Strengthening emotional intelligence intervention on behavior changes of mothers in stunting prevention

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**ABSTRACT**

This study aimed to determine the effect of applying Emotional intelligence reinforcement to changes in stunting prevention behavior at the Kedung 2 Health Center, Jepara. This study employed a cross-sectional approach and data from participants at the Kedung 2 Public Health Center in Jepara. Public Health Center, Jepara. Participants were taken by purposive sampling according to predetermined maternal criteria, and 82 participants were obtained. Quasi-experimental research methods with two groups of emotional intelligence strengthening design, pre-intervention and post-intervention. Data collection used a questionnaire to measure the emotional intelligence of respondents and stunting prevention behavior. The data were then analyzed using the SPSS program. The correlation value shows that there is a strong relationship between the strengthening of emotional intelligence interventions and changes in maternal stunting prevention behavior, with a correlation value of 0.905 and a significance value of less than 0.001. The results of the T-test also showed significant behavioral changes in stunting prevention behavior before and after the application of strengthening emotional intelligence, with a significance value of 0.008. Strengthening emotional intelligence has a strong positive correlation with stunting prevention behavior, and the results of the T-test show that there is a significant effect on the results of stunting prevention behavior between before and after strengthening emotional intelligence. As a result, strengthening maternal emotional intelligence should be a priority to prevent stunting.

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**1. INTRODUCTION**

The high proportion of long-term malnutrition in children persists worldwide [1], with the incidence reaching 22.3% or 148.1 million children [2], and it is a public health issue that must be addressed carefully and consistently [3]. Epidemiological research has shown several risk factors for stunting. Eighteen risk factors account for 137 developing nations' stunting cases among children between the ages of 24 and 35 months [4].

Reduced child stunting is one of the six Global Nutrition Goals for 2025 objectives and a significant indication of the achievement of the second sustainable development goals (SDGs), "Zero Hunger." For the previous ten years, Indonesia has maintained a high frequency of child stunting, which currently stands at about...
37% nationwide [5], [6]. Stunting is closely related to chronic malnutrition; that is, due to inadequate nutritional intake associated with food insecurity, low-quality diet, and sub-optimal infant feeding, the first two years of life are given less attention [7]. Child stunting is often associated with communal and socioeconomic problems, including lack of access to health care and living in rural areas. Factors contributing to stunting in children in Indonesia include non-exclusive breastfeeding for the first six months, the low socioeconomic position of the household, early delivery, short birth length, and low mother's height and education. Children living in homes with un repaired toilets and un clean water are also more at risk [4], [6].

When it comes to both interpersonal and intrapersonal interactions, emotional intelligence refers to the capacity to control one's emotions and interact with others. Research demonstrates that emotional intelligence is more crucial to a person's success and happiness than cognitive intelligence [8]. Mother's melancholy and anxiety are associated with her emotional intelligence [9]. The body's immune system and stress hormones are also directly tied to this emotional intelligence [10], [11]. Through educational initiatives and counseling, emotional intelligence may be enhanced. These lessons may be included in maternal education initiatives to assist mothers in building their emotional intelligence [8]. Stunting must be less prevalent by changing the focus of treatments from those that solely benefit children and newborns to those that benefit mothers and families by enhancing their nutrition and living conditions [4]. If a pregnant lady has strong emotional intelligence, she will start planning early for the well-being of her cherished child so that the first 1,000 days of the child's existence will be taken into account [10].

Stunting is among the SDGs' goals: to end hunger and all kinds of malnutrition by 2025 and achieve food security. The goal is to cut the rate of stunting by 40% by 2025. Recognizing stunting is one of the strategic issues for the development of the Jepara Regency Region 2021, where parents' knowledge of effective parenting, environmental health, and their capacity to provide adequate nutrition are still low, leaving the prevalence of stunting high at 25% when the target is less than 20%. Thus, to help raise the level of public health, Village Health Center cadres and health professionals are required. In order to raise awareness of the significance of dietary intake during the first 1,000 days of life, which affects how well their children grow and develop [12], Cadres Jamilah (care for pregnant women by issues) is the long arm of the Village Health Center. This will help people prevent stunting. The study aims to determine the effect of applying Emotional intelligence reinforcement on behavior changes of mothers in stunting prevention at the Kedung 2 Health Center, Jepara.

2. METHOD
2.1. Participants

This research was conducted from August to November 2022. The design of this study used a quasi-experiment research using information from participants at the Kedung 2 Public Health Center, Jepara. Participants were collected purposively with inclusion criteria: pregnant women and mothers with babies under two years who were 25-35 years old, could understand the questions well, could fill in the answers, and were willing to participate in EI-strengthening activities. Meanwhile, the exclusion criteria are mothers who are unhealthy and cannot take part in study activities. There are 82 people who have expressed their willingness to participate. The number of participants was greater than that determined using the safest population proportion (P 50%) because P is unknown, with an estimate of 10% points from the correct proportion with a 90% confidence level [13].

2.2. Procedure

Measurement of stunting prevention behavior by participants was carried out pre- and post-intervention using a questionnaire. Pre-intervention is the behavior of stunting preventing before strengthening emotional intelligence, and post-intervention is the behavior of stunting preventing after strengthening emotional intelligence. Each participant has been asked for consent to participate in this study through a consent form as a participant. The selected participants were first measured for their stunting after strengthening EI-strengthening activities. Meanwhile, the exclusion criteria are mothers who are unhealthy and cannot take part in study activities. The questionnaire consists of 18 questions related to participant's activities associated with stunting, with four rating scales. The content of the questions includes food consumption activities, preventing and treating diseases in children, environmental cleanliness, and providing nutrition for children. The questionnaire shows the validity of the Pearson correlation [14] (sig. (2-tailed) ranges is 0.027 to<0.01), and the reliability with Cronbach's alpha [14] is 0.864. Furthermore, carry out interventions to strengthen emotional intelligence through motivational programs. Participants then attended a training session; in this case, Dr. Rita Kartika Sari, S.K.M is a motivation practitioner. The elements of emotional intelligence provided include interpersonal, self-perception, intrapersonal, adaptation, decision-making, self-expression, attitude, and stress management [15], [16]. The intervention was carried out for 45 minutes and continued with a break. After passing a 25-minute rest period, participants were given another questionnaire and analyzed changes in their behavior after receiving stunting prevention behavior reinforcement.
2.3. Data analyses and ethical clearance

The data obtained was then analyzed using the SPSS program. Values are presented as mean and standard deviation. The data was then tested to assess the correlation and average difference in stunting prevention behavior before and after strengthening emotional intelligence with a 95% confidence interval. This clinical study obtained Ethical Clearance approval from the Ethics Commission with the number 087/KEP-UNISM/VI/2021.

3. RESULTS AND DISCUSSION

A total of 82 samples were analyzed for correlation and paired T-test, and then data was obtained as in Table 1. It appears that there is a powerful positive correlation between changes in stunting prevention behavior before and after the application of strengthening emotional intelligence, with a correlation value of 0.905. This link appears to be statistically significant, which means that it is unlikely to have happened by coincidence, given the significance value of less than 0.001. Therefore, it can be concluded that there is a strong relationship between changes in stunting prevention behavior and the application of emotional intelligence training. The t-test result in a significance value of 0.008 indicates that the difference in stunting prevention behavior before and after applying emotional intelligence intervention is statistically significant. In other words, changes in behavior observed after the training are not likely due to chance or random variation.

Table 1. Result of correlation and paired T-test on stunting prevention behavior

<table>
<thead>
<tr>
<th>Description value</th>
<th>Mean</th>
<th>N</th>
<th>St. Dev.</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-</td>
<td>64.79</td>
<td>82</td>
<td>11.48</td>
<td>1.268</td>
</tr>
<tr>
<td>Post-</td>
<td>66.5</td>
<td>82</td>
<td>13.267</td>
<td>1.465</td>
</tr>
<tr>
<td>Paired samples correlation</td>
<td>N Correlation</td>
<td>Sig.</td>
<td>82</td>
<td>0.905</td>
</tr>
<tr>
<td>Paired T-Test</td>
<td>Mean</td>
<td>St. Dev.</td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>Pre- &amp; Post-</td>
<td>627</td>
<td>5.668</td>
<td>625</td>
<td>-2.95</td>
</tr>
</tbody>
</table>

In toddlers under the age of five, stunting, or low regard for personal development (height-for-age-Z score 2), is a failure to thrive that is brought on by persistent malnutrition and sickness in the first 1,000 days. Stunting is an under-five-year-failure for olds to flourish (toddlers) [17]–[19]. Stunting is linked to several long-term repercussions, such as poor cognitive development and increased rates of illness and death, even if the incidence progressively falls globally. As a result, stunting is a significant cause of poverty [20].

The way people react to childbirth depends on their emotional intelligence in terms of the value of the dyadic point of view in understanding the experience of childbirth, especially parents' acceptance of changes in their partner's emotional level [21]. Postpartum mental illness and emotional intelligence correlate significantly and negatively [22], as well as child malnutrition which is highly related to the mother's education [23]. Stunting in children can also be brought on by mothers' depression [24]. Cultural communication approaches are successful in altering mothers' behavior and reducing child stunting [18]. For this reason, the emotional intelligence of pregnant women must be increased [25]. The study highlights that preventing stunting requires changes in dietary behavior, especially for pregnant women. This includes consuming iron and folic acid to prevent anemia, increasing iodine intake, and raising awareness about immunization. These changes in dietary patterns were observed among several respondents. When EI is high, one will be more involved and successful in all aspects [26]. EI will also have a direct or indirect impact on children's mental health [27]: emotionally unstable parents tend to project their problems onto their children [28]. Compared to fathers, mothers have a bigger role in children's development because they tend to be emotionally close to their children [29]. Mothers who have strong emotional intelligence are more effective in their roles as mothers [8].

A strong positive correlation between changes in stunting prevention behavior with pre- and post-implementation of strengthening emotional intelligence was shown in this study, indicating that when the strengthening of emotional intelligence increases, the stunting prevention behavior also increases. Emotional intelligence is the consequence of the interplay between emotions and intelligence, and it is directly tied to the capacity for self-awareness, the ability to discriminate between one's own and other people's feelings, and the capacity for practical application of this information [19]. In many situations, emotional intelligence may
significantly affect behavior. Emotional intelligence is the ability to recognize, understand, and manage one's emotions and those of others. Emotional intelligence includes consciousness, drive, personality, compassion, and social abilities [10]. Social skills, empathy, self-concept, and behavior change are part of psychological and educational characteristics that may be developed and evaluated using psycho-educational techniques, such as the application of emotional intelligence [30]. People with high emotional intelligence typically display behaviors that are more constructive, useful, and suitable in social situations [31], resulting in their children's stunting being avoided from an early age. Stunting prevention knowledge is provided to expectant mothers and their families from an early gestational age through education [32], [33], it was proven by research in Kutelintang Village, Gayo Lues, that 70.1% of stunting cases came from mothers who had sufficient stunting prevention behavior (60%) and insufficient knowledge (40%) and showed that there was a strong relationship between maternal behavior, knowledge, in stunting incidents [34].

The T-test also revealed significant behavioral modifications in stunting prevention between pre- and post-emotional intelligence intervention, with a significance value of 0.008. Some evidence suggests that emotional intelligence interventions can play a role in stunting prevention. Mothers with high levels of emotional intelligence are more likely to succeed in their mothering roles. To create generations who are both emotionally and physically healthy, it is crucial that moms have strong emotional intelligence [8]. The mothers’ mean score for emotional intelligence was influenced by their age, education level, perceived financial position, and whether or not they expected to become pregnant [35]. EI may be enhanced by training [36]. Programs for maternal education might include training materials that can help mothers enhance their emotional intelligence [8]. Good mother conduct and excellent maternal education improve the likelihood that children will not experience stunting [37]. The findings suggest that emotional intelligence may be a crucial factor in stress management and mental health from the health promotion standpoint [38].

There are several limitations in this research. Firstly, participants were clustered only based on pregnant women or those with children under two years old. Other aspects could be follower factors in behavior change. This can be an important aspect for future researchers to be able to group various variables that influence changes in maternal behavior. Another limitation of this research is that the participants only involved one community health centre, while the social characteristics of the community can vary in different areas. Therefore, future research is expected to involve regional participation from various regions with diverse characteristics. Paying attention to the positive implications of strengthening EI for mothers in preventing stunting shown by this research, efforts to reduce stunting should not only focus on handling cases but also on preventive measures, one of which can be implemented through educational programs to strengthen EI.

4. CONCLUSION

Strengthening emotional intelligence has a strong positive correlation with stunting prevention behavior, and the results of the T-test show a significant effect on the results of stunting prevention behavior between before and after strengthening emotional intelligence. This evidence can be used as a basis for creating policies to prevent stunting, which may involve activities that strengthen parents' EI so that awareness is raised to pay attention to children's growth and development by adopting a healthy lifestyle and reducing the factors that cause stunting. Furthermore, the results of this research illustrate that community development, especially health, is not only carried out through physical or material efforts, but can involve mental development. So that a person can control himself and choose the best solution to the life obstacles that confront him.

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REFERENCES


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