



Original Article

## Family center maternity care education for pregnant women through the approachin efforts to prevent stunting: a quasi-experimental

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### ABSTRACT

**Background:** Stunting in children is a health problem that has a great influence on their physical and mental development. In Indonesia, one of the causes of high stunting rates is the low health awareness of pregnant women, especially those who marry at a young age. Family factors have a significant influence on the success of stunting prevention, but family-based approaches are still rarely applied in pregnant women's health education programs.

**Purpose:** This study aims to develop and evaluate the effectiveness of the Family Centered Maternity Care (FCMC)-based education approach in increasing knowledge and efforts to prevent stunting in pregnant women in Kolongan, North Minahasa.

**Methods:** This study uses a quasi-experimental design with a pretest-posttest approach. The research sample consisted of 20 pregnant women who met the inclusion criteria. Data were collected through stunting knowledge questionnaires and stunting prevention efforts questionnaires, which were measured before and after FCMC interventions. Data analysis was carried out using the Wilcoxon test with a significance value of  $p < 0.05$ .

**Results:** The results of the study showed a significant increase in the level of knowledge and stunting prevention efforts among pregnant women after being given FCMC-based educational interventions. Before the intervention, only 25% of participants had high knowledge about stunting, but after that it increased to 75%. Stunting prevention efforts have also increased from 40% to 80%. The Wilcoxon test showed that this change was statistically significant ( $p = 0.033$ ).

**Conclusion:** The FCMC-based education approach has proven to be effective in increasing knowledge and efforts to prevent stunting in pregnant women. This education can be a reliable method in increasing awareness and preventive measures of pregnant women against the risk of stunting in their children.

### INTRODUCTION

High-risk pregnancies can cause the pregnant mother or baby to become ill or die before birth.<sup>1</sup> A WHO study in Indonesia stated that the rise of early marriage is one cause of stunting in the country.<sup>2</sup> A marriage that occurs when the child is not yet mature enough to get married and live a married life.<sup>3</sup> In 2020, cases of early marriage in Indonesia increased threefold compared to 2019. In 2021, the number of early marriages decreased until 2022. However, the number of early marriages in 2022 was still high, namely 50,747 cases.<sup>4</sup> Marriage at an early age is a serious problem because it can have impacts from various aspects, such as impacts on health, impacts on psychology, and impacts on socio-economics.<sup>5</sup> Apart from that, marriage at an early age is one of the variables that causes stunting.<sup>6</sup>

Stunting cases in Indonesia occur 43.5% in children under three years with mothers aged 14-15 years, while 22.4% occur in those aged 16-17 years. Early marriage is one of the causes of low health awareness among pregnant women.<sup>7</sup> Providing health education can increase a person's knowledge and health behaviour so that awareness will arise in individuals or society to behave by the knowledge they have.<sup>8</sup> Based Justification to conduct research on family-centered maternity education for stunting prevention is very important, especially because this approach is still rarely explored in previous studies. Most research on stunting prevention focuses more on individual nutrition and maternal health interventions. In fact, stunting is not only affected by the physical health condition of the mother, but also the condition of the famil and the support that exists around pregnant women and children.<sup>9</sup>

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Family-centered education can provide all family members with a comprehensive understanding of the importance of maternal and child health and the steps they can take together to prevent stunting. Some previous studies may have touched on mother-related education and interventions, but most of them were conducted individually and did not involve the family as an integrated unit. The shortcoming of previous studies is the lack of a holistic approach that involves the whole family as agents of change in improving children's nutritional status and health. This becomes less effective, especially in the long term, because it does not involve parties who play an important role in supporting the mother, such as the husband and other family members.<sup>10</sup>

The novelty of this study is related to family-based education for pregnant women through the family center maternity care (FCMC) approach to prevent stunting.<sup>11</sup> FCMC activities can motivate pregnant women to maintain their health because they receive full support and involvement from the entire family.<sup>12</sup> Thus, through the FCMC approach, families can motivate pregnant women to maintain their health during pregnancy, which has a positive impact, namely that pregnant women will feel comfortable, safe, peaceful, and confident. Therefore, this study aims to develop and evaluate the effectiveness of family-centered maternity education in preventing stunting. This approach is expected to increase the understanding, concern, and involvement of all family members in supporting maternal and child health since pregnancy so that the risk of stunting can be suppressed more effectively.

## METHOD

### *Study Design*

This is a quasi-experimental with a pre-post test design.<sup>12</sup>

### *Setting and Respondent*

This research was conducted at the Kolongan North Minahasa Health Center. The population in this study was pregnant women; the sample was 20 pregnant women. This study applies several inclusion and exclusion criteria to ensure the results' accuracy and the sample's suitability. The inclusion criteria include pregnant women who are in the second or third trimester, live in the research area, are willing to participate by signing written consent, and have good communication skills. Meanwhile, exclusion criteria included pregnant women with serious health complications, plans to change domicile during the study, history of chronic diseases that could affect pregnancy, and inability to complete all stages of the study. With this criterion, the study aims to obtain valid data on the effectiveness of FCMC-based education in stunting prevention. The sampling technique used was simple random sampling.

### *The Variable, Instrument, and Measurement*

The variables in this study are Independent Variable: FCMC and Dependent Variable: The level of knowledge of pregnant women about stunting and stunting prevention

efforts. The instruments in this study use knowledge questionnaire on stunting: This questionnaire is designed to measure the level of knowledge of pregnant women about stunting, including an understanding of the causes, impacts, and measures to prevent stunting. stunting prevention efforts questionnaire: This questionnaire contains items that measure the behavior or actions taken by pregnant women in an effort to prevent stunting, such as maintaining nutritional intake, conducting routine pregnancy checks, and paying attention to diet.

Data was collected by means of pre-test and post-test methods Before being given knowledge, the participants filled out a questionnaire (pre-test) to find out the level of initial knowledge and stunting prevention behavior. After the education session was over, participants filled out the same questionnaire (post-test) again to evaluate the changes that occurred in terms of stunting prevention knowledge and behavior. Data was also collected through an Observational and Interview Approach by collecting additional data on participants' responses to FCMC education and its impact on their daily behavior related to stunting prevention.

### *Experimental Procedure*

This study uses a quasi-experimental design with a pre-test and post-test approach to evaluate the effectiveness of stunting prevention education based on FCMC. The experimental procedure began with the implementation of a pre-test to measure the level of knowledge and behaviour of stunting prevention in pregnant women. Furthermore, FCMC educational interventions are provided in several sessions involving family members, including husbands or close relatives, with the aim of providing an in-depth understanding of stunting, its risk factors, and how to prevent it. Education is carried out directly and interactively, using visual media such as posters and pamphlets, as well as discussion methods to improve understanding.

After all education sessions are completed, post-tests are carried out to assess changes in knowledge and stunting prevention efforts. Pre-test and post-test data were then analyzed using the Wilcoxon test to determine the significance of the changes that occurred after the educational intervention. The results showed a significant increase in stunting prevention knowledge and behaviour among pregnant women, proving the effectiveness of the FCMC approach in increasing family involvement and awareness of maternal and child health.

### *Data Analysis*

For this study, the univariate analysis uses a frequency distribution formula, while the bivariate analysis uses the Wilcoxon analysis test with a significance value of less than 0.05. Next, draw and verify conclusions.

### *Ethical Consideration*

This research obtained research ethics permission from Research Ethics Committee at Muhammadiyah University Manado, number: No. 198/EC/KEPK-KANDOU/XI/2024.

## RESULTS

Based on the demographic data, the results of this study (Table 1) show that 55% are over 20 years old. The age of pregnant women is an essential factor in preventing stunting because younger mothers tend to need more education about the risks and prevention of stunting in their children. Based on the last level of education, the average pregnant woman has a junior high school education (55%). The mother's education level greatly influences the mother's ability to understand and apply the information provided in the education program. Mothers with higher education are expected to find it easier to understand the educational material provided so that they are more effective in implementing stunting prevention efforts.

**Table 1.** Characteristics of Responden (n=20)

| Charateristic         | Result   |
|-----------------------|----------|
| <b>Age</b>            |          |
| >20 year              | 11 (55%) |
| ≥35 year              | 9 (45%)  |
| <b>Last Education</b> |          |
| Junior High School    | 2 (10%)  |
| Senior High School    | 11 (55%) |
| S1                    | 7 (35%)  |

The results showed a significant increase in the level of knowledge and efforts to prevent stunting in pregnant women after being given FCMC-based education ( $p < 0.05$ ). This finding strengthens the effectiveness of the FCMC approach in increasing knowledge and efforts to prevent stunting (Table 2).

**Table 2.** Knowledge and Stunting prevention efforts

| Variable                           | Pre-Test | Post-Test | p-value |
|------------------------------------|----------|-----------|---------|
| <b>Knowledge about Stunting</b>    |          |           |         |
| High                               | 5 (25%)  | 15 (75%)  | 0.033   |
| Medium                             | 10 (50%) | 4 (20%)   |         |
| Low                                | 5 (25%)  | 1 (5%)    |         |
| <b>Stunting prevention efforts</b> |          |           |         |
| High                               | 8 (40%)  | 16 (80%)  | 0.033   |
| Medium                             | 12 (60%) | 4 (20%)   |         |
| Low                                | 0 (0%)   | 0 (0%)    |         |

## DISCUSSION

Based on the results of statistical tests, it can be concluded that educational support through the FCMC approach has been proven to increase efforts to prevent stunting in pregnant women. This shows that education using the FCMC approach plays a vital role in efforts to prevent stunting in pregnant women. This is because the FCMC approach is a method that can be used to provide comprehensive information regarding nutrition and health during pregnancy. This method uses home visits with a family approach and includes education on the importance of social support in motivating pregnant women using lectures, question and answer, and practice methods.<sup>13</sup> The impact of increasing understanding of pregnant women is to have optimal competence for pregnant women. This will

contribute to optimizing the health status of babies born, thereby reducing stunting rates.<sup>14</sup>

This study is in line with previous studies that underline the significant impact of mentoring on the knowledge, attitudes, and actions of pregnant women in preventing stunting.<sup>15,16</sup>

This is in line with evidence showing the important role of education, counseling, and support in promoting positive behaviors related to stunting prevention since pregnancy.<sup>17</sup> Mentoring for pregnant women can encourage positive changes in maternal attitudes and behaviors towards stunting prevention. Research shows that nutrition education improves practices and knowledge regarding appropriate complementary foods.<sup>18,19</sup>

This nutrition education intervention can be implemented as a stunting prevention and control intervention, as a community empowerment approach whose technical operation is by providing balanced nutrition education and counseling to pregnant women to increase knowledge and understanding in providing nutrition and parenting to their children.<sup>20</sup> This intervention can be carried out effectively through public health workers with educational methods that are easy to understand, considering that the majority of pregnant women have different or low educational and socio-economic levels, so their literacy level may be an obstacle in accessing nutrition information. Especially in rural areas.<sup>21</sup>

The FCMC-based education approach has great potential to increase knowledge and behaviour of stunting prevention in pregnant women. This approach places the family as the central unit in pregnancy support to provide comprehensive education and understanding not only to pregnant women but also to all family members. Previous research has shown that strong family support can influence mothers' attitudes and behaviours in maintaining their health and fetuses.<sup>22</sup> By involving families in health education, pregnant women can feel more supported and more motivated to implement the recommended practices in stunting prevention.

The FCMC education process is focused on increasing awareness and involvement of families in understanding the importance of proper nutrition and care during pregnancy. The education provided includes an understanding of appropriate nutritional intake, the importance of regular pregnancy checkups, and ways to prevent stunting that can be done from pregnancy. This FCMC approach allows family members, such as husbands or parents, to take an active role in supporting pregnant women by providing nutritional needs and facilitating access to health services. A previous study shows that husband's involvement in pregnancy education can increase the likelihood of pregnant women following health advice, which ultimately reduces the risk of stunting in children born.<sup>23</sup>

In addition, the FCMC approach provides a space for families to understand firsthand the impact of malnutrition

on fetal growth so that they can play an active role in prevention. The education provided by this method is more sustainable because there is direct interaction and support from the family, which not only makes mothers feel supported but also strengthens family knowledge about the importance of stunting prevention. The interventions involving families are more effective than individual approaches because they provide consistent and continuous support. Thus, FCMC-based education is expected to increase the effectiveness of stunting prevention efforts through a process that involves families as the primary support in the application of stunting prevention knowledge and behaviours.<sup>24, 25</sup>

## CONCLUSIONS AND RECOMMENDATION

This study shows that family-centered maternity care education for pregnant women effectively improves their understanding of nutrition and health practices, which are critical in preventing stunting. The program improved knowledge and strengthened family involvement in supporting pregnant women, which enhanced fetal and infant health outcomes. The findings suggest that an integrated approach involving pregnant women and their families plays a critical role in preventing stunting and promoting better health during pregnancy.

It is recommended to expand the implementation of this education program to areas with high stunting rates to ensure that more pregnant women and their families benefit from it. In addition, increasing the involvement of husbands and other family members in the education process will further enhance the support system for pregnant women. Integration of this program into the public health system should be prioritized to ensure its sustainability and broad impact. Further research is also needed to assess the long-term effects of this education on child growth and development, which provides insight into its potential to reduce stunting rates over time.

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