

Empowering Mothers through Mentoring on 6-60 Months Children's Nutrition Care: An Effort to Prevent Child Malnutrition

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ABSTRACT

The prevalence of malnutrition in Indonesia in the last 20 years remains high. This shows that management through curative aspects is not enough. A new strategy is needed to solve the problem as well as to overcome the risk factors. The root cause of malnutrition in Indonesia is the lack of maternal knowledge and power towards their nutrition status. This study aims to determine the mentoring that To do through a tutorial module on malnutrition risk factors. This expects to empower mothers on caring for 6-60 months old children. This research is a two-sample experimental study with controls. Respondents were mothers who had children aged 6-60 months. A total of 39 mothers choose a control group and 38 mothers as a treatment group. The mentoring method was given to the treatment group while providing counseling to the control group: multivariate ANOVA and independent t-tests to show maternal empowerment. Mentoring on caregiving was very effective in increasing mothers' abilities to care for their children's nutrition ($p < 0.05$). Hence, the mentoring method could empower mothers to care for their children ($p = 0.005$). It took six months to empower 13.2% of mothers with a minimum knowledge score of 2.5 and practice of 3.1 times, respectively, much higher than the counseling method. Mothers who are already empowering will be aware of any deviation in their children's nutritional status.

Keywords: caregiving, children, mentoring, mother empowerment, risk factors

INTRODUCTION

In Indonesia, the government is against malnutrition in curative aspects, either through maternal skills in feeding children, or high economy, or infection. The same with the opinion [1], the district is being prominent in the district with malnutrition-related to the mother's nutritional status and maternal independence. Inadequate nutrition is born nutrients were lack of energy, protein, or other micronutrients due to its adverse effects on the problem and function of tissues and clinical results [2]. Curative control cannot be practical to the mother in the environment (including children's frogs), bound to happen [3,4]. In Indonesia, the prevalence of childhood malnutrition was unchanged from 2003 to 2013, about 19% [5, 6], although slightly decreased in 2018 by 17.7% [7]. Malnutrition incidence in children under five years old in Surabaya, East Java, Indonesia in 2005 remained high at 28.9% [8], sustainable development goals (SDGs) in 2025 (22.3%) [9]. These figures show that the problem has not changed in the past two decades. Malnutrition is one of the primary victims of death in toddlers and one of the most common factors that pose a threat to children's life and health [10]. malnutrition has a mortality rate of about 45% in children under five, despite concerted efforts in malnutrition [11]. For malnutrition of origin, the factors causing it are still present and diking [12]. New strategies are needed to control malnutrition in children

to the root of the problem and at the same time to address risk factors [13]. Factors that influence include maternal knowledge, household socio-economic conditions, and distance [14]. Therefore, the prevention aspect can consider as an alternative approach.

The root cause of malnutrition in Indonesia is the lack of maternal skills to care for their child's nutritional status ($p = 0.02$) [8]. The role of mothers is the most crucial factor in alleviating the negative impact of dietary problems through their care. Concerning risk factors related to malnourished children in Indonesia are nutrition and health care, breastfeeding, feeding, and environmental management [15]. Child nutrition care consists of the mother's ability to recognize the signs of malnutrition beforehand and monitor the child's growth. Watching a child's development is essential for a health assessment. Energy intake adjusts to energy needs to achieve normal body weight and height for age [16]. The recommended growth graph for use in evaluating children's growth by the World Health Organization (WHO) is compiled based on National Center for Health Statistics (NCHS) data [17].

The parenting risk approach is a new strategy in addressing the problem of malnourished children. Child health and nutritional care are essential for their survival and growth. Children's development reflects their nutritional status [18-20]. Malnutrition can cause physical problems and decrease the quality of life [21]. Mothers should be sensitive in detecting risk factors in parenting that can lead to child malnutrition. That

Table 1. Distribution of frequency for respondents' characteristic of treatment and control groups with proportion value of t-test

Characteristic	Group				Total	Independent t-test between treatment and control groups		
	Treatment		Control			n	%	p-value
	n	%	n	%				
Age (year)								
15-30	14	36.8	24	63.2	38	100	0.373	
31-45	24	61.5	15	38.5	39	100		
Educational level								
Low	23	48.9	24	51.1	47	100	0.989	
High	15	50	15	50	30	100		
Occupation								
Yes	9	42.9	12	57.1	21	100	0.492	
No	29	51.8	27	48.2	56	100		

Notes:

1. Low educational level was described as less than or equal to 9-year formal education.
2. High educational level was described as more than or equal to 10-year formal education

way, mothers can make plans to control children's nutrition and addressing problems that may arise [19,22]. The importance of meeting the needs of balanced nutrition is to prevent the disease in the future, especially chronic diseases among the disease Focus on child health work [23].

Malnutrition information is a significant challenge for mothers. It encourages women's empowerment to build family and community support to increase knowledge and eliminate misinformation about diet to improve health and nutrition [24]. Do an assignment with mentoring. This includes individual learning through mentoring on parenting risks in the Parenting Skills Training Course Module and natural parenting learning [22,25]. Do the teaching well through social media and direct knowledge [26]. Nutrition assistance is currently emphasizing counseling, where role models and partnerships are still needed to solve existing problems rather than on society's potential. Based on the explanation, this study aims to determine that mentoring through a tutorial module based on parenting risk factors can empower mothers in caring for children aged 6-60 months.

MATERIALS AND METHODS

This was a two-sample experimental study with controls. There were treatment and control groups divided into four subgroups based on respondents' education level and occupation. The story of education impacts the knowledge that someone has [27]. The mentoring method was provided to the treatment group, while the control group received the counseling method.

Both groups received learning material consisting of caregiving risk factors related to child malnutrition. The risk factors were general caregiving, growth monitoring, body weight and height measurement, child's nutrition maintenance, breastfeeding, feeding, recognizing the early signs of illness, and maintaining hygiene as well as environmental sanitation.

Risk factor learning in mentoring was provided through the module tutorial strategy, while in the control group by counseling. The mentoring group was also given caregiving skill training and learning in the field. Skill training materials were done by measuring weight and height, growth monitoring, feeding, and recognizing early signs of illness in the child. Indicators of the success of intervention were caregiving empowerment, which includes increased knowledge, attitudes, and practices of mothers to care for their children.

This study was conducted in three poor sub-districts of Surabaya, East Java, Indonesia. Based on the sample size formula experimental design. The proportion of maternal empowerment from each group before the treatment was 12.9% (the USAID WVI 2005 Surabaya survey results showed that only 12.9% of mothers received good care). The expected proportion reached 45%, with α 0.05 and β 0.2 after the treatment. It was found that 38 mothers in the treatment group and 39 mothers in the control group. The inclusion criteria were non-broken families, poor, urban families, having one physically average child and the mothers as the primary caregiver, having formal education diplomas, and participating in mentoring for six months.

The sampling technique was random cluster sampling. One Public Health Centre (PHC) was selected from each sub-district, then 3 Integrated Health Centre (IHC) were chosen from each PHC. Ten mothers who met the inclusion criteria were selected from each IHC. Furthermore, they were divided into treatment or control groups.

The dependent variable of this study was the empowerment of mothers in child nutrition care, and the independent variable was the mentoring of caregiving. Multivariate ANOVA and independent-two-sample t-tests were used to determine maternal assignment in caregiving their child [28]. Before the intervention, the respondents have explained the treatment. Afterward, respondents were asked to sign an agreement to participate in this study.

RESULTS

This study collected 39 mothers as a control group and 38 mothers as a treatment group from three poor subdistricts of Surabaya.

Table 1 showed that respondents' age, education level, and occupation do not differ in both groups ($p > 0.05$). Likewise, their ability to care for sick children was not different before treatment, and the data had normal distribution ($p > 0.05$).

Descriptively, the difference in the average value of the mentoring group was higher than that of the control group. The result of empowerment is better for the mentoring group. Based on standard deviation values, both groups showed significant variations in learning outcomes. In the mentoring group, significant variations showed the results of the individual teaching applied. Differences in the average value of

Table 2. Mean difference, standard deviation, and probability value of the T and multivariate

Mothers' abilities	Knowledge		Mean difference	Skill		Mean difference	
	Treatment	Control		Treatment	Control		
Caregiving for children aged 6-60 month	mean	229.59	23.5	9.77	45.8	0.84	54,5
	SD	143.1	151.25		35.98	28.27	
	Manova test	p=0.0001			p=0.0001		
Maintaining child's growth	mean	244.9	24.78	9.88	59.87	-11.67	6.1
	SD	114.7	42.95		38.25	30.23	
	Manova test	p=0.0001			p=0.0001		
Measuring body's weight and height	mean	208.06	83.16	2.5	275.12	48.26	5.7
	SD	168.43	105.06		120.8	110.67	
	Manova test	p=0.0001			p=0.0001		
Maintaining child's nutrition	mean	513.89	1.8	258.5	24.55	7.9	3.1
	SD	188.59	162.79		26.19	38.05	
	Manova test	p=0.0001			p=0.001		
Breastfeeding	Mean	322.47	14.27	22.6	24.55	7.9	10.8
	SD	119	117.67		26.19	38.05	
	Independent t-test	p=0.0001			p=0.0001		
Feeding	Mean	928.24	39.77	23.3	77.65	6.4	12.1
	SD	354.3	243.48		37.57	34.8	
	Manova test	p=0.0001			p=0.0001		
Maintaining good hygiene and environmental sanitation	Mean	1176.8	334.55	3.5	204.65	58.88	3.5
	SD	1514.3	969.79		157.48	256.02	
	Independent t-test	p=0.005			p=0.005		
Recognizing early signs of a sick child	Mean	816.66	114.54	7.1	179.5	53.0	3.4
	SD	301.7	302.2		105.86	176.67	
	Independent t-test	p=0.0001			p=0.0001		

Table 3. Frequency distribution in percent of mothers who have the ability of caregiving based on treatment group

Mothers' abilities	Treatment group, n=38				Control Group, n=39			
	Pre		Post		Pre		Post	
	n	(%)	n	(%)	n	(%)	n	(%)
Caregiving for child aged 6-60 month	0	0	5	13.2	0	0	0	0
Maintaining child's growth	0	0	7	18.4	0	0	0	0
Measuring body's weight and height	0	0	20	52.6	0	0	0	0
Maintaining child's nutrition	1	2.6	25	65.8	0	0	1	2.6
Breastfeeding	0	0	21	55.3	0	0	0	0
Feeding	0	0	25	65.8	0	0	1	2.6
Maintaining good hygiene and environmental sanitation	10	26.3	37	97.4	5	12.8	10	25.6
Recognizing early signs of a illness or sickness	0	0	35	92.1	0	0	2	5.1

Note: Assessment of mothers' caregiving abilities is calculated at more than 70%

knowledge and practice in the two groups ($p < 0.005$) can be seen in **Table 2**.

Mentoring using child caregiving module learning effectively increased mothers' caregiving abilities related to their child's nutrition ($p < 0.05$). The slightest difference between the two groups (2.5 times) occurred in the mothers' knowledge about measuring the child's weight and height. 52.5% of mothers had this ability for more than 70%, so it took 11.4 months for all mothers to understand this care properly. In the treatment group, changes in the average value of caregiving practices that were more than 100 (like measuring child weight and height, maintaining their hygiene and sanitation, recognizing signs of a sick child) are shown as results of mothers' training activities. Thus, it can be concluded that behavior change with repeated training showed more tremendous activity changes.

Descriptively **Table 3** shows that those who receive mentoring may improve their ability to care for sick children.

A few mothers who managed at the end of the mentoring correctly showed that the care provided was new to the mother. Conversely, more than 50% of mothers who had the ability at the end of the mentoring showed that caregiving's

theme was often done in their daily lives or could be caused by provided training during mentoring.

DISCUSSION

The tutorial module learning resulted in better empowerment efforts compared to counseling ($p < 0.005$). The module tutorial gave a difference in mean caregiving knowledge at least 2.5 times higher than counseling. In contrast, the average difference in caregiving practices was at least 3.1 times higher. The intermediate parenting practice is higher than the mother's knowledge due to skills training or parenting norms that mothers often carry out. The more senses are used in influencing behavior change, the easier the behavior change occurs.

Mentoring is better than counseling because of the following reasons. Tutorial learning is individualized, while counseling is done together [29]. It presents an explanation that builds actual events that exist as a problem and can explore mothers' experiences as students in similar cases that need to be discussed. Thus, various issues that exist and the potential of each participant can be used by other participants

as experience to be known as a process that must be done in solving problems. Negative experiences often leave a deep impression on the participants. If the occasion is appropriately discussed, it can lead to a lasting positive outlook. Every mother becomes a rich source of learning, and at the same time, she provides a broad base for learning something new. Factors of the level of intelligence, self-confidence, and controlled feelings must be recognized as individual personal rights. The decisions participants make do not have to be always the same.

The tutorial learning involves all participants in learning activities and giving ideas, not only from the theory presented by the supervisor, thus enabling the optimal development of each individual. They feel valuable and had self-respect in front of their peers, having confidence in themselves. Togetherness in groups does not always have to be the same because it acknowledges one truth without criticism that shows the differences, including the differences in their potential.

Learning with modules aims to make students become themselves, understand life's necessities, and carry out their social role assignments. Empowerment does not dominate class groups much and seeks to find alternatives to develop participants' personalities based on their potential and experience. Tutorials can form intensive communication of existing problems because of the guaranteed closeness of the mother and empowerment, increasing the mother's sensitivity to aspects of life that affect health according to the individual's potential.

Learning is not a self-adjustment imposed by others as counseling but needs to deal with life problems that are always dynamic in line with risk factors for caregiving skills. Learning together by tutorial helps mothers deal with the dynamics of behavior change that will produce long-lasting positive behavior [30,31]. Resilience to this positive behavior is formed based on personal experience adjusted by the awareness of the potential risks with consequences. Furthermore, they simultaneously respond and act according to their potential, leading to new stimuli adapted to other new concepts based on existing experience. Thus, this process continues and develops to form self-improvement efforts. In counseling, forced behavior changes will not last long and cannot follow dynamics.

Learning about a child's weight and height measurements increases mothers' empowerment to monitor a child's growth. Growth indicators are dynamic which can be followed from time to time when the weight deviation occurs. The application of mentoring to the nutrition prevention program can significantly improve the child's nutritional status. Policy in several countries in ASEAN applies the nutritional status of children as an indicator of the progress of the people's welfare, not by the average supply or consumption of energy and protein [30]. Adequate food supply does not guarantee every household member to get adequate food and good nutritional status, so it is necessary to understand that it is very important to reduce malnourished and micronutrient people deficiency [32]. Adequate food supply does not guarantee that every household member gets sufficient food and good nutritional status. Many other factors can interfere with the process of establishing a good nutritional status, including clean water, environmental hygiene, and essential health services.

Likewise, the application of the module to maintain a child's hygiene and sanitation and to recognize the early signs of the sick child in a nutrition improvement program can

support a child's nutrition status. Changes in the environment and incidence of a sick child can indicate a dynamic on a child's health and interfere with a child's nutrition status. The success of the nutrition program will be more quickly achieved by improving the environment.

Only 13.2% of mothers have the caregiving ability after mentoring for six months. Thus, it took at least 46 months to empower all mothers to care for children with a minimum capability of 70%. The empowerment of caregiving must be carried out as early as possible before the mother is pregnant for the first time or when the mother is still a teenager.

Generally, mothers have the initial concept that caring for children is natural; mothers are obliged to keep children alive. Likewise, to maintain children's growth, children are miniatures of adults so that in caring for children, mothers care for children as they care for adults. Mothers are not aware of the differences in life needed for children from adult life, including children's growth. The new concept is that mothers must be caregivers according to the child's growth and development.

Changing behavior in something new takes a long time, especially at the stage of contemplation. Mothers begin to realize the importance of caregiving their children and maintaining their growth. With the consideration of mothers' potential, there is a strong sense of ambivalence about changing behavior in a better direction—conversely, behavioral changes in things that have been done as a habit. Mothers have been in the maintenance stage; it does not require a long time to change the behavior.

CONCLUSION

Mentoring can be used as a new effort in solving child nutrition problems. This effort uses an integrative risk care approach based on community potential, uses indicators of child growth dynamics, and pays attention to the risks of environmental hygiene and children's hygiene. Mothers who had already been empowered will be aware of any deviation in their children's nutritional status. Moreover, the success of the nutrition program will be more quickly achieved by empowering mothers. This study suggests that health policymakers and clinicians prioritize empowering mothers as one of the solutions to prevent child malnutrition.

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