

## Analysis of Anorexia in Malnourished Toddler

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### ABSTRACT

Early detection for Protein Energy Malnutrition is highly needed due to difficulties to manage malnutrition toddler. In Indonesia have empowerment community program of health as called Posyandu which aim in detection and manage of PEM toddler in the community every month with kader by use growth chart as tools guide of nutrition status. Anorexia was found in children that expressing in a restrictive eating which could cause weight gain problems. This feeding disorder was almost complain as reason of children weight was stable for long time. This research study hold to analyses how was anorexia children could related to diseases or not how their weight gain and it could use as indicator of early detection of malnutrition toddler? Sample was 1090 malnourished toddler by simple randomized from population of 2766 Posyandu in Surabaya, Indonesia on 2007/2008. Result found anorexia in 62,7% among toddler malnourished and it was in healthy and sick condition. Toddler anorexia also found have weight loss or weight gain. The average weight gain on anorexia toddlers were 0,39 kg/month, but if toddlers with no anorexia problem had average weight gaining 0,54 kg/month. Anorexia could be psycho-social factor which important sign of biophysical in toddler face of growth faltering periods, and it sign almost found in malnourished toddler in Posyandu.

**KEYWORDS:** *anorexia, toddler, health status, weight gain, Posyandu*

### 1. INTRODUCTION

Early detection for Protein Energy Malnutrition (PEM) is highly needed due to difficulties to manage of improvement the severe malnutrition. In the empowerment program Indonesia namely posyandu, which aims to detection of PEM. Kader is trained volunteer women in knowledge and skill in primary health and nutrition, in the simple way by use growth chart used as a growth monitor nutritional status by weight for age a monthly<sup>(1)</sup>. There was four activities like weighing, assesment nutrition by growth chart, education, and distribute food supplement to average 100 toddler every month in posyandu<sup>(1)</sup>.

Kader have structured training from government however their performance as nutrition educator was low. It might be psychological factor influenced their ability to share their nutrition knowledge to the malnourished toddler mother<sup>(2)</sup>. Malnutrition in children was caused by infection and food intake factors. Appetite condition with anorexia could cause a restrictive eating could cause problems on nutrients intake and weight gain. This feeding disorder was almost complain of mother toddler as reason of children weight was stable for long time. Mother or the babysitter said their children was healthy but the problem was loss of their appetite to feeding. In the past anorexic infant were all classified together as having "Non Organic Failure to Thrive", is non disease, regardless of the etiology nuance. Infant anorexia has focused on cognitive development and mother-toddler inter-action during feeding<sup>(3)</sup>.

The onset of infantile anorexia begins during transition to spoon and self-feeding, sometime between 9 month and 18 month as children to begin to gain more control of their actions, as they learn to walk and talk, and they discover the world around them. They became too busy, they seem to have no more time to sit and eat. Typical behavior of children with Infantile anorexia include : lack of appetite, disinteresting in eating, enhanced interest in play and exploration during mealtime, extreme food refusal when offered most food, tantrum or climbing out of high chair and or leaving the table to play after only a view bites are eaten. All these factors contribute the poor overall intake on daily basis<sup>(4)</sup>.

It was different with children with sensory food aversion (SFA), in food refusal behavior. Children with SFA tend to restric intake of certain foods but maintain intake of others food<sup>(3,4)</sup>. This typical children have severe aversions to specific foods based on tastes, textures, smells, and or appearance that they find unappealing or are associated with unpleasant experiences (e.g. gagging, vomiting). Some reactions to these foods include grimacing, gagging, vomiting, or spitting out of food. This behavior can progress from refusing one food (e.g green vegetables) to refusing all vegetables, which risk increases the risk for nutrient deficiencies<sup>(3,4)</sup>. Anorexia seemed occur in different socio-economy status<sup>(5)</sup>.

It was often problem in weight gain of toddler, but missing have record in Paysandú. Faltering growth may occur in bio-physical disturbance in the cell body as a result of anorexia such as acute or chronic infection, nutritional growth disorder, psychology or parenting problems. This research study hold to analyses how was anorexia children could related to diseases or not and also how their weight gain and it could use as indicator of early detection of malnutrition

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toddler. Aim of study are to analyzed anorexia in early detection of malnutrition toddler in Posyandu. Specific aims : analysis of health status : symptoms of illness, analysis anorexia among toddler, analysis of problem in nutritional status on weight gain, analysis Odds ratio weight gain for sick and anorexia problems and analysis Odds ratio weight gain for sick and no anorexia problem.

## 2. METHODS

This research is part of monitoring malnutrition toddlers program in all posyandu Surabaya on 2007/2008 by Public Health Faculty of Airlangga University, which purposed to increase cadre's role on detection of nutrition problems by sign of anorexia, nutritional status in growth chart, and revitalization referral systems of PEM problem to Community Health Center. Sample was 1090 children underfives selected from population which malnutrition criteria in 2766 Posyandu in Surabaya. Criteria of Malnutrition according weight-for-age standard whose their nutrition status are Z score -2SD (it was the yellow line and under red line of growth chart ) as much as 1277 toddlers. Location selected in area of the assistance nutrition program to 2766 Posyandu in Surabaya, Indonesia. Data collected by the data was from visiting 1090 malnourished toddler's houses and interviewing toddler's mother about health status, anorexia, and anthropometry measurement (weight, height, and upper arm circumference) from January to March 2008. Data analyzed by entry data with SPSS for the variables anorexia, symptoms of illness, weight gain, then analyzing odds ratio from anorexia with weight gain and symptoms of illness.

## 3. RESULTS AND DISCUSSION

From the result of visiting of 1090 malnourished toddler in houses (table 1), there were found anorexia in 62,7% malnourished toddlers and 37,4% malnourished toddlers with no anorexia problem. Feeding disorder in toddler lead to growth deficits that may be irreversible if not properly treated before 12-24 month of age (6,7). Study on growth pattern indicate that an individual's grow trajectory is established between the ages of 12-36 month, after which stunting has been shown to remain permanen without proper early nutritional support (Lutter CK, Rivera JA, 2003, Shrimpton R, 1986).

Result from home visiting showed in table 1 about toddlers weight gain during 2 months on 1090 malnourished toddlers, it was found 340 (31,2%) weight gain toddlers. Weight loss or no weight gain was found in 543 (498%) malnourished toddlers and 207 (19%) malnourished toddlers with unknown weight status because they did not follow weighing program last month.

In children with weight gain, no weight gain and unknown also found the most appetite condition is anorexia, it was respectively 203, 305, 128 children from 681 anorexia malnourished children. In monitoring growth system of posyandu, children have no weight gain in two month respectively was report and referral to the health Centre (puskesmas) by kader, and then they analyzed their related factor of health status and nutritional status. Unfortunately that not all toddlers come to Posyandu, and consequently they were too long knowing toddler's condition just based on weight gain, so that on the third month toddlers will observed come in worse malnutrition condition. Also detection on weight gain could happen even to toddlers with under red line (severe malnourished sign) of nutrition status.

Average weight gain on anorexia toddlers was 0,39 kg/month (table 2), and toddler have no anorexia were have weight gain average 0,54 kg month (table 2). Whereas weight gain on sick toddlers was 0,40 kg/month, and weight gain on healthy toddlers 0,46 kg/month (table 3). Therefore anorexia build a restrictive eating condition will give more effect on weight gain than toddler's health condition.

Deteriorating condition on nutritional status may be affect and followed by slow and a platteu height growth. With respect to the macronutrients, protein especially from variety of animal products was provide a rich source of essential amino acids. Protein rich foods also deliver the majority of bioavailability zinc, iron, vitamin A, and vitamin D in the diet (9,11). Adequate fat intake from breast milk is critical in early infancy, providing energy and a source of essential omega -6 and omega-3 fatty acids. Fat intake decrease during weaning with introduction of complementary foods, which typically occurs between 6-12 month of age (6,7). It is important that children are introduced to a wide variety of foods at young age when healthy eating habit are established. Adequate intake of variety of whole foods should be a main goal of therapy for children with anorexia. In case vegetables was rich mineral calcium, iron, vitamin C which was limited consumption in anorexia toddler.

**Table 1. Anorexia and Weight Gain (2 month) on malnourished toddlers**

Appetite condition	Weight Gain		No Weight Gain		Unknown		Total	
	n	%	n	%	n	%	n	%
<b>Anorexia</b>	203	59,7	350	64,5	128	61,8	681	62,7
<b>No Anorexia</b>	137	40,3	193	35,5	79	38,2	409	37,4
<b>Total</b>	340	31,2	543	49,8	207	19,0	1090	100

**Table 2. Weight gain (kg) and Anorexia on Malnutrition Toddlers**

Appetite Condition	Average	n	Standard Deviation
Anorexia	0.39	195	0,3129
No anorexia	0.54	135	0,6701
<b>Total</b>	0.46	330	0,4961

Some studies have found that food supplementation alone may not enough to reverse stunting and the associated health consequences <sup>(9)</sup> .

It seem anorexia to be main factor in child growth. Therefore detection based on the analysis of body weight a month ago and now to be able to report whether toddler’s growth. At any fixed weight or weight loss should be a nutrition counseling so toddlers did not sunk into the circle of malnutrition causes, which are difficult to handle from parenting factor or health factor that have reciprocal relationship.

Health status also influences of the weight gain. Categorized healthy if toddler have no had symptoms of illness such as diarrhea, cough and fever which never. From table 3 showed that average of weight gain in healthy malnourished children was 0,47 kg a month and sick malnourished toddler was 0,40 kg a month.

Anorexia happened not only because of sickness as showed in table 4. Data on table 4 showed that anorexia found in 258 toddler have sick and anorexia also found mostly in of 423 toddlers (60,7%) are healthy toddler.

That anorexia may be cause of other factors such as psycho- social factor of children or mother-toddler relationship which all causes have a role of the growth of toddler. It may be condition psycho-social such as unwanted child or sibling brother or sister, cultural system which dominant father parenting, gender, or socio economic factor in a little food distribution for toddler. Factor such as parenting mother in nutrition care for toddler. Parent-child conflict occurs when parents struggle to coax infant anorexia children into eating more. Often parent establishes a pattern of force feeding and tries to feed the children in between meals or provide the child with the fluid formula (e.g sugar tea) and supplements throughout the day. The result is a child who is satiety and whose hunger and food intake are externally regulated by the child <sup>(2,3,4)</sup>. Toddler have the innate ability to ajust intake to meets calories need if allowed to do so <sup>(2,3,4)</sup>.

Capability to detect the sign of hunger and then feeding soon and satiety is one main goal of therapy of children with anorexia. With giving parenting consultation about learn sign of hunger, feeding toddlers with affection, giving attention on high calories breast milk complementary foods from family food. Also related case of anorexia with illness of the children, it giving attention on nutrient intake especially when toddlers are sick or recovering after sick, and mother should immediately bring toddlers to health care facility if there were any symptoms of illness such as diarrhea, cough, and cold. Also parent attention in care if found some causes of malnutrition toddlers could be an congenital disability such as harelip or metabolism disorder.

**Table 3. Weight Gain and Health Status (Symptoms of Illness) on Malnutrition Toddler**

Symptoms of Illness	Average	n	Standard Deviation
Sick	0.40	109	0.3423
Healthy	0.47	223	0.4796
<b>Total</b>	0.44	332	0.4398

**Table 4. Anorexia and health status**

Appetite condition	Sick		Healthy		Total	
	n	%	N	%	n	%
Anorexia	258	65.6	423	60.7	681	62.5
No anorexia	135	34.4	274	39.3	409	37.5
<b>Total</b>	393	36,1	697	63,9	1090	100

Odds ratio for sick and anorexia was 1,238 and Odds ratio anorexia and weight gain was 0,817. Therefore risk of anorexia on healthy and sick children was not significantly different . Also risk of anorexia on weight gain or weight loss was not different. Anorexia was found in health and psycho-social problem. Anorexia was important sign for toddler mother that it needed in nutrition care special. For volunter health worker like kader should be regularly monitor toddler especially the feeding practice, nutrition and health status. From this data also showed in the family practice such as parental care more focus when toddler with anorexia and also have sick, it compared with toddler anorexia without illness. Anorexia as psycho-social sign could be used as signal or indicator important beside antropometri to prevent svere malnourished toddler. This sign happens before sign of weight loss occurred. The lack of weight gain is further condition, so that when the attention of weighing result in Posyandu as an improvement of toddler’s nutritional status more difficult to be implemented

#### 4. Conclusion

Toddler anorexia was found in healthy and sick condition. Toddler anorexia also found have weight loss or weight gain. Anorexia could be psycho-social which important sign of toddler face of growth faltering periods, and it sign almost found in malnourished toddler in posyandu. A major consideration on PEM detection so prevention on malnutrition problems could be done earlier. With giving parenting consultation about how to know sign of hunger, giving feeding until satiety not only when anorexia toddler have sick. Mother-toddler relationship should be focus in posyandu program.

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