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RESEARCH ARTICLE

IMPACT PANDEMIC COVID-19 AND LIMITATION FOODS PREGNANT MOTHERS URBAN PAPUA PROVINCE OF INDONESIA

FACULTY OF PUBLIC HEALTH, CENDERAWASIH UNIVERSITY JAYAPURA

Semuel Piter Irab and Paula Nancy Lefaan

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Abstract

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 pregnant mothers 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 pregnant mothers in Papua Province. Place of research Jayapura city and Jayapura Regency, which represents all the Regencies of Papua Province. The population were all pregnant mothers in Papua Province. Samples were pregnant mothers living in urban areas Jayapura City and Jayapura Regency. Data analysis using the Chi-Square test (χ^2).

Results: Pandemic Covid-19 and food limitations of urban pregnant mothers in March - June 2020 in Papua Province. Food transportation was very less 37,8% and good 25,6%. Government helps was very less 38,9% and very good 22,2%. Work of the head families were very less 26,7% and very good 31,1%. Household heads income were less 33,3% and very good 30,3%. Limited of vitamins mineral source were very less 26,7% and very good 35,6%. Protein sources (10-15%) were less 37,8% and very good 17,8%. Carbohydrates source (60-75%) less 35,6% and good 22,2%. Fats Source (10-20%) were very less 31,1% and good 26,7%. Energy sources (2150 to 2250 kcal + 300 kcal) were very less 24,4% and very good 26,7%. Limitations food consumption of urban pregnant mothers were not significant with government helps. Limitations food consumption of urban pregnant mothers were significant with restrictions on food transportation, work of the head families, household heads income, limited vitamins mineral source, protein sources, carbohydrates, fats, and energy source.

Conclusion: Pandemic Covid-19 March -June 2020 in Regencies/City of Papua Province. Impact on the restrictions food transportation, works of the head families, families head income, limitations vitamins mineral sources, protein sources, carbohydrates, fats, and energy sources.

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Introduction:-

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].

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. Up to June 11, 2020 the prevalence of covid-19 in Papua Province increased.

Data source for Papua Province Covid-19 Control, Prevention and Handling Task Force (11 June 2020). Peoples in Monitoring 51,4%, Patients in Monitoring 12,0%, patients positive 18,3%, and treated 12,9%, while 5,2% patients recovered and 0,2% died. Province Papua of positive patients increased 19 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 of Indonesia [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 pregnant mothers 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 pregnant mothers 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 pregnant mothers living in Papua Province, while the sample were pregnant mothers living in urban Jayapura City and Jayapura Regency. Data analysis using the Chi-Square test (χ^2).

Results and Discussion:-

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 pregnant women, in the pandemic covid-19 March - June 2020 in Papua Province. Foods transportation were very less 37,8% and good 25,6%. Government helps was very less

38,9% and very good 22,2%. Work of the head families were very less 26,7% and very good 31,1%. Families head's income was less 33,3% and good 30,0%.

Limitation of vitamins mineral source were very less 26,7% and very good 35,6%. Protein source (10-15%) less 37,8% and very good 17,8%. carbohydrates source(60-75%) less 35,6% and good 22,2%. Fats source(10-20%) were very less 31,1% and good 26,7%. Energy sources (2150 to 2250 kcal + 300 kcal) were very less 24,4% and very good 26,7%. The government made health protocol in social restrictions on the community by social distancing, physical distancing, work from home, large-scale extermination, and regional quarantine, adversely affects the availability of household food in Papua Province.

Table 1:- Distribution of Limited Foods Pregnant Mothers on Urban Papua Province of Indonesian.

Impact Pandemic Covid-19 on the Restiction Socio-Economic status	Very less		Less		Good		Very good	
	n	%	n	%	n	%	n	%
- Food transportation	34	37,8	17	18,9	23	25,6	16	17,8
- Government helps	35	38,9	16	17,8	19	21,1	20	22,2
- Work of the head families	24	26,7	17	18,9	21	23,3	28	31,1
- Houesehold head income	14	15,6	30	33,3	27	30,0	19	21,1
Limitations of Nutrition Source								
- Vitamins mineral source	24	26,7	15	16,7	19	21,1	32	35,6
- Protein source (10-15%)	26	28,9	34	37,8	14	15,6	16	17,8
- Carbohydrate source (60-75%)	21	23,3	32	35,6	20	22,2	17	18,9
- Fats source (10-20%)	28	31,1	28	31,1	24	26,7	10	11,1
- Energy source (2150 to 2250 kcal) + 300 kcal	22	24,4	21	23,3	23	25,6	24	26,7

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 toddlers and pregnant mothers 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 Pregnant Mothers of Urban Papua Province Indonesian.

	Limitations consumption foods of pregnant mothers	Likelihood Ratio
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Impact Pandemic Covid-19		Less		Good				95 CI	
on the		n	%	n	%	Sig	RP	Lower	Upper
Retriction Socio-Economic Status									
Food transportation						*			
- Less		32	62,7	19	37,3	0,070	2.180	0,931	5.100
- Good		17	43,6	22	56,4				
Government helps									
- Less		28	54,9	23	45,1	0,921	1,043	0,452	2,410
- Good		21	53,8	18	46,2				
Work of the head families						***			
- Less		32	78,0	9	22,0	0,000	6,693	2,602	17,218
- Good		17	34,7	32	65,3				
Household head income						**			
- Less		29	65,9	15	34,1	0,034	2,513	1,071	5,901
- Good		20	43,5	26	56,5				
Limitations of Nutrition Sources									
Vitamins mineral source						**			
- Less		29	72,5	11	27,5	0,002	3,955	1,615	9,682
- Good		20	40,0	30	60,0				
Protein source (10-15%)						***			
- Less		42	68,9	19	31,1	0,000	6,947	2,534	19,046
- Good		7	24,1	22	75,9				
Carbohydrate source (60-75%)						**			
- Less		36	67,9	17	32,1	0,002	3,910	1,609	9,499
- Good		13	35,1	24	64,9				
Fats source (10-20%)						**			
- Less		37	67,3	18	32,7	0,002	3,940	1,607	9,660
- Good		12	34,3	23	65,7				
Energy source (2150-2250 kcal) + 300 kcal						**			
- Less		30	69,8	13	30,2	0,005	3,401	1,420	8,146
- Good		19	40,4	28	59,6				

Explanation : 1. Consumption food of pregnant mothers urban (a. Less \leq eat 1 time a day, b. Good = eat 2-3 times a day)

2. Significant (***) $<0,001$, ** $<0,05$. * $<0,1$)

Relationship between pandemic covid-19 and food limitations for urban pregnant mothers in March - June 2020 Papua Province. Pandemic Covid-19 causes peoples to do activities every day to get limited food. The government applies social distancing, physical distancing, work from home, quarantine areas, leaving the house using masks. This restriction has an impact on the limited availability of household food. But with the transportation foods and government helps to urban communities, it was very helpful for peoples 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 socio-economic status of urban pregnant mothers in Papua Province. Results showed no significant limitation food consumption for pregnant mothers with the government help of the urban pregnant mothers. This means that underprivileged families who were not civil servants, and do not had fixed income, receive government helps. Thus there is no limitation of the government in helping the community in the pandemic covid-19 in Papua Province.

The covid-19 pandemic, Europe's workforce has decreased drastically, as a result of job losses in hundreds thousands of seasonal workers. This happened in France, Germany, Italy, Spain and Poland. Thus, many peoples do 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].

Food consumption limitations of urban pregnant mothers were significant with restrictions on foods transportation, work of the head families, and families head income in the pandemic covid-19 Papua Province. Where urban community activities are restricted in trading, unskilled laborers, the private sector and motorcycle taxis. Thus the community their not have enough income to buy foods. In addition to this limited income, the impact on food consumption of pregnant women is less than 2 times a day.

Foods were very important for pregnant mothers, one of the functions foods was to provide endurance and prevent infectious diseases. This is very related to family behavior and habits. Eating habits of pregnant mothers will follow the family behavior in every meal. Family behavior of providing food for pregnant mothers and toddlers were very influential on the nutritional status was more, less, and normal[21].

Impact pandemic covid-19 and limited nutrition sources for urban pregnant mothers in Papua Province. Limitations foods consumption of pregnant mothers Significant with limited vitamins mineral source, protein sources (10-15%), carbohydrate sources (60-75%), fats sources (10-20%), and energy sources (2150 to 2250 kcal + 300 kcal). In addition, mothers who live in urban only consume less than 2 times a day. This was found in the head families who had a non-permanent job. Such as trading, unskilled laborers, private sector, and motorcycle taxi of urban Papua Province. Thus the head families who does not had permanent job in Papua Province, pregnant mothers were limited in nutrient intake. Whereas the head family has a permanent job such as civil servant, consumption of pregnant mothers were still sufficient, because their 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 March to June 2020. Causing decreased food security in Papua Province Regency/City. In addition there are 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 peoples in the future[35].

Conclusion:-

Pandemic covid 19 March-June 2020 in Regencies/City of Papua Province. Impact pandemic of limited food consumption in urban pregnant mothers were not significant with the government helps.

Impact pandemic covid-19 on food consumption constraints for urban pregnant mothers were significant with restrictions on foods transportation, works of the head families, families head income, limited vitamins mineral source, protein sources (10-15%), carbohydrate sources (60-75%), fats source(10-20%), and energy sources (2150 to 2250 kcal + 300 kcal).

Bibliography:-

1. Rothan HA, Byrareddy SN(2020). The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak. *J Autoimmun.* 2020; published online March 3. DOI: 10.1016/j.jaut.2020.102433.
2. Ren L-L, Wang Y-M, Wu Z-Q, Xiang Z-C, Guo L, Xu T, et al(2020). Identification of a novel coronavirus causing severe pneumonia in human: a descriptive study. *Chin Med J.* 2020; published online February 11. DOI: 10.1097/CM9.0000000000000722.
3. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al(2019). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet.* 2020;395(10223):497-506.
4. Papua Province task force (2020). Covid-19 Control, Prevention and Handling Task Force in Papua Province.
5. Ozeli.P & Arun. T, (2020). Spillover of COVID-19 : Impact on the Global Economy. Central Bank of Nigeria and University of Essex United Kingdom.
6. Baldwin.R & Mauro.B.W.Di. (2020). Economics in the Time of Covid-19. AvoxEU. Org BOOK.
7. Suryana.A. (2004). Food Security in Indonesia. Food Security and Nutrition in the Era of Regional Autonomy and Globalization. National Food and Nutrition Workshop VIII. Jakarta, May 17-19, 2004.
8. Practices A.W. (2003). Fundamentals of Medical & Health Research Methodology. PT Raja Grafindo Persada. Jakarta.
9. Soekirman (2000). Nutrition and its application for families and communities. Jakarta: Director General of Higher Education Ministry of National Education.
10. Muchtadi D. (2001) Prevention of over nutrition and chronic diseases through improved food consumption patterns. Bogor: Bogor Agricultural University.
11. Sediaoetama (2006). Nutrition for professions and students Volume I and II. Jakarta: Dian Rakyat.
12. Ariani, M. and Pitono, J. (2014). Diversification of Food Consumption: Performance and Future Perspectives. Food Diversification and Transformation of Agricultural Development. Editor: Ariani, M et al. Agricultural Research and Development Agency, Ministry of Agriculture. Jakarta.
13. Anonymous (2013). Directorate General of Nutrition and KIA Ministry of Health Republic of Indonesia.
14. Anonymous. (2016). Nutrition Status Monitoring Handbook and Nutrition Performance Indicators in 2015, Directorate of Community Nutrition, Directorate General of Public Health, Ministry of Health Republic of Indonesia.
15. Presidential Decree. (2020). Republic of Indonesia Government Regulation number 21 year 2020 regarding Large-Scale Social Restrictions in the Framework of Accelerating the Management of Corona Virus Disease 2019 (Covid-19).
16. International Labour Organization (2020). Lapangan kerja berdasarkan jenis kelamin dan aktivitas ekonomi – perkiraan menggunakan model dari ILO, November 2019.
17. Reuters .(2020). No bed of roses: East Africa's female flower workers lose jobs as coronavirus hits exports", 11 April 2020; Martinplaut, "Tens of thousands of African jobs at risk as Europe dumps flowers during the Coronavirus crisis", 22 March 2020
18. Sirajuddin, Surmita, Astuti.T. (2018). Center for Health Human Resource Education. Health Human Resources Development and Empowerment Agency. 2018 edition. Ministry of Health Republik Indonesia. Jakarta

19. International Food Policy Institute(2020). COVID-19 : Trade Restriction are worst possible response to safeguard food security. 27 March 2020.
20. Irab.S.P., Djuwita.R., Besral, Utari.D.M., Kusharisupeni. (2018). Coverage of Basic Health Programs and Regional Fiscal Capacities Indices With Stunted Prevalence Change in 2007-2013 on Childrens Under Five Years of Regencies/Cities in Indonesia. Indian Journal of Applied Research. Volume-8.June-2018.
21. Dovey T.M (2010). Eating Behaviour. Mc Graw Hill, Open University Press.
22. Irab.S.P., Bouway D. Y., Sokoy F. (2015). The Relationship Between Education, Employment, Income and Avoid Food Behavior With Famili Nutrition Women Aware of Children in Southern District Yapen Island Indonesia in 2013. University of Cenderawasih Papua Indonesia. Sept.2015.Vol.5,No.7. www.ijsk.org/ijrss.
23. Irab.S.P. (2019). The Relationship between Changes in Coverage of Health and Social Programs with Changes in Prevalence of Toddler Stunting in Regencies / Cities in Indonesia from 2007 to 2013. Faculty of Public Health Doctor of Public Health Study Program University of Indonesia (Dissertation)
24. Irab.S.P. (2009). Social, Economic, Cultural, and Knowledge Relationships, Kadarzi Attitudes in FKM-Cenderawasih University Students. Postgraduate Program, Faculty of Medicine, Gadjah Mada University Yogyakarta (Thesis)
25. Jelliffe, DB., & Jelliffe, E. (1989). *Community Nutritional Assesment with Special Reference to Less Technically Developed Countries*. Oxford: Oxford University Press.
26. UNICEF. (2013). Improving child nutrition: the achievable imperative for global progress. In *New York: UNICEF*.
27. Morris.J.C. (2011). Dietitian's Guide to Assessment and Documentation. Jones and Bartlett Publishers. Sudbury, Massachusetts. Boston, Toronto, London, Siggapure.
28. Papalia.D.E & Martorell.G. (2015). Experience Human Development. Thirteenth Edition. Mc Graw-Hill Education.
29. Gibson, R. (2005). *Principles of Nutritional Assesmen* ((2nd Edition)., Ed.). United State Of America. New Yorks: Oxford University Press.
30. Beesabathuni, K., van Zutphen, K. G., & Kraemer, K. (2017). Role of Foundations and Initiatives by the Private Sector for Improving Health and Nutrition. In *Nutrition and Health in a Developing World* (pp. 771–790). Springer.
31. Lewit, E. M., & Kerrebrock, N. (1997). Population-based growth stunting. *The Future of Children*, 149–156.
32. SUN. (2010). *a Frame Work for Action*. Public-Prive Partnerships.
33. Aryastami. (2015). Early Age Growth Determines Pre-Puberty Age Growth (Longitudinal Study of IFLS 1993-1997-2000), Dissertation. Depok: Faculty of Public Health UI.
34. Marotz, L. R. (2012). *Health, Safety, and Nutrition for the Young Child*. Kansas: University of Kansas.
35. Ministry of Health. (2018). The Situation of Short Toddler (Stunting) in Indonesia. Jakarta: Data and Information Center Window Bulletin Ministry of Health Republic of Indonesia. Ministry of Health Republic of Indonesia.