The Influence of Nutritional Coaching (in the Network) on the Level of Nutritional Knowledge of Mothers of Stunting Toddler

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Abstract: Stunting is still an unresolved nutritional problem. Stunting in children is the result of chronic malnutrition or impaired growth and development in the past. The stunting rate among toddlers in Mojokerto Regency is 27.4% (2021). This research aims to analyze the influence of nutritional coaching (in the network) on the level of nutritional knowledge of mothers of stunting toddlers in Sooko District, Mojokerto Regency. This research is a quasi-experimental research with a pretest-posttest control group design. The sampling technique used was purposive sampling. The research instrument used a nutritional knowledge questionnaire and a 24-hour recall form. The type of data is primary data with statistical analysis using Paired sample T-test. Online nutritional coaching can increase the difference in the value of the mother's nutritional knowledge level, showing significant changes between before and after treatment with a p value of 0.000. Based on statistical tests between groups, a p-value of 0.005 was obtained. Statistical tests on these differences resulted in p < 0.05, meaning the differences were significant between groups. The conclusion of this research is that online nutritional coaching via leaflets can increase the nutritional knowledge of stunted mothers of toddlers.

Keywords: Health education; Level of nutrition knowledge; Online nutrition coaching; Stunting toddlers

Introduction

Short stature, known as childhood stunting, is the result of chronic malnutrition or failure to thrive in the past. Stunted children can be identified by their height, whether it corresponds to their growth rate according to their age or not. Stunting is also associated with impaired neurocognitive development and the risk of developing non-communicable diseases in the future (Kemenkes RI, 2016). The impact of stunting can be detrimental in terms of health and productivity (Lestari et al., 2020). Based on SSGI (Indonesian Nutrition Status Survey) data, in 2021 the stunting rate will be 21.4%. Meanwhile, the stunting rate in East Java Province is 23.5%. The stunting rate for toddlers in Mojokerto Regency is 27.4% in 2021 (Kementerian Kesehatan Republik Indonesia, 2021). This also refers to the decision of the Minister of National Development Planning/Director of Bappenas No. KEP 42/M.PPN/HK/04/2020 states that Mojokerto Regency is one of the focus locations for implementing intervention measures to reduce the incidence of integration disease. Stunting malnutrition was identified in 2018-2020 (Bappenas, 2021). Based on this prevalence, it is still lower than the figure expected by WHO (World Health Organization), namely <20% (Kementerian Desa, 2017). This figure is still far from the target of reducing
the stunting rate in Indonesia to 14% by 2024 (Kementerian Sekretariat Negara RI, 2020).

Based on the decision of the Regent of Mojokerto Regency, a number of sub-districts that receive priority in handling malnourished and stunted children in 2022 are Dawarblandong District, Puri District, Puri Gondang District, Jetis District, District, Puri District, Jatirejo Region. District, Mojosari District, Ngoro District, Trawas District, Dlanggu District, Gedeg and Sooko District (Keputusan Bupati Mojokerto No 291, 2021).

Many factors influence the occurrence of stunting, one of which is the level of consumption and the baby’s mother’s lack of knowledge regarding nutritional requirements. So a mother plays a big role in maintaining the nutritional status of her toddler (Amaliah et al., 2012). In research conducted in Malang Regency, knowledge regarding nutrition of mothers of stunted toddlers, parenting patterns for stunted toddlers were not appropriate, such as not paying attention to toddlers when they didn’t want to eat, lack of accuracy in giving MP-ASIL, less attention to nutritionally conscious family behavior and less attention to needs. nutrition for toddlers (as long as they are full), then the availability and security of food in the families of stunted toddlers, health services for mothers of stunted toddlers during pregnancy, access to clean water sources, the economic level of families of stunted toddlers, social culture of family eating, and caring for stunted toddlers are some of the factors that influence the incidence of stunting (Supariasa et al., 2019).

This statement is in line with research conducted in Kupang Regency, stating that there is a real correlation between the incidence of stunting in toddlers and the level of education of parents, number of family members, and knowledge about maternal diet, especially regarding child nutrition, as well as protein and carbohydrate intake (Aurima et al., 2021).

Likewise, there are many studies on the relationship between maternal knowledge and the incidence of stunting. Among other things, research conducted by Kholidah et al. (2020) states that there is a relationship between maternal knowledge about nutrition and the incidence of stunting. The higher the mother’s level of knowledge regarding nutrition, this will reduce the incidence of stunting in children. Other research also states that there is no significant relationship between maternal knowledge and attitudes and the incidence of stunting in toddlers (Harikatang et al., 2020). A literature study conducted by (Ramdhani et al. (2020) also stated that the level of knowledge of mothers of toddlers is related to the incidence of stunting.

According to the factors that influence stunting, researchers chose a method of assisting mothers of stunted toddlers aged 0-59 months. Implementation of this mentoring program has significant benefits for families receiving care. Realizing the importance of parenting styles in caring for families and improving the nutritional status of early childhood, one must start by applying the knowledge gained from companions (Siswanti et al., 2016). However, nutritional assistance in this research will be carried out online during the post-pandemic period. Hikmiyah et al. (2019) conducted research which stated that online nutritional assistance using e-books and video media was effective in increasing the literacy rate of pregnant women and increasing energy consumption.

Currently, very sophisticated digital communications have developed. So, it does not rule out the possibility of trying to keep up with current developments in accordance with existing capacities in society. One way is by communicating certain things within the network, including nutrition education and assistance. This is also supported by research by Simanjuntak et al. (2022) that using social-based public nutrition education can increase knowledge, where social media is a means of education within the network itself. Then, this introduction is also strengthened by the effectiveness of online learning using zoom meetings Monica et al. (2021).

In another study by Al-fadhilah (2020) stated that nutritional support based on the zoom meeting application influence on knowledge about First 1000 Days of Life (1000 HPK) on teenagers aged 13-18 years in the Regency Lamongan. Online classes have an effect on knowledge, but have no effect on attitudes and Hb levels of pregnant women with anemia at the Bukit Hindu Community Health Center, Palangka Raya City (Ketut et al., 2021).

There is also research that produces influential but not significant results, namely research by Siregar et al. (2022) stated that from education using online and offline methods, the mother’s knowledge score for both methods was good and there was no significant difference. Then, there is also research which states that there is a significant increase in knowledge among mothers/caregivers regarding the nutritional status of toddlers and IYCF skills by using online education and consultation services during the Covid-19 pandemic in NTB (Anggraeni et al., 2021).

Based on the background, the author is interested in carrying out research with the title “The Influence Of Nutritional Coaching (In The Network) On The Level Of Nutritional Knowledge Of Mothers Of Stunting Toddler in Sooko District, Mojokerto Regency”. Then, the aim of this research is to analyze the effect of online nutritional assistance on the level of nutritional knowledge of
mothers of stunted toddlers in Sooko District, Mojokerto Regency.

**Method**

This research is a quasi-experimental type with a pre-test and post-test design with control group. The sampling technique used purposive sampling, by calculating the sample size we obtained 48 people with a lost follow up of 10% so that the total sample in this study was 50 people per treatment.

There are inclusion and exclusion criteria for research subjects. Inclusion: mothers aged 20-40 years and have toddlers (6-59 months) with Z-score categories according to PB/U or TB/U (-3 SD to < -2 SD) short and (< -3 SD) very short; mother has formal education, at least high school or equivalent and can use gadgets; domiciled in Sooko District, Mojokerto Regency, East Java; toddlers are in good health; and mothers of toddlers can read and write. Meanwhile, the exclusion criteria: toddlers who are sick; toddler's mother is illiterate; toddler mothers cannot use gadgets; and the mother of a toddler skipping school during the designated assistance schedule. Mothers of toddlers take part in nutritional assistance activities according to a predetermined schedule. Before treatment is carried out on the samples, a pre-test (initial test) and post-test (final test) are given. The variable in this research, namely online nutritional assistance, is the independent variable and the mother's level of knowledge is the dependent variable.

This research was conducted on two groups, namely the treatment group and the control group, namely: the treatment group was given an online nutrition assistance program along with intermediary media in the form of leaflets. Meanwhile, the control group was not given an online nutrition assistance program but was still given intermediary media in the form of leaflets.

This research was conducted for one month using the online nutritional assistance method. Mentoring is carried out in the preliminary session in the first week with face-to-face meetings, intensive session mentoring is carried out online in the second week, strengthening session mentoring in the third week is carried out online, mentoring in independent practice sessions and the post test and closing are carried out in the fourth week face to face.

**Result and Discussion**

This research was conducted in 5 villages in Sooko District, Mojokerto Regency. The five villages are Sambiroto Village, Gemekan Village, Japan Village, Wringinrejo Village, and Modongan Village. These villages have the closest borders to urban areas, which are very familiar and understand the use of gadgets, especially smartphones. So researchers have no difficulty when determining research subjects in this study. There are 142 stunted toddlers in Sooko District, Mojokerto and in this study 100 samples were taken who met the requirements with purposive sampling before. In carrying out the research, this research was assisted by health workers, posyandu cadres and research assistants.

Most of the respondents in this study were housewives with first children who had incomes below the minimum wage. Which still requires more knowledge as a new mother. There are still frequent incidents regarding toddler nutrition that are linked to local myths, such as not being allowed to eat fish because your child could get worms. This is a particular concern in caring for stunted toddlers. Apart from that, mothers of toddlers don't know enough about stunting, some don't even know at all. Through nutritional assistance, mothers of toddlers receive counseling regarding nutrition and stunting individually and in groups. For mothers who already have toddlers who experience stunting, this can prevent it from happening to their next child (Sinuraya et al., 2019).

Researchers conduct research in accordance with the framework that has been created, namely as follows:

![Research Implementation Framework](image-url)

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Data on differences in knowledge scores are not normally distributed so they are described using the
Through interviews with local health workers, respondents received a deep understanding of the material and the problems they face. Because the time used in this assistance is limited, respondents were very enthusiastic and actively listened, learned, and asked questions to the researcher during the tutorial session. However, after intervention, whether through online nutritional support or simply distributing brochures, poor results in terms of nutritional knowledge were obtained. Based on the statistical test of knowledge scores, the difference test was carried out using the Wilcoxon signed rank test. The control group has a p-value of 0.01, while the treatment group has a p-value of 0.00. This statistical test produces $p < 0.05$, meaning the difference is significant. Thus, it can be concluded that there was an increase in knowledge about toddler nutrition in the control group.

Observations obtained during the research were that before the intervention, many respondents still had poor results in terms of nutritional knowledge. However, after intervention, whether through online nutritional support or simply distributing brochures, the level of nutritional knowledge changed. Respondents were very enthusiastic and actively listened, asked questions to the researcher during the tutorial session. Because the time used in this assistance is unrelated and is adjusted to the respondent's free time. This makes respondents interested and learn more deeply about the material and the problems they face. Through interviews with local health workers, respondents obtained basic information about nutrition and stunting without mentioning the benefits of

### Table 1. Difference Test Results between Control Group Pretest and Posttest Scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>Difference (Posttest - Pretest)</th>
<th>p</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutritional Knowledge of Mothers of Stunting Toddler</td>
<td>10 (0 - 20)</td>
<td>0.00</td>
<td>Significant difference</td>
</tr>
</tbody>
</table>

Source: Primary Data February-March 2023

Based on the table above, it is known that the difference (posttest - pretest) in knowledge scores has a median of 10, meaning there has been an increase. The statistical test of this difference produces $p < 0.05$, meaning that the difference is significant. Thus, it can be concluded that there has been an increase in knowledge about toddler nutrition in the control group.

### Table 2. Difference Test Results between Pretest and Posttest Scores for Treatment Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Difference (Posttest - Pretest)</th>
<th>p</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutritional Knowledge of Mothers of Stunting Toddler</td>
<td>20 (10 – 30)</td>
<td>0.00</td>
<td>Very Significant difference</td>
</tr>
</tbody>
</table>

Source: Primary Data February-March 2023

The table 2 shows the results of the difference test between the pretest scores and the posttest scores for the five experimental variables in the treatment group. Based on the table above, it is known that the difference (posttest - pretest) in knowledge scores has a median of 20, meaning there has been an increase. The statistical test of this difference produces $p < 0.05$, meaning that the difference is significant. Thus, it can be concluded that there was an increase in knowledge about toddler nutrition in the treatment group.

To find out whether online nutritional assistance using leaflets as an intermediary has an effect on increasing knowledge about toddler nutrition and nutritional consumption, a difference test (posttest - pretest) of the five experimental results between the treatment group and the control group was carried out. Tests for differences in knowledge were carried out using the Mann-Whitney test, while tests for differences in nutritional consumption were all carried out using the independent samples t test. Below are the complete test results.
nutritional content (energy, protein, fat and carbohydrates), the type of food that should be given according to age and how to overcome it. General failure to thrive in the short and long term. This online nutritional support uses intermediaries in the form of online media, especially the WhatsApp application, which is the most widely used application in Indonesia in terms of communication.

This makes it easier for resource persons to absorb information during the mentoring process without having to meet face to face. The results of this research are in line with previous research by Hikmiyah et al. (2019) that there is a significant difference in knowledge and energy consumption before and after providing online assistance using e-booklet, video, or e-booklet and video media, and the highest average increase in knowledge and energy consumption is in the e-booklet and video media group.

Nutrition assistance within this network is carried out to increase knowledge. So it is very relevant to research based on online education and online education. However, what is different is that it is carried out within a certain time period and has its own stages. Many studies support the existence of a significant effect. As research conducted by (Yuliani et al., 2021) showed that online maternal and neonatal COVID-19 prevention health education can influence the knowledge and behavior of pregnant women.

Based on research from Setiani et al. (2022), online health education is effective in increasing stunting prevention behavior. Thus, this research has a significant influence on the variable level of nutritional knowledge of mothers of stunted toddlers. According to the results of this study, it shows the importance of online nutritional assistance. Through nutritional assistance activities, cadres or families provide support and services for families so they can prevent and overcome nutritional problems in their family members.

Assistance is carried out by providing attention, conveying messages, encouraging, inviting, providing ideas/solutions, providing services/assistance, providing advice, referring, mobilizing and collaborating. This activity aims to reduce the number of malnutrition and malnutrition, through efforts to empower families and communities, especially families who have nutritional problems in mothers and children (Simbolon et al., 2019). Research by Naulia et al. (2021) stated that delivering education online can also increase public knowledge in preventing stunting, including mothers of stunted toddlers.

One of the online media used in this research is the WhatsApp application. Which, can be seen in research conducted by Kadek et al. (2022) stated that education through the online media Whatapp can increase knowledge in the treatment group. With similar research, the results of this research are stronger and can be considered for further implementation as an option in implementing nutritional assistance which is usually in person, if there are obstacles it can be done online.

Online education has been proven to be effective in increasing public knowledge and attitudes in preventing stunting. Providing education through posters directly or through media that can be accessed online/virtually can increase public knowledge and attitudes towards preventing stunting (Hendrawati et al. 2023). There is an influence of online education on increasing the knowledge and attitudes of pregnant women. Then, there is a difference between the group that was given online education and the education group using printed media (leaflets) in increasing knowledge, insight and attitudes of pregnant women towards maternal and neonatal services during the pandemic in Sleman Regency (Issabella et al., 2021).

The use of online communication media in education should consider media capabilities, internet networks, and access costs so that the objectives are achieved optimally. There is a need for further research on the use of online communication media in stages so that it can influence changes in nutritional attitudes and behavior, but overall it can have an effect on knowledge (Azizah et al., 2021). This is reinforced by more effective results if online nutritional assistance is provided using leaflet media than if online assistance is not provided in increasing maternal nutritional knowledge.

**Conclusion**

There is an effect in increasing the nutritional knowledge of stunted mothers of toddlers after receiving online nutritional assistance treatment via leaflets compared to those who only received leaflets without online nutritional assistance treatment.

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**Author Contribution**

Conceptualization, A.R.N.F.; methodology, A.R.N.F.; validation, S. and A.L.; formal analysis, A.R.N.F.; investigation, A.R.N.F.; resources, A.R.N.F.; data curation, A.R.N.F.; writing—original draft preparation, A.R.N.F.; writing—review and editing, A.R.N.F., S. and A.L.; visualization, A.R.N.F. Supervisor: S. and A.L. All authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest
The authors declare that there is no conflict of interest regarding the publication of this paper.

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