The Effect of Comprehensive Feeding Practices and Physical Activities on the Over-nutritional Status of Preschoolers in the Working Area of Juanda Community Health Center Samarinda

Debora Injilia Hartati, Reny Noviasty and Rahmi Susanti
Department of Public Health Mulawarman, Samarinda, Indonesia

Keywords: Physical Activity, Overweight, Comprehensive Feeding Practices, Preschool.

Abstract: The prevalence of obesity in children under five based on the latest Riskesdas (2018) is 8.0%. This is still a nutritional problem in Indonesia¸ although it's has shown a decrease case. Because it's causing other health problems. This study aimed to determine the effect of comprehensive feeding practices and physical activity on over nutritional status in preschool children at the working area of Puskesmas Juanda. The design of the study was a case control 1:2 with a total sample 36 IRT. Primary data collection used the CFPQ and Pre-PAQ, as well as secondary data through the latest posyandu weighing records. Data analysis used Chi Square test and Odds Ratio with a significance value of 0.05. The results showed that there was an effect of comprehensive feeding practices (p = 0.001; OR=26,714) and physical activity (p = 0.000; OR=33) on the over-nutrition status of preschool children (3-5 years) in the working area of Juanda Community Health Center Samarinda. It's advisable for mothers to pay more attention to the needs of the child's nutritional needs when feeding, and to support the child more actively by bringing the child to an open space area regularly (at least 180 minutes a day for children to move actively).

1 INTRODUCTION

Global data in 2018 shows that the number of under-fives who are over-nutrition is estimated at 5.9% (40 million) children, almost half of whom live in Asia and a quarter live in Africa. Since 2000-2018 cases of overnutrition in children under five in all countries have increased by 10 million cases. (UNICEF, WHO and The World Bank, 2019). In 2019 there were 38 million children under five who were overweight and obese (WHO, 2020).

Based on the latest trends, the number of children under five who are overnutrition is expected to increase (from 40 million children) to 43 million in 2025. Therefore, WHO sees that the problem of obesity in children under five is one of their attention focuses, because besides being important for the welfare of children, nutrition is also needed in achieving sustainable development goals. So that WHO sets obesity as one of the SDGs indicators and sets it as a global target to stop the increase in obesity by 2025 (UNICEF, 2019).

Indonesia's national data, according to Riskesdas in the last years 2018 (8,0%), has actually alredy shown a declining trend of over nutrition and obesity (BB/TB > 2 SD) (Kemenkes RI, 2019). However, it is still a nutritional problem in Indonesia because it is a contributor to the incidence of global obesity which must continue to be suppressed, because it is at risk of causing new problems, namely health problems, especially the increase in the incidence of PTM that arises faster than age in general (Kemenkes RI, 2020).

Indonesian national data shows that there are still 12 provinces with prevalence of overweight and obesity (Z score according to BB/TB > 2 SD) above the national prevalence in 2018, including East Kalimantan which is in the 6th highest rank after the national prevalence, with a percentage by 9.4% (Kemenkes RI, 2019). Then seen from DKP Kaltim data obtained through PSG in the last 3 years for over nutrition aged 0-59 months, namely 2015 (5.5%), 2016 (4.6%) and 2017 (4.7%). Seen from the PSG data, the trend of overnutrition is still fluctuating, so there are still two possibilities for the next PSG result, to go down/up.

Samarinda is one of the cities in Indonesia that also contributes to the incidence of overweight (BB/TB) in children under five, with a prevalence of

Hartati, D., Noviasty, R. and Susanti, R.
The Effect of Comprehensive Feeding Practices and Physical Activities on the Over-nutritional Status of Preschoolers in the Working Area of Juanda Community Health Center Samarinda.
DOI: 10.5220/0010758500003235
In *Proceedings of the 3rd International Conference on Social Determinants of Health (ICSDH 2021)*, pages 53-63
ISBN: 978-989-758-542-5

3.0% in 2017, and ranks the 2nd highest obesity case in children aged 0-4 years after Kukar, with 19 old and new cases, the 4th highest obesity case at the age of 5-9 years with a total of 11 cases, and the 3rd highest according to the overall age group, with a total of 2,242 cases (DKP Kaltim, 2018). The highest incidence of overweight and obesity in children under five in Samarinda in 2019 was in the Juanda Community Health Center work area, with a total of 71 cases (DKK Samarinda, 2019).

In the current millennial era, coupled with the enactment of the fourth industrial revolution (4.0) which applies an all-machine system and the concept of automation, it seems that it is increasingly supporting humans to carry out less physical activity. Related to this, WHO states that children aged 3-4 years should do more physical activity than sedentary activities (eg sitting still or staring at a screen for a long time). Guidelines for physical activity for children this age are at least 180 minutes / day with various types of physical activity and intensity (WHO, 2019).

Previous studies with the aim of analyzing the relationship between sleep duration, food intake and physical activity with the incidence of obesity in toddlers aged 3-5 years, the results showed that there was a significant relationship between sleep duration, food intake and physical activity with the incidence of obesity in toddlers aged 3-5 years. years ($p < 0.005$) (Tristiyanti, Tamtomo and Dewi, 2018).

Several related studies also state that children's eating behavior is strongly influenced by the family environment, especially at the age of 3-5 years. Where at this age the growth line in KMS begins to look flat, but his/her cognitive and psychosocial development is increasing rapidly (there is an increase in comprehension and memory). So that good habits that are applied since the child is at this age will play an important role in the independence of the child at a later age, including the application of a good diet. This is also in line with the CDC (2020) on Child Development (Mountin, 2020).

Changes in diet and physical activity are often the result of environmental and social changes associated with development and the lack of supportive policies (WHO, 2020). Parents, especially mothers, play a very important role in determining the diet of their toddlers. Knowledge of maternal nutrition is very influential in the selection of family food, which in turn will affect the nutritional status of all family members (especially toddlers) (Aditianti, Prihatini and Hermina, 2016). The comprehensive feeding practice carried out by the mother in question is providing food with nutrition that is in accordance with the child's needs, both in physical, mental and emotional development, starting from preschool age (Rysha, Gjergji and Ploeger, 2017).

In a preliminary survey conducted in Kemuning Village, Arjasa District regarding the comprehensive feeding practices of 5 mothers, the results showed that on average the mother gave more restrictions to the child if the child was sick, but when their returned to health, the mother would again free the child's food (Rahmawati, 2018). Based on the description above, the researcher wants to conduct a study related to the nutritional status of preschool aged children (3-5 years) in the working area of the Juanda Community Health Center Samarinda with the independent variables studied are the practice of feeding comprehensive and physical activity of children. Which the purpose of this study was to determine the effect of the practice of comprehensive feeding and physical activity on the nutritional status of preschool age children (3-5 years) in the Working Area of Juanda Community Health Center Samarinda.

2 RESEARCH METHOD

This type of this study was a analytic observational with a matched case control design, namely a study conducted retrospectively (looked at backwards events) by identifying the case group and the control group first, then examining the risk factors (in this case the negative comprehensive feeding practices and less physical activity). The independent variables in this study was the comprehensive feeding practices and physical activity, while the dependent variable was the nutritional status of preschoolers.

The total population in this study were all pairs of mothers and their preschool age children (3-5 years) with an age calculation range seen from the month and year of birth, with the upper limit being > 10 months in 2015 and the lower limit < 10 months in 2017 and with Zscore BMI/U - 2 SD, which was recorded in the results of anthropometric measurements of the posyandu in the Juanda Health Center work area in 2019 with a total of 283 children. Meanwhile, the population of cases with Zscore BMI/U > + 2 SD is 25 children.

The time used in the implementation of this study is mid-January - mid-March 2021. This research was carried out in the Juanda Community Health Center Work Area, Samarinda City, which consists of 2 Urban Village namely Air Hitam Urban Village and Gunung Kelua Urban Village. Sampling was carried out by non-probabilty sampling using a type of purposive sampling technique (this sampling was

based on subjective considerations from the researchers themselves in accordance with the inclusion and exclusion criteria that had been determined and considered). For samples using the formula Lemeshow as follows:

$$n = \frac{\{Z_{1-\alpha/2}\sqrt{2P(1-P)} + Z_{1-\beta}\sqrt{P_1(1-P_1)+P_2(1-P_2)}\}^2}{(P_1-P_2)^2}$$

Information:

n = Number of samples needed each group (cases and controls)

Z_(1-∝/2) = Standard normal distribution value at a certain 1.96 = 95% CI significance degree with of 5%

Z_(1-β) = The value of the standard normal distribution at a certain (1.28 = test power (power) by 90%)

P_1 = Estimated proportion of exposure in the case group (ill) which is 0.191 (Setiawan, Machmud and Masrul, 2018)

P_2 = Estimated proportion of exposure in the control group (not sick) which is 0.809 (Setiawan, Machmud and Masrul, 2018)

P $= \frac{P_1 + P_2}{2}$

$P = \frac{0{,}191+0{,}809}{2} = 0{,}5$

So, total of sample (n) in this study was:

$$= \frac{\{1{,}96\sqrt{2\,(0{,}5)(1-0{,}5)} + 1{,}28\sqrt{0{,}191\,(1-0{,}191)+0{,}809\,(1-0{,}809)}\}^2}{(0{,}191-0{,}809)^2}$$

$$= 11{,}52$$

To facilitate the calculation and processing of data on the sample, the researchers rounded the total sample into 12 toddlers (with BMI/U > 2 SD) as the case group, and 24 toddlers (with BMI/U -2 SD to 2 SD) as the control group, with a comparison of the samples used is 1: 2 (case group and control group) and the total number of children under five is 36 children under five. The inclusion criteria are as follows: Registered to be part of the Juanda Community Health Center working area, Samarinda City; Children aged 3-5 years whose BMI/U value is seen from the Z score > + 2 SD (for the case group), and Z score - 2 SD to + 2 SD according to BMI/U (for the control group); Mother's occupation as a Housewife (IRT) or taking care of her own children at home; Mother is willing to be a respondent in this study; Mentally and physically healthy both mother and child under five. Then the exclusion criteria are if: During the research, there is a family member (at home) who is sick so that the mother's time is taken up to take care of it; Die; or Resign.

Data collection using primary data and secondary data. Primary data collected using the Comprehensive Feeding Practices Questionnaire (CFPQ) and Preschool-age Physical Activity Questionnaires (Pre-PAQ), as well as secondary data through the latest posyandu weighing records. Data analyzed by Chi Square test and Odds Ratio with a significance value of 0.05.

All questionnaires were distributed via WhatsApp personal messages and filled out by mothers of toddlers who were the research sample or may be assisted by other family members, if at the time of filling out the questionnaire the mother was not fluent in using smartphones or lacked understanding in answering the available questionnaires. This CFPQ scoring system uses a Likert scale with a different format, namely for item numbers 1-12 Never = 1, Rarely = 2, Sometimes = 3, Often = 4, Always = 5. While for item numbers 13-38 No Agree = 1, Disagree = 2, Neutral = 3, Slightly Agree = 4, Agree = 5. Then, there is a statement that ends with the R logo, which indicates the statement is negative, so the assessment uses an inverted Likert scale. The measurement results from this CFPQ will be in the form of categories, which are as follows (Warkentin *et al.*, 2016):

a. Negative feeding practices (if score < median)
b. Positive feeding practice (if score median)

The results of the questionnaire Pre-PAQ are categorized into less physical activity (when the child is active <180 minutes/day) and sufficient physical activity (when the child is active 180 minutes/day) (WHO, 2019) .

Validity test is the principle of instrument reliability (questionnaire) which is measured and observed for data collection. In making a decision on the validity test, we must compare the r count with the r table. If r count > r table then the question item from the questionnaire is said to be valid, but if r count < r table then the question item from the questionnaire is said to be invalid. Reliability test is a test used to see the stability of the instrument (questionnaire) in collecting measurement results and research observations. That is, in every measurement and observation result with the same questionnaire questions but at different times will get the same results. (Donsu, 2017). The reliability test in this study was carried out using the Alpha Cronbach method. A variable in the questionnaire can be said to be reliable if it produces Cronbach's Alpha (α) > 0.6 (Ghozali, 2011).

3 RESULT AND DISCUSSION

3.1 Respondent Characteristics

Table 1: Frequency Distribution of Respondents' Characteristics on the Preschool Age Children in the Working Area of the Juanda Community Health Center, Samarinda.

Respondent Characteristics	Child's Nutritional Status	
	Over-Nutrition n=12(%)	Normal n=24(%)
Mother's Last Education		
No school/Not finished elementary school	1 (8,3%)	0 (0%)
Finished Elementary School	1 (8,3%)	1 (4,2%)
Finished Junior High School	0 (0%)	5 (20,8%)
Finished Senior High School	6 (50,0%)	10 (41,7%)
Graduated (D3/S1/S2/S3)	4 (33,3%)	8 (33,3%)
Mother's Employment Status		
Housewife	12 (100,0%)	24 (100,0%)
Etc	0 (0%)	0 (0%)
Number of Family Members in One House		
3 people	4 (33,3%)	2 (8,3%)
4 people	2 (16,7%)	12 (50,0%)
5 people	3 (25,0%)	6 (25,0%)
6 people	3 (25,0%)	4 (16,7%)
Child Gender		
Male	5 (41,7%)	10 (41,7%)
Female	7 (58,3%)	14 (58,3%)

Source: Primary Data, 2021

Based on the table 1 above, information can be obtained that most of the mothers last education in the sample group was high school graduates, namely in the group of preschool age children who experienced well-nutrition/normal (41.7%) and over-nutrition (50.0%) in the Juanda Health Center Samarinda. The occupational status of mothers from both groups (both normal and over-nutrition) are housewives (100%).

The majority of family members in one house in the group of preschool-aged children with normal status are 4 family members (50.0%) and in the group of preschool-aged children with over-nutrition status are 3 family members (33.3%). Then, the majority of respondents had preschool-aged children who were female in both groups, namely the normal group (58.3%) and the over-nutrition group (58.3%).

This research was conducted in the working area of Juanda Community Health Center Samarinda, which is located in the Samarinda Ulu District. The working area of the Juanda Samarinda Health Center consists of 2 Urban Village, namely Air Hitam Urban Village and Gunung Kelua Urban Village. Air Hitam and Gunung Kelua Urban Villages are geographically next to each other (to the east, Air Hitam Urban Village is Gunung Kelua Urban Village, and to the west Gunung Kelua Urban Village is Air Hitam Urban Village). Gunung Kelua Urban Village is located in the heart of the capital city of East Kalimantan Province where the centers of community activities such as economics (shopping centers) and academics (colleges and schools) are located in this area.

In line with the general description of the location of this study, in general the problems of overweight and obesity are supported by an increase in intake of energy-dense foods (high in fat and sugar) and an increase in sedentary activity due to the increasing number of sedentary jobs, changes in transportation modes, and increasing urbanization. (WHO, 2020). Likewise, the description of the location of this study which is overall in an urban area which is an obesogenic environment (an environment with a sedentary lifestyle and lots of fast food available with a relatively close distance from the house making it easier to access).

In line with the results of this study, the research of Schrempft et al. (2015) showed that preschoolers with obesogenic living environments, consumed less vegetables and fruits, compared to consuming high-energy snacks and drinking sugary drinks. In addition, the behavior of children in choosing their food is also inseparable from what they like and have known before. Therefore, the experience of children from an early age will greatly affect their food choices and preferences later (Scaglioni *et al.*, 2011).

The quality of food intake at preschool age is very dependent on parents (especially mothers). All supplies, serving, and eating habits at home will affect children's consumption patterns. There are several factors that influence parental feeding to their children, including economic, socio-cultural, educational, environmental, and maternal age (Sulistyoningsih, 2011). The results of research Farhan (2014) state that, one of the factors that determine whether or not someone easily absorbs and understands the nutritional knowledge they get is the level of education.

The characteristics of the research results in table 1 show the description of the last education of the majority of mothers who graduated from senior high

school, namely as many as 16 people (44.5%). At least, the majority of mothers have completed their education to fulfill the 12-year compulsory education program. From these results, it can also be seen that it is precisely at the level of high school graduation that on average they have children with more nutritional problems. This shows that in fact not all highly educated people will have good knowledge as well, or knowledge and higher education are not always directly proportional to that person's attitude or behavior.

The results of the study in the table 1 state that the majority of the number of family members in one house in the group of preschool age children with good nutritional status are 4 family members (50.0%) and in the group of preschool age children with more nutritional status are 3 family members (33.3%). Djala research (2016) says that the amount of food and the frequency of food consumed by each family member is influenced by the size of the number of family members.

The results of the study itn table 1 state that the majority of children with overnutrition status are female, as many as 7 children (58.3%). There are several factors that can be the cause of more girls than boys with more nutritional status, one of which is that women's metabolism is slower than men's. Men have a 10% higher basal metabolic rate than women, because women tend to convert food into fat, whereas in men more food is converted into muscle and as a ready-to-use energy reserve. (Lestari, 2017).

In addition to differences in basal metabolic rate, it was also stated in Lestari's research (2017) that lighter physical activity in women will certainly be a triggering factor for fat accumulation in the body as well. In line with the previous research, the results of the analysis in this study also showed that more or less physical activity occurred in children of the female sex than boys.

3.2 Univariat

3.2.1 Frequency Distribution of Respondents based on Comprehensive Feeding Practice

Table 2: Frequency Distribution of Respondents Based on Comprehensive Feeding Practices.

Category Comprehensive Feeding Practices	Over-Nutrition		Normal		Total	
	n=12	%	n=24	%	n=36	%
Monitoring						
Negative Feeding Practices	9	75,0%	6	25,0%	15	41,7%
Positive Feeding Practices	3	25,0%	18	75,0%	21	58,3%
Total	12	100,0%	24	100,0%	36	100,0%
Emotion Regulation						
Negative Feeding Practices	10	83,3%	4	16,7%	14	38,9%
Positive Feeding Practices	2	16,7%	20	83,3%	22	61,1%
Total	12	100,0%	24	100,0%	36	100,0%
Food as a Reward						
Negative Feeding Practices	8	66,7%	8	33,3%	16	44,4%
Positive Feeding Practices	4	33,3%	16	66,7%	20	55,6%
Total	12	100,0%	24	100,0%	36	100,0%
Child Control						
Negative Feeding Practices	10	83,3%	4	16,7%	14	38,9%
Positive Feeding Practices	2	16,7%	20	83,3%	22	61,1%
Total	12	100,0%	24	100,0%	36	100,0%
Healthy Eating Guide						
Negative Feeding Practices	9	75,0%	5	20,8%	14	38,9%
Positive Feeding Practices	3	25,0%	19	79,2%	22	61,1%
Total	12	100,0%	24	100,0%	36	100,0%
Pressure to Eat						
Negative Feeding Practices	8	66,7%	9	37,5%	17	47,2%
Positive Feeding Practices	4	33,3%	15	62,5%	19	52,8%

Category Comprehensive Feeding Practices	Over-Nutrition		Normal		Total	
	n=12	%	n=24	%	n=36	%
Total	12	100,0%	24	100,0%	36	100,0%
Restriction for Weight						
Negative Feeding Practices	6	50,0%	5	20,8%	11	30,6%
Positive Feeding Practices	6	50,0%	19	79,2%	25	69,4%
Total	12	100,0%	24	100,0%	36	100,0%
Healthy Environment						
Negative Feeding Practices	9	75,0%	3	12,5%	12	33,3%
Positive Feeding Practices	3	25,0%	21	87,5%	24	66,7%
Total	12	100,0%	24	100,0%	36	100,0%
Arrangements						
Negative Feeding Practices	10	83,3%	5	20,8%	15	41,7%
Positive Feeding Practices	2	16,7%	19	79,2%	21	58,3%
Total	12	100,0%	24	100,0%	36	100,0%

Source: Primary Data, 2021

Based on the table 2, information can be obtained that in the monitoring category in the characteristics of parental feeding practices to their preschool age children, there are 9 respondents (75.0%) in the case group and 6 respondents (25.0%) in the control group who carry out monitoring characteristics negatively. In the emotion regulation category, there were 10 respondents (83.3%) in the case group and 4 respondents (16.7%) in the control group who carried out negative emotion regulation characteristics. In the food as a reward category, there were 8 respondents (66.7%) in the case group and 8 respondents (33.3%) in the control group who carried out the characteristics of the food as a reward negatively. In the child control category, there were 10 respondents (83.3%) in the case group and 4 respondents (16.7%) in the control group who had negative child control characteristics.

In the healthy eating guide category, there were 9 respondents (75.0%) in the case group and 5 respondents (20.8%) in the control group who carried out the characteristics of the healthy eating guide negatively. In the restriction for weight category, there were 8 respondents (66.7%) in the case group and 9 respondents (37.5%) in the control group who carried out the characteristics of restriction for weight negatively. In the weight control category, there were 6 respondents (50.0%) in the case group and 5 respondents (20.8%) in the control group who had negative weight control characteristics. In the healthy environment category, there were 9 respondents (75.0%) in the case group and 3 respondents (12.5%) in the control group who carried out healthy environment characteristics negatively. In the arrangements category, there were 10 respondents (83.3%) in the case group and 5 respondents (20.8%) in the control group who had negative arrangements characteristics.

Positive feeding practices are feeding practices carried out by parents to their children by paying attention to the interaction between parents and children during the feeding process and in accordance with balanced nutrition or nutritional needs for the child's body, while negative feeding practices are the opposite. Overall, as seen from table 2, the most negative comprehensive feeding practices carried out by mothers in preschool aged children (3-5 years) in the Working Area of Juanda Community Health Center Samarinda is the "Pressure to Eat" category with a total of 17 respondents (47.2%) and the least negative is the “Restriction for Weight” category with a total of 11 respondents (30.6%). The results of the study in table 2 for the "monitoring" category show that mothers of preschool-aged children who are overweight are still relatively lacking in monitoring food intake consumption in children (with a percentage of 75%), so that the nutritional status needed by children is not met properly. Preschool age children are able to choose and know what food they want to eat and what they like, so this period can also be referred to as the transition period for children from passive consumers to active consumers. However, they do not understand to choose which foods are good and which are not good for health, so parents in this case play an important role in being able to control their children's eating choices in order to win nutritionally balanced food choices. (Permenkes RI No 41, 2014).

The results of the "emotional" category research show that mothers of preschool-aged children who

experience over-nutrition relatively often use food as an ingredient to divert children's feelings when children are angry or upset, in other words, parents use food or drink as a regulator of children's emotions (by percentage of 83.3%). When a child feels angry or upset, making his heart calm first and then helping him to talk about his feelings to the mother so that the child can find ways to deal with his emotions will be much better, than having to involve food (Misnadiarly, 2007).

The results of the "food as a reward" category research show that mothers of preschool-aged children who are over-nutrition still relatively often use their children's favorite food or drink as a reward for good behavior that has been carried out by children, usually in this case preschoolers prefer foods and drinks high in sugar (ie with a percentage of 66.7%). In appreciating a child's good behavior and stopping his bad behavior, giving snacks as a gift for him is not the right solution to appreciate his behavior. Looking for other ways, such as praising or thanking children for their good behavior will be better (Misnadiarly, 2007).

The results of the "child control" category research show that mothers of preschool-aged children who experience over-nutrition are still relatively lacking in controlling/controlling children's eating behavior and interacting in their feeding to maintain children's consumption patterns so that they are not arbitrary in choosing and consuming their food (with the percentage of 83.3%). An unhealthy child's diet can indeed lead to weight gain, but explicitly forbidding him to eat such foods is also not good. If children are too restricted/forbidded, they can eat more quietly behind their parents' back. So the best way is to control access to food like this at home. For example, when mothers shop for their daily food needs, mothers can pay more attention to preferences for food and snacks to be purchased (Misnadiarly, 2007).

The results of the research category "guidance for healthy eating" show that mothers of preschool-aged children who experience over-nutrition are still relatively lacking in carrying out healthy eating guidelines (such as telling, clearly describing, discussing, offering, and/or exemplifying good eating patterns) to their children (ie with a percentage of 75%). When parents want their children to live healthy, then parents must be the main example in their lives. Parents who have a good diet will also form a good diet in their children which can continue until they grow up (Misnadiarly, 2007). In line with this theory, the research conducted by Prasetyaningrum et al. (2016) also mentions that parental behavior plays a role in shaping eating behavior in children. It is known that preschool children (3-5 years) who live with mothers with unhealthy eating behavior are 2.45 times more likely to be obese.

The results of the "pressure to eat" category of research show that mothers of preschool-aged children who experience over-nutrition are still relatively feeding their children in a pressing or coercive style, so that children eat more food, especially when it is time to eat, usually done to increase the child's weight (ie with a percentage of 66.7%). As parents (especially mothers who take care of children intensely) must be able to realize nutritional needs for children in accordance with the activities they do everyday. If the child is full enough, the mother should not get used to forcing the child to continue eating or to always finish the contents of his plate (Misnadiarly, 2007).

The results of the research in the "restriction for weight" category show that mothers of preschool-aged children who are over-nutrition are still relatively unable to control/regulate their children's food intake to reduce or maintain their child's weight (that is, with a percentage of 50%). Getting used to eating regularly at predetermined hours can prevent children from obesity. But it must also be remembered that giving snacks that are high in sugar, fat and calories too often can also lead to obesity. Thus, making a commitment within the family to carry out healthy habits and determine the pattern and adhere to it, will make children interested in doing it and they will not feel alienated because of the same treatment for all family members including mothers (Misnadiarly, 2007).

The results of the "healthy environment" category research show that mothers of preschool-aged children who experience over-nutrition are still relatively lacking in providing healthy food and not a few of them actually provide more stock of unhealthy snacks at home, even though the family is the most important factor in determining children's diet (ie with a percentage of 75%). Children usually do not shop for their own food needs, parents are fully responsible for the stock of healthy food available at home. For mothers, it is recommended that when shopping, you should choose fruits and vegetables as a snack supply at home and avoid choosing fast food, limit the purchase of sugary drinks because they only provide less nutrition than the high calories they have, and choose recipes and cooking methods with the use of as little fat as possible (such as baking/boiling) (Misnadiarly, 2007).

The results of the research in the “arrangements” category show that mothers of preschool-aged children who are more over-nutrition are still relatively insensitive to the importance of their role as mothers in regulating their children's consumption patterns (ie with a percentage of 83.3). Of the 9 variables of comprehensive feeding practices studied, the variable that was mostly carried out on preschool-aged children (3-5 years) in the Working Area of Juanda Community Health Center Samarinda with a negative category (in case and control groups) was the "coercive" variable, namely 17 respondents (47.2%). Meanwhile, the variable that was the least negative (in both case and control groups) was the “weight control” variable, namely 11 respondents (30.6%).

3.2.2 Frequency Distribution of Respondents based on Children's Physical Activity

Table 3: Frequency Distribution of Respondents Based on Children's Physical Activity.

Category Children’s Physical Activity	Over-Nutrition		Normal		Total	
	n= 12	%	n= 24	%	n= 36	%
Less	9	75%	2	8,3%	11	30,6%
Sufficient	3	25%	22	91,7%	25	69,4%
Total	12	100%	24	100%	36	100%

Source: Primary Data, 2021

In table 3 above, information can be obtained that from 12 preschool-aged children with over-nutritional status as many as 9 children (75%) do physical activity in the less category and 3 children (25%) do physical activity in the sufficient category. Meanwhile out of 24 children with normal nutritional status, 2 children (8.3%) did physical activity in the less category and 22 children (91.7%) did physical activity in the sufficient category.

From table 3, information can also be obtained that the physical activity of preschoolers (3-5 years) in the Working Area of the Juanda Samarinda Health Center is on average in the sufficient category, as many as 25 children (69.4%) have sufficient physical activity category. It's just that in children with more nutritional status, the majority of preschoolers still have a category of less physical activity, as many as 9 children (75%). In line with the results of this study, the research of Carson et al. (2017) also found that children with over-nutritional status had less physical activity than children with normal nutritional status.

The results of this study also showed that children with normal nutritional status but classified as having less physical activity were 2 children (8.3%) out of 36 children (100%). This shows that physical activity is not also the only factor that influences the incidence of overnutrition. Research conducted by Wilks et al. (2011) actually get the results that there is no significant relationship between physical activity and body fat mass. In the study, physical activity was not the main determinant of unhealthy weight gain in children.

3.3 Bivariat

3.3.1 The Effect of Comprehensive Feeding Practices on over Nutritional Status of Preschool Age Children in the Working Area of Juanda Community Health Center Samarinda

Based on table 4, it can be seen that of the 12 respondents who have preschool-aged children with over-nutritional status, there are 11 respondents (91.7%) of whom practice comprehensive feeding in the negative category and 1 respondent (8.3%) does comprehensive feeding practices with positive category. Meanwhile, of the 24 respondents who had preschool-aged children with good nutritional status, 7 respondents (29.2%) does comprehensive feeding practices with negative category and 17 respondents (70.8%) does comprehensive feeding practices with positive category.

Table 4: The Effect of Comprehensive Feeding Practices on Over Nutritional Status of Preschool Age Children in the working area of Juanda Community Health Center Samarinda.

			Nutritional Status		P Value	OR (CI:95%) Bottom-Up
			Over-Nutrition	Normal		
Comprehensive Feeding Practices	Negative Feeding Practices	Count	11	7	0,001	26,714 (2,877 – 248,023)
		% within Status Gizi	91.7%	29.2%		
		Expected Count	6.0	12.0		
	Positive Feeding Practices	Count	1	17		
		% within Status Gizi	8.3%	70.8%		
		Expected Count	6.0	12.0		

Source: Primary Data, 2021

Based on the results of the statistical test, the P value (P Value) was 0.001. Because the P Value (significance) is less than 0.05, it can be concluded that there is an effect of comprehensive feeding practices on the nutritional status of preschool age (3-

5 years) in the Working Area of Juanda Community Health Center Samarinda, with an Odds Ratio (OR) of 26.714 OR > 1) which means that there is a possibility that a child with a negative comprehensive feeding practice will have a 26.7 times greater risk of experiencing overnutrition than a child with a positive comprehensive feeding practice..

In line with the results of this study, other studies also state that the practice of caring for toddlers and mother's knowledge affect the nutritional status of toddlers (Masita, Biswan and Puspita, 2018). The results of other studies that support also state that there is a significant relationship between eating patterns and the nutritional status of children under five (P Value = 0.014) (Pratiwi, Masrul and Yerizel, 2016). How parents apply their parenting style to their children, will also determine what their child's life will be like in the future, and this is in line with the research of Suratman et al. (2018). Thus, parents (especially in this case mothers) play an important role in the growth and development of children through parenting practices and the provision of nutrients to children.

Without having to look at whether children are at risk of being overweight or even having an ideal weight, paying attention to the food you eat so that you can consistently maintain an ideal weight is a good example for children. So, from here, mothers can invite their children to participate in doing healthy habits together. (Misnadiarly, 2007).

3.3.2 The Effect of Physical Activity on over Nutritional Status of Preschool Age Children in the Working Area of Juanda Community Health Center Samarinda

Table 5: The Effect of Physical Activity on Over Nutritional Status of Preschool Age Children in the working area of Juanda Community Health Center Samarinda.

			Nutritional Status		P Value	OR (CI:95%) Bottom-Up
			Over-Nutrition	Normal		
Physical Activity	Less	Count	9	2	0,000	33,000 (4,695 – 231,956)
		% within Status Gizi	75.0%	8.3%		
		Expected Count	3.7	7.3		
	Sufficient	Count	3	22		
		% within Status Gizi	25.0%	91.7%		
		Expected Count	8.3	16.7		

Source: Primary Data, 2021

Based on the results of the statistical test on the table 5, the P value was 0.000 (<0.05). Thus, it can be concluded that there is an effect of physical activity on the over-nutritional status of preschool aged children (3-5 years) in the Working Area of Juanda Community Health Center Samarinda, with an Odds Ratio (OR) of 33 (OR > 1) which means that there is a possibility that a child experiencing over-nutrition due to lack of physical activity which is 33 times greater than if the child has sufficient physical activity. In line with the results of this study, the research of Rahmah et al. (2019) also stated that physical activity (p= 0.004) and physical activity parenting (p= 0.01) were the most influential risk factors for the incidence of over-nutrition in preschool children.

The results show that almost all children spend their time eating in front of a screen (be it a smartphone or television). Habits like this can make children consume food unconsciously how much food they have eaten and make children eat in a hurry (Misnadiarly, 2007). In addition, parents also very rarely bring their children to play in open spaces/areas such as riverbanks, nature reserves, environmental parks/tourist parks, or even playgrounds to increase children's activities.

Children, especially preschoolers, should not spend their time solely on sedentary activities, such as watching television coupled with excessive snacking, playing video games and the like, or just lying in bed for more than 60 minutes. Spending time with active activities is very important for preschoolers, there are at least 180 minutes per day to do physical activity of any intensity which 60 minutes in it includes doing moderate to strenuous physical activity (energetic games) such as running, cycling and dancing, that makes children sweating and panting (WHO, 2019).

The results of this study also show that on average children need someone to accompany them to be motivated to play. Meanwhile, on the other hand, the results of this study also show that the time used by children to play outdoors (whether on weekends or weekdays) is very little or even no time for children to play outdoors, especially for children with over-nutritional status, even in good weather conditions. So that children's activities at home are sufficient limited and more use of screens or smartphones.

Parents are also responsible for the habits of activities carried out by children. Parents must have a "supportive" attitude for every activity children. In supporting the activities carried out by children, parents can make family policies/commitments to be obeyed and carried out by every family member,

including parents. Some examples of good policies to do are parents being a real example for every activity both indoors/outdoors, encouraging children to try new activities and responding positively when they do it, and providing fun and interesting activities every day (Nemours Health & Prevention Services, 2013).

When children are active and there are dangers of safety problems and/or other problems (such as mud, fights over fighting over toys with friends, etc.), parents need to direct their children well and slowly so that children return to playing in safe activities or invite them to discussion about what to do when faced with it. Parents also need to avoid using physical activity as a punishment. (Nemours Health & Prevention Services, 2013).

4 CONCLUSIONS

After conducting research on 36 respondents to housewives (IRT) who have preschool aged children (3-5 years) in the working area of Juanda Health Center Samarinda, it can be concluded that there is an effect of the practice of comprehensive feeding on the nutritional status of preschool children (3-5 years) in the working area of the Juanda Health Center, Samarinda, with a P Value of 0.001 (<0.05) and an Odds Ratio of 26.714 (OR > 1) which that is, children with mothers who practice negative comprehensive feeding have a 26,714 times greater risk of experiencing over-nutrition compared to children of mothers who practice positive feeding. Parents need to provide an "exemplary" attitude in terms of eating behavior, for example if the mother wants her child to eat healthy food, the mother also needs to set an example and start as early as possible to create a "good habit/activity".

There is an effect of physical activity on the nutritional status of preschool children (3-5 years) in the working area of Juanda Community Health Center Samarinda, with a P Value of 0.000 (<0.05) and an Odds Ratio of 33 (OR> 1) which means, Children with less physical activity have a 33 times greater risk of experiencing over-nutrition than children of mothers who do quiet physical activity. It is recommended for mothers to be more supportive of children in moving more actively by bringing children to open space areas regularly (at least 180 minutes a day for children to be active).

REFERENCES

Aditianti, A., Prihatini, S. and Hermina, H. (2016) 'Pengetahuan, Sikap dan Perilaku Individu Tentang Makanan Beraneka Ragam sebagai Salah Satu Indikator Keluarga Sadar Gizi (KADARZI)', Buletin Penelitian Kesehatan, 44(2), pp. 117–126. doi: 10.22435/bpk.v44i2.5455.117-126.

Carson, V. et al. (2017) 'Systematic review of the relationships between physical activity and health indicators in the early years (0-4 years)', BMC Public Health. Available at: https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-017-4860-0.

Djala, P. N. V. (2016) Hubungan Antara Status Sosial Ekonomi Terhadap Obesitas Sentral Pada Orang Dewasa Sehat di Desa Kepuharjo, Kecamatan Cangkringan, Yogyakarta. Universitas Sanata Dharma Yogyakarta.

Donsu, J. D. T. (2017) Metodologi Penelitian Keperawatan. Yogyakarta: Pustaka Baru.

Farhan, M. (2014) Hubungan Pengetahuan Ibu Rumah Tangga Tentang Gizi Seimbang Dan Perilaku Pemenuhan Gizi Pada Balita Usia 3-5 Tahun Di Desa Banjarsari Kec Ciawi Kabupaten Bogor, Skripsi Keperawatan. Universitas Islam Negeri Syarif Hidayatullah Jakarta.

Ghozali, I. (2011) Aplikasi Analisis Multivariate Dengan Program IBM SPSS 19. Semarang: Badan Penerbit Universitas Diponegoro.

Kemenkes RI (2020) 'Gizi Saat Remaja Tentukan Kualitas Keturunan', Biro Komunikasi dan Pelayanan Masyarakat, Kemenkes RI. Available at: https://www.kemkes.go.id/article/view/20012600004/gizi-saat-remaja-tentukan-kualitas-keturunan.html.

Kemenkes RI, B. P. dan P. (Balitbang) (2019) 'Laporan Hasil Riset Kesehatan Dasar (Riskesdas) Indonesia tahun 2018', Riset Kesehatan Dasar 2018, pp. 182–183.

Lestari (2017) 'Hubungan Pola Makan Dengan Kejadian Obesitas Pada Anak Usia 3-8 Tahun Di TK Dan SD Budi Mulia Dua Seturan Yogyakarta', Naskah Publikasi, p. 4.

Masita, M., Biswan, M. and Puspita, E. (2018) 'Pola Asuh Ibu dan Status Gizi Balita', Quality : Jurnal Kesehatan, 12(2), pp. 23–32. doi: 10.36082/qjk.v12i2.44.

Misnadiarly (2007) Obesitas Sebagai Faktor Risiko Beberapa Penyakit. 1st edn. Jakarta: Pustaka Obor Populer.

Mountin, J. W. (2020) 'Child Development'. Amerika Serikat: Centers for Disease Control and Prevention. Available at: https://www.cdc.gov/ncbddd/childdevelopment/facts.html.

Nemours Health & Prevention Services (2013) 'Best Practices for Physical Activity, v3'. Available at: https://d3knp61p33sjvn.cloudfront.net/media-resources/ECELC/C2P2/LS3/ECE_Program_Participants/English_PhysicalActivityGuide_FINAL.pdf.

Permenkes RI No 41 (2014) 'Pedoman Gizi Seimbang'. Available at:

http://kesmas.kemkes.go.id/perpu/konten/permenkes/pmk-no.-41-ttg-pedoman-gizi-seimbang.

Prasetyaningrum, Y. I., Kertia, N. and Gunawan, I. M. A. (2016) Home Food Environment Sebagai Faktor Risiko Kegemukan Pada Anak Prasekolah Di Kota Yogyakarta. Universitas Gadjah Mada. Available at: http://etd.repository.ugm.ac.id/home/detail_pencarian/95143.

Pratiwi, T. D., Masrul, M. and Yerizel, E. (2016) 'Hubungan Pola Asuh Ibu dengan Status Gizi Balita di Wilayah Kerja Puskesmas Belimbing Kota Padang', Jurnal Kesehatan Andalas, 5(3), pp. 661–665. doi: 10.25077/jka.v5i3.595.

Rahmah, N. D., Ardiaria, M. and Dieny, F. F. (2019) 'Pola Asuh Aktivitas Fisik Terhadap Risiko Kejadian Gizi Lebih Pada Anak Prasekolah Di Kecamatan Ngesrep Dan Tembalang, Semarang', Gizi Indonesia, 42(1), p. 1. doi: 10.36457/gizindo.v42i1.363.

Rahmawati, L. W. (2018) Hubungan Praktik Komprehensif Pemberian Makanan Dengan Status Gizi Anak Preschool Di Desa Kemuning Kecamatan Arjasa Kabupaten Jember. Jember. Available at: https://repository.unej.ac.id/bitstream/handle/123456789/91072/Laili Wiji Rahmawati-152310101027.pdf?sequence=1.

Rysha, A., Gjergji, T. M. and Ploeger, A. (2017) 'Nutritional status of preschool children attending kindergartens in Kosovo', Journal of Health, Population and Nutrition. Journal of Health, Population and Nutrition, 36(1). doi: 10.1186/s41043-017-0105-1.

Scaglioni, S. et al. (2011) 'Determinants of children's eating behavior', American Journal of Clinical Nutrition, 94(6), pp. 2006–2011. doi: 10.3945/ajcn.110.001685.

Schrempft, S. et al. (2015) 'The obesogenic quality of the home environment: Associations with diet, physical activity, TV viewing, and BMI in preschool children', PLoS ONE, 10(8), pp. 1–17. doi: 10.1371/journal.pone.0134490.

Setiawan, E., Machmud, R. and Masrul (2018) 'Artikel Penelitian Faktor-Faktor yang Berhubungan dengan Kejadian Stunting pada Anak Usia 24-59 Bulan di Wilayah Kerja Puskesmas Andalas Kecamatan Padang Timur Kota Padang Tahun 2018', jurnal.fk.unand, 7(2), pp. 275–284.

Sulistyoningsih, H. (2011) Gizi Untuk Kesehatan Ibu dan Anak. Yogyakarta: Graha Ilmu.

Suratman, P. V. G., Triandhini, R. L. N. K. R. and Nusawakan, A. W. (2018) 'Parenting System Towards Feeding the Children of Elementary Students at Binaus Village Pola Asuh Orang Tua Terhadap Pemberian Makan Pada Anak Usia Sekolah Dasar di Desa Binaus', pp. 22–28.

Tristiyanti, W. F., Tamtomo, D. G. and Dewi, Y. L. R. (2018) 'Analisis Durasi Tidur, Asupan Makanan, dan Aktivitas Fisik sebagai Faktor Risiko Kejadian Obesitas pada Balita Usia 3-5 Tahun', Sari Pediatri, 20(3), p. 178. doi: 10.14238/sp20.3.2018.178-84.

UNICEF (2019) Children , food and nutrition. Edited by S. Wauchope and et al. New York: United Nations Children's Fun (UNICEF). Available at: https://www.unicef.org/media/61871/file/SOWC-2019.pdf.

UNICEF, WHO and The World Bank (2019) Levels and Trends in Child Malnutrition: Key Findings Of The 2019 Edition. Geneva. Available at: https://www.who.int/nutgrowthdb/jme-2019-key-findings.pdf?ua=1.

Warkentin, S. et al. (2016) 'Validation of the comprehensive feeding practices questionnaire in parents of preschool children in Brazil', BMC Public Health. BMC Public Health, 16(1), pp. 1–12. doi: 10.1186/s12889-016-3282-8.

WHO (2019) WHO Guidelines on physical activity, sedentary behaviour, World Health Organization. Available at: https://apps.who.int/iris/bitstream/handle/10665/325147/WHO-NMH-PND-2019.4-eng.pdf?sequence=1&isAllowed=y%0Ahttp://www.who.int/iris/handle/10665/311664%0Ahttps://apps.who.int/iris/handle/10665/325147.

WHO (2020) 'Obesity and Overweight', World Health Organization, 1 April. Available at: https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight.

Wilks, D. C. et al. (2011) 'Objectively measured physical activity and fat mass in children: A bias-adjusted meta-analysis of prospective studies', PLoS ONE, 6(2). doi: 10.1371/journal.pone.0017205.