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THE INFLUENCE OF DASAWISMA EMPOWERMENT ATTITUDES AND BEHAVIORS OF COMPLEMENTARY FEEDING (MPASI) FROM MORINGA OLEIFERA IN CHILDREN UNDER TWO YEARS OLD

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ABSTRACT

The incidence of stunting in Indonesia was still quite high even though in 2022 it has dropped to 21.6%, but it is still higher than the WHO standard of 20%. Providing complementary food by paying attention to the type of material and processing is the right effort in preventing stunting. Moringa leaves as a type of vegetable with vitamins A, C, and B6, calcium, potassium, and iron can be an option as complementary foods for children under two years. Even so, complementary feeding made from Moringa leaves must be done properly so that the child gets optimal nutrition and can prevent stunting. Based on this statement, this study was conducted to determine the effectiveness of dasawisma assistance on the attitudes and behaviors of complementary feeding by moringa in children under 2 years old. The research design was a Quasy Experiment with a pretest and posttest design approach. Respondents of the study were 100 families with children under two years old who were randomly taken in 10 villages in the Karanganom Klaten Health Center area. Training effectiveness was analyzed with the Wilcoxon test. The results showed that homestead assistance had a significant effect on increasing the positive attitude of mothers/companions with children under two years (baduta) old in providing complementary food for children under two years old (Mean±SD = 63.67±10.88: mean different: -4.59; p= 0.01); increased MPASI behavior (Mean±SD = 17.52±1.39 increased from 15.89±4.46, and mean different values: -1.63; p = 0.009).

Keywords: Dasawisma*, MPASI, Behavior, Attitude, Moringa Oleifera*

INTRODUCTION

Stunting is still a big challenge in Indonesia. Based on the Global Nutrition Report in 2018, Indonesia's stunting prevalence from 132 countries is ranked 108th, while in Southeast Asia Indonesia's stunting prevalence is the second highest after Cambodia (WHO, 2018). This figure is certainly very worrying, considering that the most valuable resource for a country is quality human resources (HR). This condition can affect the development of the nation, based on BPS in 2019, as many as 79.55 million children are part of the nation's future (BPS Indonesia, 2019). Even though in 2022 the prevalence of stunting in Indonesia will have decreased, according to WHO, Indonesia is still one of the countries with a high stunting rate and does not yet meet standards. The results of the Indonesian Nutritional Status Survey (SSGI) stunting prevalence in Indonesia in 2022, decreased from 24.4% to 21.6%, still higher than the WHO standard of 20%.

Stunting prevalence in Klaten Regency until 2020 showed that there were 8407 children or around 10.6% stunted. The health office through Puskesmas and related agencies has conducted socialization on how to prevent stunting through direct and indirect health counseling, but it turns out that there are still many factors that cannot be changed, namely knowledge, attitudes, and perceptions of the community which greatly affect the practices and

behaviors of the community and mothers, especially in stunting prevention. The results of the initial study through interviews with stakeholders obtained information that one of the factors suspected to contribute to the high rate of stunting is the inappropriate pattern of providing complementary food. There are still many mothers who do not understand the importance of processing and providing complementary foods with vitamins, calcium, potassium, and iron. Some mothers with low economic status have the perception that complementary materials are expensive MPASI materials can use various types of vegetables, fruits, and staples available. Moringa leaves are a type of vegetable that is easy to obtain, cheap, and nutritious so it can be used as a complementary food. This study aimed to analyze the effect of *dasawisma* assistance on the attitude and behavior of giving complementary food made from Moringa leaves to mothers with children under two years old or caregivers.

Moringa leaves are a type of vegetable that is widely found by the people of Indonesia but has abundant micronutrient content (Boateng et al., 2018). Vitamins A, B6, C, potassium, iron, and protein in Moringa leaves are advantageous and effective in children's growth process (Katmawanti et al., 2021). Some research proved that the intake of vitamins, potassium, and iron in Moringa leaves is equivalent to other types of vegetables and milk. Therefore, moringa leaves can be combined with other foodstuffs or used as moringa leaf flour for MPASI (Katmawanti et al., 2021); (Nuraina et al., 2022). Moringa leaf flour has a digestibility of up to 85% so it is suitable for use as MPASI and is good for the baby's digestive system (Sara et al., 2023).

Dasawisma is a program that is carried out through a small-scale approach to the community, consisting of ten families who provide information and empowerment related to health. All information and problems related to maternal and child health, nutritional problems, and disease treatment are monitored with a smaller scope. With the existence of *dasawisma*, families at risk of stunting will be easier to monitor and immediately resolve. The mission of *dasawisma* is to change the lifestyle of the community around the environment for the better so that a comfortable, clean, beautiful, healthy environment is created and residents can coexist harmoniously.

This study was the next stage of the 2nd research which provides empirical evidence that training health cadres in a *dasawisma* with an Interprofessional Collaboration approach, has an effective in increasing knowledge and cadres about stunting prevention efforts. Following up on the results of the study, trained dasawisma cadres assist families who have children under the age of 2 (two) years. Based on this statement, this study aimed to determine the influence of *dasawisma* assistance on family attitudes and behavior in providing complementary foods (MPASI) made from Moringa leaves.

RESEARCH METHOD

The research method was a Quasy Experiment research with a pretest-posttest design approach. The research was conducted in the working area of Pukesmas Karanganom, Klaten Regency, Central Java from March to November 2023. The population in this study was all families in the working area of the Karanganom health center, Klaten the research sample taken was mothers in 100 families with children under the age of two years in 10 dasawisma selected using random sampling quotas. The research instrument used to measure attitude uses MCQ questions with Positive and Negative assessments. The MCQ question discussed the accuracy of giving complementary foods with Moringa ingredients, the accuracy of choosing the composition and quality of ingredients for complementary foods, and the quantity of complementary foods. Meanwhile, the mother in the family's behavior at risk of stunting is measured using an assessment checklist with good and fewer indicators. The research data were analyzed using the Wilcoxon test.

Intervention: Mentoring *Dasawisma* Cadres

The intervention or treatment given to this research was the assistance of mothers with children under two years old by trained dasawisma cadres. *Dasawisma* training on stunting prevention was conducted in phase II research. The implementation of assistance using stunting prevention module media and the provision of complementary food made from moringa leaves along with the right way to process it, with a minimum duration of 1 home visit per week, and regular monitoring every month. During the mentoring, trained dasawisma cadres educate, demonstrating how to make complementary foods made from moringa leaves, monitor, and evaluate the knowledge, attitudes, and behaviors of mothers or caregivers of children under two years old in stunting prevention, including the provision of complementary foods made from moringa leaves, how to process and select moringa leaves as complementary food and psychosocial stimulation.

RESEARCH RESULT

Demographic Data

Results in Table 1. Explain the demographic data of mothers with two-year-old children (*baduta*) based on age, education, occupation, and religion. While in Table 2. Describes a two-year-old child's birth history data based on place of birth, birth method, and birth weight.

Table 1. Demographic Data of Mothers with child under two years old

Variable	Frequency (n)	Percentage (%)
Age (32,6±5,64)		
<21	2	2.00
21 - 35	70	70.00
36 - 45	21	21.00
>45	7	7.00
Education level		
Primary	7	7.00
Medium	80	80.00
High	13	13.00
Occupation		
Labor worker	10	10.00
Lecture	1	1.00
Teacher	4	4.00
Housewife	71	71.00
Private sector worker	14	14.00
Religion		
Islam	100	100

Table 2. Birth History Data of a child under two years old

Birth History	Frequency (n)	Percentage (%)
Place of birth		
Midwife	5	5.00
Hospital	95	95.00
Birth Method		
Normal	87	87.00
Sectio Caesaria (SC)	13	13.00
Birth Weight		
<1000	0	0.00
1000 – 2400	12	12.00
> 2400	88	88.00

Normality Test

The normality test results are in Table 3. The normality test results of all variables in pre and post-intervention show a p-value of <0.05 which means abnormally distributed. Because the data is not normally distributed, the researchers used the Wilcoxon Test as an alternative dependent T-Test (Fay *et al*., 2019)

Table 3. Data Normality Test Results with Kolmogorof Smirnov Test

Variable	Asymp. Sig. (2-tailed)	
	Pre	Post
Attitude of MPASI	0,005	0,003
Behaviour of MPASI	0,000	0,000

*Test distribution is Normal p>0,05

Data Analysis Result

The results are in Table 4. Shows that *dasawisma* assistance significantly affects the increase in positive attitudes of mothers/companions of a child under two years (*Baduta*) in the provision of complementary food for a child under two years old (Mean±SD = 63.67±10.88: mean different: -4.59; p= 0.01) and increase the behavior of giving complementary foods/MPASI (Mean±SD = 17.52±1.39 increased from 15.89±4.46, and mean different values: -1.63; p=0.009).

Table 4. Wilcoxon Test Results The Effect of Mentoring Dasawisma on the Attitude of Mothers with Child under Two Years Old on MPASI using Moringa

Variable	Attitude of MPASI		
	Pre	Post	
	Mean±SD	Mean±SD	
Mean	59,08±10,49	63,67±10,88	
Mean Different			-4.59
Negative Ranks			39
Positive Ranks			61
Ties			0
Asym.Sig.(2 Tailed)			0,011

Table 5. Wilcoxon Test Results The Effect of Mentoring Dasawisma on the Behavior of Mothers with Child Under Two Years Old in Giving MPASI using Moringa

Variable	Behaviour of MPASI		
	Pre	Post	
	Mean±SD	Mean±SD	
Mean	15,89±4,46	17,52±1,39	
Mean Different			-1,63
Negative Ranks			30
Positive Ranks			45
Ties			25
Asym.Sig.(2 Tailed)			0,009

DISCUSSION

The Effect of *Dasawisma* Cadre Assistance on the Attitude of Giving MPASI using Moringa Leaves

The results showed that assistance by dasawisma cadres had a significant effect on increasing the positive attitude of mothers with children under two years old or child companions regarding the provision of complementary food made from Moringa leaves for children under two years old (p: 0.01; mean:63.67±10.88:mean different:-4.59). This result is also supported by the fact that the Positive Ranks value reached 61 which means 61 respondents experienced an increase in value. On the Negative Ranks (decrease in value) there were 39 respondents and those whose scores were the same (ties) as many as 0 respondents. Attitude is defined as vision, how a person sees something, while the broad meaning is view or understanding, which is how someone perceives or interprets something (Fauziah et al., 2017). Another definition of attitude is according to Donsu, which defines attitude as the final process of observation that begins with the process of sense, that is, the process of receiving a stimulus by the sensory apparatus then passed on to the brain, and then the individual realizes about something that is being addressed(Thahir, 2018). As the result of a sensing analysis process, attitudes can be in the form of a person's final decisions manifested in the form of opinions, attitudes, or behaviors, such as right or wrong, positive or negative, afraid or courageous, anxious or ordinary, attentive or apathetic (Donsu, 2017). According to this definition, attitudes can be formed after individuals obtain new information and then ponder and even make observations on something so that judgments arise about the new object such as agreeing or disagreeing, good or bad, positive or negative, and others.

Attitudes are a very influential component in the adoption and formation of new behaviors (Notoatmodjo, 2014; Susilowati, 2016). Complementary feeding (MPASI/ *Makanan Pendamping ASI*) is an important component in increasing nutritional intake in children (MCA Indonesia, 2013);(Kemenkes RI, 2018). Micro and macronutrients in Moringa leaves as complementary foods are also a recommendation in providing MPASI. However, not all mothers or caregivers of children have a positive attitude towards this. In the previous phase one research, there were variations in attitudes from mothers with children under two years old caregivers about this MPASI. In addition, there are issues, stigmas, and beliefs that Moringa leaves are often used in corpse baths making people not want to consume Moringa leaves (Nuraina et al., 2022). Many mothers or caregivers have an inappropriate attitude towards giving complementary foods. However, through assistance by *dasawisma* cadres, it turned out to be able to improve the positive attitude and perception of mothers with children under two years old or caregivers in terms of providing complementary food made from moringa leaves. Contact or meetings of *dasawisma* cadres with respondents who are more frequent because of the proximity of the place, namely one RT area, also greatly affect the attitude of respondents. The process of informal mentoring and interaction as well as rapid information obtained from *dasawisma* cadres needed for their children's health, triggered an increase in positive attitudes about

complementary feeding. Following the theory, attitude is a term that reflects a sense of pleasure, displeasure, or mediocre (neutral) feelings of a person towards something. That "something" can be objects, events, situations, people, or groups(Budiman & Riyanto, 2014). If what arises towards something is a feeling of pleasure, then it is called a positive attitude, while if it is an unhappy feeling, a negative attitude, if there is no feeling, it means that the attitude is neutral (Donsu, 2017; Kurniati, 2016). Human behavior is all human activities or activities, both directly observable and non-observable from the outside (Siregar, 2020). Behavior is a response or reaction of a person to a stimulus from outside. Based on the form of response to the stimulus, behavior can be divided into two, namely overt behavior, which is a response to a stimulus that can be observed by others. The response to the stimulus is evident in action or practice that can be easily observed by others and in covert behavior in which the response to a stimulus cannot yet be observed by others. A person's response to this stimulus is still limited to attention, feelings, perceptions, knowledge, and attitudes toward the stimulus (Fauziah *et al.*, 2017);(Pakpahan *et al*., 2021). Therefore, mothers need to know about the right complementary feeding to prevent stunting. Based on research (Sudarianti et al., 2022) shows that there is a relationship between maternal behavior, knowledge, and actions toward the provision of complementary foods, and this will affect stunting prevention efforts.

The Effect of Mentoring *Dasawisma* Cadres on the Behavior of Giving MPASI using Moringa Leaves

Human behavior is all human activities or activities, both directly observable and non-observable from the outside (Duckworth & Gross, 2020); (Widyawati, 2020). The results of the study provide an empirical picture of the increase in the behavior of mothers with children under two years old in providing complementary foods made from moringa leaves, as evidenced by the p-value; of 0.009, the average value of 17.52±1.39 increased from 15.89±4.46, and the mean difference value: -1.63. The number of respondents who experienced an increase in value (positive Ranks) was 45 respondents, which decreased by 30 respondents, and the value remained at 25 respondents. The main purpose of mentoring *dasawisma* cadres to mothers with children under two years old is to a change in maternal behavior, after getting exposure related to stunting, parenting patterns, MPASI needs, and psychosocial stimulation of children under two years old. This is in line with the theory of parenting patterns with the Nurturing Care approach (WHO, 2018), it is said that providing adequate nutrition to children will greatly help the growth and development of children.

The behavior of providing complementary foods according to the needs of children under two years old, as stated in the MCH book in 2021, children will be able to grow and develop according to their age, although children may be born with conditions that are at risk of stunting, such as Body weight born less than 2500 gr, body length born less than 48 cm and others. Giving animal protein as complementary foods and substitutes for breast milk in children, especially under the age of 2 years, is an important component that needs to be used as a healthy behavior of mothers who take care of a child under two years old (Kementerian PPN/ Bappenas, 2018). This information is under the parenting style in providing complementary foods which must pay attention to variations in intake according to the needs of a child under two years old. Although the knowledge component between the control group and the intervention is not different, terms of the behavior of giving complementary food, to the companion of the homestead can make the mother or the children's main caregiver very enthusiastic in changing the behavior of giving complementary food and processing MPASI made from Moringa leaves to her child, because it is very motivated by the condition of the children who is always healthy, with growth and development by his needs. The condition of

giving MPASI made from Moringa leaves to children under two years old during the mentoring
time is monitored in the monitoring card. The positive attitude of the mother toward complementary feeding or supplementary feeding in children will affect the acceptance of the mother or caregiver and affect the behavior of complementary feeding after the child enters the age of 1 – 2 years(Rakotomanana *et al.*, 2020);(Schnefke *et al*., 2023). Knowledge and attitude also affect the timeliness of mothers in providing complementary foods for the initiation of supplementary foods (Owais *et al*., 2019). This statement is proven by (Nuraina et al., 2022) research, that mothers who have a high attitude and knowledge about the appropriateness of complementary feeding have toddlers with a lower risk of stunting. Knowledge of how to process Moringa leaves properly is also one of the important factors in providing complementary foods so that the nutritional content in Moringa leaves is maintained and not defective. This study still has some limitations in explaining the effectiveness of providing moringa leaf-based complementary foods for stunting prevention. The suggestion is that future research can explain in more detail the benefits of moringa leaves as a complementary food so that it can be applied by health cadres and mothers with children under two years old.

CONCLUSION

The empowerment of *dasawisma* cadres can improve attitudes toward the provision of complementary food and the behavior of giving complementary foods made from moringa leaves to children under the age of 2 years who are at risk of stunting.

SUGGESTION

The empowerment of *dasawisma* cadres related to the provision of complementary foods made from moringa leaves can be considered in the model of preventing or reducing stunting events.

CONFLICT OF INTEREST

In this study, there is no conflict of interest specifically or generally between researchers and all stakeholders

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