

## Impact of Pandemic Covid-19 and Limitation Foods Toddlers Urban Papua Province of Indonesia

Semuel Piter Irab<sup>1</sup> & Maxsi Irmanto<sup>2</sup>

### Background

Pandemic infectious diseases cause morbidity and deaths to increase over time globally. Corona virus disease-19 (Covid-19) is an infectious disease found in China in Wuhan City, and spread very quickly to Indonesia and Papua Province. The aims of the study was to determine the impact of the covid-19 pandemic and food limitations for urban toddlers in Indonesia's Papua Province.

### Methods

A cross sectional study design, is type research to see the relationship of the impact covid-19 pandemic and food limitations for urban toddlers in Papua Province. Place of research Jayapura City and Jayapura Regencies, which represents all the Regencies of Papua Province. The population were all toddlers in Papua Province. Samples were toddlers living in urban areas Jayapura City and Jayapura Regencies. Data analysis using the Chi-Square test ( $\chi^2$ ).

### Results

Restriction of food transportation was very less 38,0% and good 25,0%. Helps government were very less 39,0% and very good 23,0%. Work of the head families very less 27,0% and very good 32,0%. Families head's income were less 36,0% and good 29,0%. Limited of mineral vitamins source were very less 26,0% and very good 36,0%. Protein source (10-15%) were less 36,0% and very good 18,0%. Carbohydrates source (60-75%) less 38,0% and good 23,0%. Fats source (10-20%) less 31,0% and good 28,0%. Energy source (1250-1750 kilogram calories) are very less 28,0% and good 25,0%. Impact limited consumption of urban toddler foods were not significant with restrictions on food transportation and urban helps government. Limitations of urban toddlers food consumption were significant with restrictions on the work head families, families head's income, limited vitamins mineral source, protein source (10-15%), carbohydrate source (60-75%), fat source (10-20%), and energy source (1250-1750 kilogram calories).

### Conclusion

Covid-19 pandemic from March to June 2020 in the Regencies/City of Papua Province. There were no restrictions on food transportation and helps government to the community. Impact of the covid-19 pandemic was only limited to the consumption toddlers food, restrictions on the work head families, families head's income, limited vitamins mineral source, protein source (10-15%), carbohydrate source (60-75%), fats source (10-20%), and energy source (1250-1750 kilogram calories).

**Keywords :** Impact pandemic of covid-19, limited foods toddlers urban

### Background

December 2019, Mysterious pneumonia cases were first discovered in Wuhan city, Hubei Province of China. According to reports from China that the transmission of mysterious diseases comes from markets fish and animals [1]. From 18 to 29 December 2019, there were five patients suffering from mysterious illnesses. Strange symptoms caused by a respiratory disorder called Acute Respiratory Distress Syndrome (ARDS) [2].

In January 2020 the prevalence of respiratory disorders increased, or spread very quickly from Hubei Province, China, Japan, Korea, Thailand, Singapore, Indonesia, Europe, America, Africa, Australia, and become a serious problem in the world [3]. Based on the first World Health Organization research, this mysterious disease, called the novel 2019 coronavirus (2019-nCov). On February 11, 2020, World Health Organization announced the official name of this mysterious disease is Corona Virus Disease-19 [2].

<sup>1</sup> Faculty of Public Health, Cenderawasih University Jayapura, Email: [samuelirab@gmail.com](mailto:samuelirab@gmail.com)

<sup>2</sup> Faculty of Public Health, Cenderawasih University Jayapura

Pandemic infectious diseases cause morbidity and death to increase over time globally. Corona virus disease-19 (Covid-19) was infectious disease found in China in Wuhan City, and spread very quickly to Indonesia and Papua Province. As of June 1, 2020 the prevalence of covid-19 in Papua Province has increased. Data source: Papua Province Covid-19 Control, Prevention and Handling Task Force (June 1, 2020). 54,3% of People in Monitoring, 14,7% of Patients in Monitoring, 15,5% of positive patients, and 10,9% of patients treated, whereas 4,4% of patients recovered and 0,2% died. Province of Papua patients with positive covid-19 rates increased while those who recovered and died were lower than in March - June 2020. This causes a very large influence covid-19 on socioeconomic status in the Regencies/City in Papua Province [4].

Covid-19 has a big influence globally. Much damage to the economies of countries in the world. So many peoples did not work, did not had money, it is difficult to get food, and state income falls [5]. Covid-19 was one of the diseases that kills the world economy, so that causing unemployment to rise, people lose their jobs, and poverty were increasing widely throughout the world [6]. Thus covid-19 caused an economic recession to increase, from January to June 2020 as whole in the world, including the peoples of the Indonesian Papua Province.

An important part of the economic recession caused by the covid-19 pandemic was Indonesia's national food security in Papua Province. Foods security were very important and strategic part, because foods was basic human need to be able to live [7].

## Methods

A cross sectional study design, was type of research to see relationship between the impact of the covid-19 pandemic and the limited foods availability of urban toddlers in Papua Province [8]. The covid-19 impact caused restrictions on human activities and transportation, so foods supplies in the urban were not as usual, before the covid-19 pandemic. Thus toddlers living in urban areas, consuming energy foods, and regulators that did not comply with the Nutrition Adequacy Rate (RDA).

Jayapura City and Jayapura Regency research centers represent, all Regencies in Papua Province. Population were all toddlers living in Papua Province, while the samples were toddlers living in urban Jayapura City and Jayapura Regency. Data analysis using the Chi-Square test ( $\chi^2$ ).

## Results

Foods security was basically divided into three parts that were beneficial to society namely food availability, food consumption, food accessibility. Food availability is quite meaningful, the average amount and quality of food nutrition available in the community and market, sufficient the consumption needs of all households [9]. Foods were basic need for human life. Food is one of the basic needs that the body needs every day in a certain amount. Food as source of energy and human health. The amount of foods less or more consumed in a long time, can adversely affect the health status of the community [10].

Restrictions on the socioeconomic status of urban toddlers, in the covid-19 pandemic in January - June 2020 in Papua Province. Foods transportation very less 38,0%, and good 25,0%. Help Government were very less 39,0% and very good 23,0%. Work of the head families very less 27,0% and very good 32,0%. Household head income less 36,0% and good 29,0%.

The limited of vitamins mineral source was very less 26,0% and very good 36,0%. Protein source (10-15%) was less 36,0% and very good 18,0%. Carbohydrates source (60-75%) less 38,0% and good 23,0%. Fats source (10-20%) was less 31,0% and good 28,0%. Energy source (1250-1750 kilogram calories) very less 28,0% and good 25,0%. Health protocol in the social restrictions of the community with social distancing, physical distancing, work from home, large-scale eradication, and regional quarantine, adversely affect household food availability in Papua Province.

**Table 1. Distribution of Limited Foods Toddlers on Urban Papua Province of Indonesia**

Impact of the Covid-19 Pandemic on	Very less		Less		Good		Very good	
	n	%	n	%	n	%	n	%
<b>Restriction socioeconomic status of the Rural</b>								
Food transportation	38	38,0	20	20,0	25	25,0	17	17,0
Helps government	39	39,0	18	18,0	20	20,0	23	23,0
Work of the head families	27	27,0	19	19,0	22	22,0	32	32,0
Household head income	15	15,0	36	36,0	29	29,0	20	20,0
<b>Limitations of Nutrition Source</b>								
Vitamin & mineral source	26	26,0	17	17,0	21	21,0	36	36,0
Protein source (10-15%)	29	29,0	36	36,0	18	18,0	17	17,0
Carbohydrate source (60-75%)	22	22,0	38	38,0	23	23,0	17	17,0
Fats source (10-20%)	30	30,0	31	31,0	28	28,0	11	11,0
Energy source (1250-1750 kilogram calories)	28	28,0	22	22,0	25	25,0	25	25,0

Explanation : 1. Foods transportation Urban (Cars, trucks and motorcycles)  
2. Work of the head families Urban (farmers, fishermen, unskilled laborers, and private)

A person's health condition depends on the level food consumption. Level consumption was determined by the quality and quantity of nutritious food. The quality of food shows the fulfillment of all nutrients needed by the body. While the quantity indicates the amount of each nutrient to the body's needs. If the composition of food dishes, meet the needs of the body both in quality and quantity, then the body will get adequate nutrition [11].

Indonesia Law number 18 of 2012. Food security is a condition of fulfilling foods for the country to the individuals, reflected by the availability of sufficient food, both in quantity and quality, safe, diverse, nutritious, evenly distributed, and affordable and not contrary to religion, beliefs, and community culture, for a healthy, active and productive sustainable life. The description shows that food security is one of the primary human needs, which must be realized for human life [12].

Nutritional status is foods security outcome that description a person's quality of life. The number of children under five experiencing malnutrition and malnutrition is an indicator of nutrient prone. Many children under five suffer from malnutrition and malnutrition is an indicator of nutritional vulnerability [13]. While poor nutrition is influenced by many interrelated factors. The reason is the consumption of unbalanced food and infectious diseases, inadequate food supplies and inadequate parenting, as well as sanitation/clean water, and basic health services are inadequate [14].

Based on Republic of Indonesia Government Regulation number 21 year 2020, about large-scale social restrictions, in order to accelerate the handling of corona virus disease 2019 (Covid-19). Covid-19 pandemic with number of cases and/number of deaths, has increased and expanded across regions cross country and impact on the political, economic, social, cultural, defense and security aspects, as well as the welfare of the peoples in Indonesia [15].

**Table 2. Relationship Impacts Pandemic Covid-19 and Limited Foods Toddlers of Urban Papua Province Indonesia**

Impact of the Covid-19 Pandemic on	Limitations on consumption foods of toddlers				Likelihood Ratio				
	Less		Good		Sig	RP	95 CI		
	n	%	n	%			Lower	Upper	
<b>Restriction Socio-Ekonomik Status</b>									
Food transportation									
Less	33	56,9	25	43,1	0,495	1,320	0,595	2,930	
Good	21	50,0	21	50,0					
Helps government									
Less	31	54,4	26	45,6	0,929	1,037	0,469	2,294	
Good	23	53,5	20	46,5					
Work of the head families									
Less	35	76,1	11	23,9	0,000	5,861	2,436	14,103	***
Good	19	35,2	35	64,8					
Household head income									
Less	33	64,7	18	35,3	0,028	2,444	1,092	5,474	**
Good	21	42,9	28	57,1					
<b>Limitations of Nutrition Sources</b>									
Vitamin mineral source									
Less	30	69,8	13	30,2	0,006	3,173	1,374	7,326	**
Good	24	42,1	33	57,9					
Protein source (10-15%)									
Less	44	66,7	22	33,3	0,000	4,800	1,956	11,781	***
Good	10	29,4	24	70,6					
Carbohydrate source (60-75%)									
Less	38	63,3	22	36,7	0,021	2,591	1,139	5,895	**
Good	16	40,0	24	60,0					
Fats source (10-20%)									
Less	40	65,6	21	34,4	0,004	3,401	1,467	7,885	**
Good	14	35,9	25	64,1					
Energy source (1250-1750 kilogram calories)									
Less	34	68,0	16	32,0	0,005	3,188	1,403	7,241	**
Good	20	40,0	30	60,0					

Explanation : 1. Consumption of toddlers food (a. Less  $\leq$  eat 1 time a day, b. Good = eat 2-3 times a day)  
2. Significant (\*\*\*)  $<0,001$ , \*\*  $<0,05$ , and \*  $<0,1$ )

Relationship between covid-19 Pandemic and limited food security for urban toddlers in March - June 2020 Papua Province. Covid-19 pandemic caused limited community activities every day to get food. The government applies social distancing, physical distancing, work from home, quarantine areas, leaving the house using masks. This limitation has an impact on the limited availability of household food. But with the transportation of food and helps government to urban communities in Papua Province, very helpful people who were not civil servants, to get food.

Covid-19 and its impact on agriculture and global food security. In the agricultural sector, employment declined from 40,2% to 26,8%. Counting 60,4% were families with low income [16]. Results of the study limited the socioeconomic status of urban toddlers in Papua Province. Results showed no significant restrictions on food transportation and the help of the government with limited consumption of urban toddler food. This means that food transportation through motorcycles, cars, trucks, planes and ships can reach people who were experiencing the impact of the covid-19 pandemic in Papua Province. In addition, helps government in the form of food and money, was used by the community for family needs.

Covid-19 pandemic, European labor has declined drastically, due job losses to hundreds thousands of seasonal workers. This happened in France, Germany, Italy, Spain and Poland. Thus, many peoples who did not work, do not had income, and do not had sufficient food supplies [17]. Improving the country's food security was very important by way of community empowerment. Because the community is empowered by the government, it is very important in maintaining the food and nutrition vigilance system in the region [18].

Food-insecure families, basically having children under five are more at risk of malnutrition, whereas families that were not food insecure have children who are not malnourished. One of the problems related to the problem of public food insecurity is the worldwide covid-19 pandemic. One of the problems related to community food insecurity was worldwide covid-19 pandemic [19]. Foods availability in an area was a major factor in preventing cases of malnutrition in the community. One problem of malnutrition that needs special protection is the first 1000 days of live birth. Starting from pregnant women to children less than 2 years in regencies/Cities in Indonesia [20].

Limitation of urban toddlers food consumption was significant with restrictions on the work head families and families heads income in the pandemic covid-19 Papua Province. Where urban community activities are restricted in trading, unskilled laborers, and private sector. Thus the community did not have enough income to buy foods. In addition to this limited income, the impact on toddlers food consumption were less than 2 times a day.

Food is very important for toddlers, one of the functions food was to provide endurance and prevention infectious diseases. This is very related to family behavior and habits. Toddlers eating habits will follow the family behavior in every meal. Family behavior providing food for toddlers has a big influence on the nutritional more status, less, and normal [21].

Impact of covid-19 and limited nutritional resources for urban toddlers in Papua Province. Limitations of Consumption toddlers significantly with limited food ingredients, protein sources (10-15%), carbohydrate sources (60-75%), fats sources (10-20%), and energy sources (1250-1750 kilogram calories). Besides toddlers who live in urban areas, only consume food less than 2 times a day. This was found in the head of the family who had a non-permanent job. Such as trading, unskilled laborers, the private sector, and urban motorcycle taxis in Papua Province. Thus peoples who do not had permanent jobs in Papua Province, their children had limited nutrient intake. Whereas the community has permanent jobs such as civil servants, consumption of toddlers were still sufficient, because they had fixed income every month.

Nutritionally aware families play a huge role in providing nutritious food for family members. Nutrition aware families research in Yapen Islands Regency, The results show that the nutritional status of children were very dependent on the behavior of families providing nutritious food for family members. Where toddlers less nutrition is found in families who were not aware of nutrition [22].

Changes in the nutritional status of the community, is one of the important behavioral changes, in utilizing food, according to the social outlook of the community. Thus the growth and development of nutritional status in pregnant women, breastfeeding mothers, and toddlers are closely related to the community's view, provide nutritious food for theirs family [23]. Cultural knowledge in social relations greatly influences the degree of public health. This relates to how to provide food for the family, and ways to prevent infectious diseases in public culture [24].

Pathogenesis of malnutrition consists of 5 stages. First, the inadequacy of nutrients lasts for a long time. Second, the nutrient reserves in the tissues are used to meet inadequacy. This situation lasts a long time, will be a deterioration of tissue, which was characterized by weight loss. Third, there was biochemical change that can be detected by laboratory examination. The fourth was occurrence of changes in bodily functions in the presence of distinctive signs. The fifth is the occurrence of anatomic changes, which can be seen from the appearance of classical signs, so that it has an impact on malnutrition [25].

Nutritional status of pregnant women and children under five is very important in building quality Human Resources in the countries of the world. Nowadays, developing countries, especially Asia and Africa, public health nutrition issues that fear stunting children, is the main problem that causes low human resources. so that the government prepares more collaborative or cross-sectoral programs that can reduce stunting [26].

Covid-19 in Papua Province increased from January to June 2020. This caused food security to decline in the Regencies/City of Papua Province. In addition there were limited differences in food supply between urban and rural areas. Thus the covid-19 pandemic caused an economic crisis and food security was greatly felt in urban communities.

Covid-19 has a big influence globally. Much damage to the economies of the world countries. So many people do not work, do not have money, it is difficult to get food, and state income falls. Covid-19 is one of the diseases that kills the world economy, causing unemployment to rise, people losing jobs, and poverty is increasing widely throughout the world. Thus covid-19 caused an economic recession to increase from December 2019 to June 2020 as a whole in the world, including peoples in Papua Province.

High risk groups, the community must get good protection by the Government of the Papua Province. One of the nutrition-prone groups, in the co-19 pandemic in Papua Province is the group of pregnant women, breastfeeding mothers, and toddlers. This group needs special negotiations from the Provincial Government of Papua, so that this group is protected from poor nutrition and malnutrition. Regencies/City Region in Papua Province is a threat of poor nutrition and malnutrition, due to the covid-19 pandemic.

Thus the role of nutrition workers in the community health center, and the Regencies/City Health Office of the Papua Province, many needed support in community nutrition surveillance. To find out the poor nutrition of mothers and childrens in the community, and preventive action early. If not found early, can be an iceberg phenomenon that causes the prevalence of Less Chronic Energy. and Low Birth Weight (LBW) increased in Papua Province. Thus the First 1000 Days of Life or Window off Oppotunity will fail, and cannot be fixed in the future, and is permanent(irreversible).

Suggestions to the Government of the Papua Province are every pregnant woman, breastfeeding mother, and child under five. Minimum of every meal 2 times and a maximum of 3 meals. Do not pregnant women, breastfeeding mothers and toddlers eat 1 time a day or do not eat in one day. This can cause the nutritional status of pregnant women, breastfeeding mothers, and children under five worsening from day to day in Papua Province.

Food should be pregnant women, breastfeeding mothers, and toddlers containing enough 3 substances, namely (1) energy substances: sago, taro, banana, cassava and others), (2) Builders: freshwater fish, sea water fish and chicken eggs, (3) regulating substances: cooked papaya, watermelon, star fruit, mango, cooked banana, spinach, mustard greens, vegetable wax, papaya leaves, kale, cabbage, carrots and others. In order for adequate intake of nutrients in pregnant women, breastfeeding mothers, and toddlers in Papua Province can achieve normal nutritional status.

Nutritious food is a priority for pregnant women. Consumption of foods low in nutrients, adversely affects anemia in pregnant women. The resulting output is babies born with low birth weight (<2500 grams). Thus, pregnant women who give birth to low birth weight children, have low quality human resources. In addition, children born with low body weight <2500 grams, have poor development[27].

Based on the basic issues of the theory human development, that nutritious food is very influential on increasing human resources. Peoples who have good intelligence were born to mothers who have normal nutritional status. This is a measure in increasing the human resources of countries in the world. Thus the normal nutritional status of pregnant women, breastfeeding mothers, infants and toddlers becomes an important part in the quality of life of the nation[28].

Nutrition is a process of organisms using food that is consumed normally through the process of digestion, absorption, transportation, storage, metabolism, and removal of substances that are not used. Nutritional functions are sourced from food to maintain life, growth, and normal functions of the body's organs, and produce energy. Nutritional state is a result of the balance between consumption and absorption of nutrients and use of nutrients. While malnutrition is a pathological condition due to deficiency or excess, both relative and absolute nutrition[29].

Food and Agriculture Organization (FAO), reported that between 2010 - 2012, there were almost 900 million peoples or as many as 12,5% of the total world population experiencing malnutrition. This problem is high in middle and low income countries. Most malnutrition occurs in women and childrens [30]. Under the nutritional food supplementation program for pregnant women and children under five in the United States, the results show that nutritional food supplementation in pregnant women and children under five even though it has not reached 100%, but only by 20% - 40%, but can reduce the prevalence of malnutrition children from 1976 - 1980[31].

Poor nutrition when pregnant women and malnutrition when children aged 0-24 months, can not be corrected if the child has become an adult[32]. The results of the study (Aryastami, 2015), that the role of maternal nutrition is very important for the health status of the baby[33]. Whereas Marotz (2012) states that early growth and development of infants can be stunted, because the baby receives essential nutrients is very little compared to what should be needed[34].

Malnutrition is still a special concern, and its handling is step by step, and sustainability by the government, so that children in Indonesia can grow up healthy to be the nation's golden generation that is free from chronic nutritional disorders (stunting). Collaboration with other sectors, is one of the strategies to realize the highest changes for the quality of a healthy, prosperous and independent life, for all Indonesian people in the future[35].

## Conclusion

Covid-19 pandemic from March to June 2020 in the Regencies/City of Papua Province. The impact limited consumption of urban toddlers food were not significant with restrictions on food transportation and urban helps government. The impact covid-19 on the limitations of urban toddlers food consumption were significant with restrictions on the work of headnfamilies, families head income, limited vitamin mineral source, protein source (10-15%), carbohydrate source (60-75%), fat source (10-20%), and energy source (1250-1750 kilogram calories).

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