

Performance Achievement of Nutritional Programs in Mulyorejo Public Health Center, Surabaya, Indonesia in 2018

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ABSTRACT

Introduction: Performance of nutritional programs in Public Health Center is the important component to evaluate for the better performance of health service.

Methods: This study aims to evaluate performance of nutritional programs in Mulyorejo PHC in 2018. Evaluating process were used secondary data that provided by nutrition unit in this PHC. Descriptive study was conducted from November to December 2019. Data were interpreted as two groups; those are nutritional problem indicators and nutritional program performance indicators. **Results:** The main findings of this research are some of nutritional program performance indicators in Mulyorejo PHC still become problem of public health due to below the cut off value fixed by Ministry of Health, such as scope of under-five years age with exclusive breastfeeding (79.3%), six-month age with complete exclusive breastfeeding (79.3%), supplementation in pregnant women with chronic energy deficiency (21.2%), under-five years ago that already have health control card or oftend called as Kartu Menuju Sehat (75%), under-five years ago that gain weighed (68.5%), and vitamin A supplementation in post-partum women (67%).

Conclusion: Mulyorejo PHC still need to improve and gain the scope of some nutritional program that still become problem of public health. Regularly evaluation can gain and improved program achievement, this should be conduct in every PHC owing to the different geographical area, number of populations, number of human resources, and another different setting.

Keywords: Nutritional program, Mulyorejo, public health center, program performance indicators

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INTRODUCTION

Malnutrition defined as the condition of the deficiencies of nutrition, excess of nutrition, and unbalance individual intake of nutrients¹. Malnutrition addressed three groups of conditions, those are undernutrition, overweight or obesity, and micronutrient-related malnutrition². Three crucial indicators were used to estimated term of undernutrition are wasting (low weight-for-height), stunting (low height-for-age), and underweight (low weight-for-age)³. Micronutrient-related malnutrition can be refer to micronutrient excess and micronutrient deficiencies- including mineral and vitamins⁴. Other than that, overweight and obesity are impact that results from imbalanced diet intake, this conditions can be high risk factor of metabolic and non-communicable disease such as stroke, diabetes, heart disease, and some cancers⁵. Malnutrition is an important issue in public health due to the long-term effect and risk factors of death in women in pregnant, infants, children, and adolescents⁶. Recently data published by WHO estimates that 1.4 billion of adolescents were overweight or obesity, 462 million were underweight, and 45% of deaths were caused by undernutrition condition. In addition, 47 million of

children under-five years age shows wasted, 14.3 million shows severely wasted, 144 million shows stunted, and 38.3 million shows overweight or obesity. Interestingly, increasing number of overweight and obesity on childhood were also reported. Majority, malnutrition on under-five years age occurs in low and middle-income countries⁷. Since 2012, World Health Assembly have been proposed six points of global nutritional goals that estimate can be reach on 2025, consists of reduction worldwide's number of stunting on under-five years age as many as 40%, reduction of women with anemia during reproductive age as many as 50%, reduction of low-birth weight as many as 30%, increasing in number of exclusive breastfeeding on the first six months up to 50%, no increase number of overweight-children, maintenance of childhood wasting up to less than 5%^{8,9}. Long-term effect of malnutrition can lead to 3.5 million of silent deaths worldwide, and also causing 35% of morbidities on under-five years age¹⁰. Children and toddler with malnutrition more slower on physical growth and neurodevelopment than normally children in the same age¹¹. Lack ability of social skills, problems with their behavior, lower of IQ (intellectual quotient), vulnerable and greater risk to

infectious disease also known as the effect of malnutrition¹².

Additionally, malnutrition during pregnancy tend to be a risk factor of poor nutritional status in under-five years age and nutritional anemia during pregnancy^{13,14}. Indonesia is one of developing countries in Asia. Identified as a middle-income country bring the challenges for nutritional improvement in Indonesia. Notably, UNICEF report shows that 3 of 10 children under-five years ago were stunted, and same reports shows 1 of 10 children were wasted. In other case, overweight and obesity also still in high, with the percentage shows 20% in primary-school aged children and 15% in adolescents. Acute malnutrition also frequently reported, with the number two millions¹⁵.

UNICEF have been pushing Indonesian Government for the improvement of nutritional status. Since 2015, Indonesian Ministry of Health have been provoked regularly surveillance of nutritional status on under-two years age, under-five years age, pregnant women, and teenager/adolescent. This regularly surveillance often called as Pemantauan Status Gizi (PSG), and become a responsibility in each Public Health Centre (PHC). Mulyorejo as one of PHC in Indonesia, residing in Surabaya, had been conducted this program, but report about its performance of achievement still yet to publish. Thus, this study aims to evaluate the performance achievement of nutritional programs in Mulyorejo PHC regarding to the improvement of this program.

MATERIALS AND METHODS

This study using secondary data collected from health worker, specifically in nutritional unit, Mulyorejo PHC. Decriptive study were conducted from November to Desember 2019. Data were classified into two major programs, nutritional problem indicators and nutritional program performance indicators. Nutritional problem indicators were breakdown into seven indicators, consist of underweight of five-years age percentage, stunting of five-years age percentage, wasting of under-five years age percentage, women teenager with anemia percentage,

women on pregnant with anemia percentage, pregnant women with chronic energy deficiency percentage, and infant with low-birth-weight percentage. While, nutritional program performance indicators consist of various scope—including under-five years ago with exclusive breastfeeding, sixth-month age with complete exclusive breastfeeding, iron supplementation on pregnant women, supplementation on pregnant women with chronic energy deficiency, supplementation on underweight babies, supplementation on teenager women with anemia, infant that get early breastfeeding initiation, under-five years ago that weighed, under-five years ago that already have health control card or often called as Kartu Menuju Sehat, under-five years ago that gain weighed, under-five years ago that yet gain weighed, vitamin A supplementation on under-five years age, vitamin A supplementation on post-partum woman, household that consume salt consist of yodium, and wasting toddlers that get toddler’s care. Those kinds of indicators were adopted from Indonesian Ministry of Health Guidelines on Nutritional Surveillance. Frequencies table had been made, then data were compared with the indicator from MOH, to shows whether the indicators that still become problem in this PHC. This study already approved by Ethical Committee of Faculty of Medicine, Universitas Airlangga with the number No.309/EC/KEPK/FKUA/2019.

RESULTS

In this study, we found that Mulyorejo PHC had been reach the target of all nutritional problem indicators. However, some performance of nutritional program indicators still yet to reach target, such as number of under-five years age with exclusive breastfeeding, under-five years ago that wasting and get additional nutrition, under-five years ago that get early breastfeeding initiation, number of under-five years ago that weighed, number of under-five years ago that gain their weigh, and vitamin A supplementation on under-five years age. Detail of the nutritional performance achievement were shown in table 1.

Table 1. Detail of nutritional problem indicators and nutritional program performance Indicators

Nutritional Problem Indicator

No.	Indicator	Performance Achievement %	Target %	Conclusion
1	Underweight on under five-years age percentage	2.45	<10	Not problem of public health
2	Stunting on under five-years age percentage	0.49	<20	Not problem of public health
3	Wasting on under five-years age percentage	4.8	<10	Not problem of public health
4	Women teenager with anemia percentage	0	<5	Not problem of public health
5	Pregnant women with anemia	0	<10	Not problem of public health
6	Pregnant women with chronic energy deficiency (CED)	5.7	<10	Not problem of public health
7	Infant with low birthweight	0	<10	Not problem of public health

Nutritional Program Performance Indicators

1	Under-five years ago, with exclusive breastfeeding (EBF)	79.3	80	Problem of public health*
2	Six-month age with complete exclusive breastfeeding (EBF)	79.3	80	Problem of public health*
3	Fe-1 (iron) supplementation in maternal	103	90	Not problem of public health
4	Fe-3 (iron) supplementation in maternal	91.8	90	Not problem of public health
5	Supplementation in pregnant women with chronic energy deficiency (CED)	21.2	50	Problem of public health*
6	Supplementation on underweight babies	100	100	Not problem of public health
7	Supplementation on teenager women	100	15	Not problem of public health
8	Infant that get early breastfeeding initiation	100	41	Not problem of public health
9	Under-five years ago, that weighed	90	60	Not problem of public health
10	Under-five years ago, that already have health control card or often called as Kartu Menuju Sehat	75	100	Problem of public health*
11	Under-five years ago, that gain weighed	68.5	80	Problem of public health*
12	Under-five years ago, that yet gain weighed	50	40	Not problem of public health
13	Under-five years ago, that get vitamin A tablet	95	90	Not problem of public health
14	Vitamin A supplementation in post-partum women	67	90	Problem of public health*
15	Household that consume salt consist of yodium	90	90	Not problem of public health
16	Wasting toddlers that get toddler's care	100	100	Not problem of public health

DISCUSSION

Public Health Centre (PHC) or often called as Puskesmas is one of several public health services in Indonesia. Based on the statute from Indonesian Ministry of Health, number 43-year 2019, PHC have three main functions, as a trigger for health development, community empowerment, and the first level of health service center. Evaluation the efficiency of health programs in PHC should be conducted each year and reported to the Ministry of Health, so that further intervention or analysis can be given. Every PHC have different characteristics regarding to the different population and geographical area. Mulyorejo PHC have three regions, those are Mulyorejo district, Manyar district, and Kejawan Putih district. Number of populations was varying in every district, Mulyorejo had the biggest number of inhabitant (17,161 inhabitants), followed by Manyar Sabrangan (16,656 inhabitants), and Kejawan Putih (6,700 inhabitants). During 2018, Mulyorejo PHC have been conducted various nutritional programs that divided into two major groups, nutritional problem indicators and nutritional program performance indicators.

This study was highlighted some of nutritional program performance indicators that still under the target and need to be improved in next year. Those programs classified as problem for public health regarding to the excess value more than cut off that fixed by Indonesia Ministry of Health

a. Under-five years ago, with exclusive breastfeeding
National target of EBF in under-five years age was 80%, but in Mulyorejo PHC still need to be gain as many as 0.7% to reach the target. Monitoring, promoting, and supporting of exclusive breastfeeding in every public health center can be conduct by health workers through regularly visiting. Exclusive

breastfeeding (EBF) means that under-five years ago that receives breast milk as source of food, without other solids or liquids, except of water with function as oral rehydration solution (ORS), vitamins, syrups or drops, minerals, or other form of medicines¹⁶. World Health Organization (WHO) recommended exclusive breastfeeding during first 6 months of life, and can be continued up to 24 months of age, companied by other solids or liquids food¹⁷. Studies shows EBF can give many impacts for infant and also mother. Breast milk contains important required nutrients that can protects against gastrointestinal and respiratory infections also can minimize the risk of being overweight and obese in adolescence and childhood. Higher intelligent quotient (IQ) has been known as side impact of exclusive breastfeeding. In line with that, mothers also get some beneficial, such as protection from ovarian and breast cancer¹⁸. Another country has been provoked provided comfort place for mother, such as Nigeria that launched Baby Friendly Hospital Initiative (BFHI) under supervision of UNICEF and WHO. Recently study shows multifactor can influence EBF, including knowledge of mother, socio-demographic, and labour¹⁹. Health promotion for mother take an important role to promote the beneficial of EBF²⁰.

b. Six-month age with complete exclusive breastfeeding (EBF)

National target for the perecentage of six-month age with complete EBF has been fixed on 80%, similar with the perecentage of under-five years with EBF. This point should be a consideration in Mulyorejo PHC, because yet to reach the target. Exclusive breastfeeding is more recommended than partial

breastfeeding, especially to gain immunity of toddlers. Recent studies show that mortality and infection in toddlers group with EBF was lower compared with neonates that partially breastfeed¹⁷. Knowledge of each mother about the benefit of EBF for their infants also a predictor for the successfulness of EBF²¹. Another study reveals that the duration of EBF can be affected by level of maternal and less paternal²². Most of mothers that partially breastfeed have lower knowledge specifically about health benefits of breastfeeding compared with mother that completely exclusive breastfeed²³.

c. Supplementation for pregnant women with chronic energy deficiency (CED)

Supplementation for pregnant women with CED is absolutely important in order to minimize negative impact either for mother or babies. Pregnant women with chronic energy deficiency (CED) known as malnutrition condition in pregnant woman that caused by lack of energy for long period of time. Multiple factors that negatively related with CED are infectious disease that lead to severe illness, having toddlers below two years age, and breastfeeding. While education, marital status, income, food diversity, high maternal age, and socio-economic status shows positive effect^{10,24}. Data analysis shows in Mulyorejo PHC, only 21.2% of women with CED that get supplementation. Meanwhile, minimum national target indicates 50% of them must get supplementation in order to prevent negative impact of CED. Previous study shows that CED can be a risk factor of having Low-Birth Weight (LBW) and poor health condition of babies²⁵. Another outcome of CED also be considered, such as birth asphyxia²⁶ and poor anthropometric measures²⁷.

d. Under-five years ago, that already have health control card or often called as *Kartu Menuju Sehat*

Indonesia has been provided health control card or often called as *Kartu Menuju Sehat* that must be brought by mother when visiting public health center²⁸. This card filled with the biodata of baby, weight body, height body, supplementation history, vaccination history, and other related information with public health service²⁹. Indonesia as an archipelago country, with the number of islands is about 17,504 islands, and different health facility level because of decentralization system can give impact on the distribution of this card³⁰. The number of babies that already have KMS must be reported regularly every month. National target that must be reached in every public health center is all babies have this card (100%), but report from Mulyorejo public health center shows only 75% of the babies that have this card. This phenomenon should become an evaluation for health workers and also for mothers of babies to gain their willingness and fulfill administration process.

e. Under-five years ago, that gain weighed

Frequency of weighing of under-five-year age must be recorded in health card/ *Kartu Menuju Sehat*. This historical note can help medical workers to understand what kind of problem in under-five-year age, and also classified them based on nutritional status, whether they malnutrition or not³¹. High skill medical workers to conduct weighing based on guidelines from WHO Training Course on Child Growth Measurement³² and qualified measurement

tools must be provided in order to minimize bias results. Number of visiting public health for the health maintenance yet to be established, but it is recommended to monitor together with immunization schedule, and additional visit can be conducted in first month and nine months of age (since one to two weeks of birth, at one month age, two, four, six, nine, 12, 18, 24 months, three years, four years, and five years)³¹. Early detection of abnormal growth can accelerate therapy that will be given by medical workers, so that negative impact such as less productivity and lower earnings³³. Based on guidelines from Indonesia Ministry of Health²⁹, if body weight of baby didn't gain during two times of measurement, it should be a consideration and identified the causation of it. From this study, the number of under-five-year age that gain weighed still yet to reach the target. National target must be 80% of baby gain weighed, while in Mulyorejo PHC still 68.5%. Monitoring of weight body is a regular program in every PHC, as an effort to minimize wasted children, as proposed by the global Sustainable Development Goals (SDGs) to reduce wasted children below 5%³⁴.

- f. Vitamin A supplementation in post-partum women
Vitamin A is a fat-soluble substance that important for biological activity and support human metabolism. Animal liver, whole milk, egg yolk, and dairy products was the common sources of vitamin A, while yellow vegetables and fruit are rich of provitamin A carotenoids³⁵. Many beneficial of consuming vitamin A in recommended dosage, for human body, such as growth and physical development, maintenance of epithelial cells, immune booster, normal vision, and gene expression³⁶. In line with that, vitamin A deficiency (VAD) can result severe morbidity, children mortality, and blindness. VAD can be diagnosed by observe characteristic of eye sign³⁵. Infant was born with low vitamin A stores and strongly dependent on external sources, in this case is breastmilk. In some situation, breastmilk produced by mother also low contain of vitamin A, therefore, vitamin A supplementation is recommended³⁷. Vitamin A supplementation coverage for post-partum woman in Mulyorejo PHC still yet to reach the target and need to gain up to 23% to reach national target.

CONCLUSION

Improvement on some nutritional programs in Mulyorejo PHC still need to be done, to gain coverage of program, those are scope of exclusive breastfeeding, supplementation in pregnant women with chronic energy deficiency (CED), under five-years ago that already have health control card, under five-years ago that gain weighed, and vitamin A supplementation in post-partum women.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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