186/s12937-021-00732-2>
14. Wolfson JA, Posluszny H, Kronsteiner-Gicevic S, Willett W, Leung CW. Food Insecurity and Less Frequent Cooking Dinner at Home Are Associated with Lower Diet Quality in a National Sample of Low-Income Adults in the United States during the Initial Months of the Coronavirus Disease 2019 Pandemic. *J Acad Nutr Diet* [Internet]. 2022 Oct;122(10):1893-1902.e12. Available from: <http://dx.doi.org/10.1016/j.jand.2022.05.009>
15. Giacomani C, Herrera MS, Ayala Arancibia P. Household food insecurity before and during the COVID-19 pandemic in Chile. *Public Health* [Internet]. 2021;198:332–9. Available from: <https://doi.org/10.1016/j.puhe.2021.07.032>
16. Leung CW, Laraia BA, Feiner C, Solis K, Stewart AL, Adler NE, et al. The Psychological Distress of Food Insecurity: A Qualitative Study of the Emotional Experiences of Parents and Their Coping Strategies. *J Acad Nutr Diet* [Internet]. 2022;122(10):1903-1910.e2. Available from: <http://dx.doi.org/10.1016/j.jand.2022.05.010>
17. St. Pierre C, Guan W, Merrill J, Scheck JM. *Urban Youth Perspectives*

- on Food Insecurity during the COVID-19 Pandemic: Evidence from the COACHES Study. *Nutrients* [Internet]. 2022 Jan 20;14(3):455. Available from: <https://www.mdpi.com/2072-6643/14/3/455>
18. Fatmaningrum D, Roshita A, Februhartanty J. Coping strategies for food insecurity among adolescent girls during the lean season in East Nusa Tenggara, Indonesia: a qualitative study. *Br J Nutr* [Internet]. 2016 Jul 5;116(S1):S42–8. Available from: https://www.cambridge.org/core/product/identifier/S0007114515004092/type/journal_article
 19. Abdelmageed RI, Elhenawy YI, Zaafar DK, Abdelaziz AW. Coping strategies among children and adolescents: validity and reliability of the Arabic version of the Kidcope scale. *Heliyon* [Internet]. 2022;8(1):e08706. Available from: <https://doi.org/10.1016/j.heliyon.2021.e08706>
 20. Skinner EA, Zimmer-Gembeck MJ. The Development of Coping. *Annu Rev Psychol* [Internet]. 2007 Jan 1;58(1):119–44. Available from: <https://www.annualreviews.org/doi/10.1146/annurev.psych.58.110405.085705>