ANALYSIS 4-TOO (4T) EDUCATION ON THE KNOWLEDGE OF MOTHERS FROM FAMILIES AT RISK OF *STUNTING* IN PREVENTING *STUNTING*

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Abstract *Stunting* is a form of impaired growth and development of children due to chronic malnutrition which will persist in at-risk families. Ideally, *stunting* can be prevented as early as possible in the first 1000 days of birth, therefor preparation for pregnancy is an indicator that must be of primary concern, especially avoiding the 4-Too (4T) in pregnancy, namely too young during pregnancy, too old during pregnancy, too close a pregnancy distance, and frequency of childbirth. too often ≥3 times. This study aims to analyze the 4-Too Education (4T) on the knowledge of mothers from families at risk of stunting in preventing stunting. This research used an experimental method with a treatment group that received 4T Education. Respondents in this research were mothers from families at risk of *stunting* who had toddlers aged 0-60 months in Ekang Anculai Village, Bintan Regency. The design of this research was pre-experimental with a one group pre test-post test design and involved 10 respondents. The results of the analysis showed a significant increase in maternal knowledge after receiving 4-Too (4T) Education (p<0.05). This education is effective in increasing mothers' understanding of the crucial factors that contribute to *stunting* in toddlers related to 4-Too. These findings provide strong support for the role of education as a *stunting* prevention strategy and are the basis for establishing good behavior that supports optimal growth and development of toddlers.

Keywords: 4-Too (4T) Education; Families at Risk; *Stunting*

INTRODUCTION

Stunting is a condition where the body is very short, seen from the WHO-MGRS (Multicentre Growth Reference Study) standard which refers to growth problems that occur when one of the linear growth indicators, such as body length according to age or height at age certain, does not reach the specified standards. In general, *stunting* not only affects children's physical growth, but can also impact cognitive function.

Stunting has become one of the health issues that has been handled seriously by the government of the Republic of Indonesia since 2018. Based on data from the 2022 Indonesian Nutrition Status Survey (INSS) 2022 (Supariasa & Purwaningsih, 2019) The prevalence of stunting in Indonesia is 21.6%. The prevalence number has decreased from the previous year of 2.8%, but this figure is still far from the National Medium Term Development Plan (NMTDP) for 2024 of 14%. Data obtained from SSGI 2022 (Kemenkes, 2022), the prevalence of stunted toddlers in the Riau Islands Province is 15.4%. The Riau Islands have seven districts/cities with the highest prevalence of stunting, namely in Lingga Regency 18.9%, Natuna Regency 18.0%, and Bintan Regency 17.8%.

The causes of *stunting* in toddlers are divided into direct causes and indirect causes based on the Buku Saku Audit Kasus *Stunting* (2022). Direct causes consist of chronic lack of nutritional intake, the occurrence of infectious diseases resulting in metabolic disorders and increased nutritional requirements. Chronic lack of nutritional intake is the biggest contributing factor to *stunting* in toddlers. Low nutritional intake in toddlers is caused by

families not being able to provide a variety of foods, large families, namely more than 5 members, and not consuming foods of animal origin (Fufa, 2022). Inadequate intake results from low food quality, inappropriate feeding practices, and poor food safety (Beal et al., 2018). Apart from the direct causes of *stunting*, there are also indirect causes.

Indirect causes consist of mothers of toddlers who have poor nutritional status before and during pregnancy, maternal age, parity, pregnancy spacing, lack of knowledge, economic factors, and environmental sanitation of toddlers (Directorate of Family Development, 2022; BKKBN, 2022). The results of the analysis of the 2022 Family Data Collection Update (FDCU-22) showed that the dominant factors for families at risk of *stunting* were too many (3 children), too old (wife aged 35-40 years) and the family not having a proper toilet. Next are the research results Juniarti, (2022) regarding the 4T analysis with the incidence of *stunting*, it shows that maternal age, pregnancy interval, and parity have a significant relationship with the incidence of *stunting*. Research result Anwar et al., (2022)causes of *stunting* include premature birth, environmental factors, Clean and Healthy Living Behavior (CHLB), smoking habits of one family member, healthy eating patterns, diarrhea, birth spacing, family understanding and attitude in providing healthy nutrition.

In Indonesia, the Badan Kependudukan dan Keluarga Berencana Nasional (BKKBN) has an important role in tackling *stunting* in the form of prevention efforts carried out with a national action plan through three approaches, namely an integrated nutrition intervention approach, a multisectoral and multistakeholder approach, and a family-based approach to *stunting* risk.

Seeing the urgency of *stunting* cases in Indonesia, this research specifically seeks a 4-Too (4T) Education approach regarding being Too old during pregnancy (age > 35 years); Being too young when pregnant (<20 years); Too close a pregnancy distance (the distance between the current pregnancy and the previous pregnancy is <2 years); and Too frequent births (frequency of giving birth >2 times) based on family risk of *stunting*, namely families that have teenage girls, prospective brides, pregnant women, postpartum mothers (interval period) as well as families that have babies under 2 years of age (under 2 years old) and infants under 5 years of age (toddlers), come from poor families, have low education, and have poor environmental sanitation.

This approach is considered relevant, considering that one of the functions of the family is the function of health care or maintenance in maintaining the health of family members. Not only that, a family-based approach to *stunting* risk is also considered relevant in connecting directly to target groups, focusing on main factors, having a big impact, and supporting the acceleration of *stunting* reduction through an integrated, multi-sectoral and multi-stakeholder nutrition approach (BKKBN, 2022; Pramleonita, 2004). Therefore, this research aims to analyze 4-Too (4T) Education on the Knowledge of Mothers from Families at Risk of *Stunting* in Preventing *Stunting*.

METHOD

This type of research is pre-experimental with a one group pretest-posttest design. This research started from 26 September to 24 October 2023 and was carried out in Ekang Anculai Village, Teluk Sebong District, Bintan Regency. The population in this study were mothers from families at risk of *stunting* in Ekang Anculai Village, totaling 151 heads of families. Determination of the research sample was carried out using minimal sampling

using the Frederer Formula which was limited based on inclusion criteria and exclusion criteria. The sampling technique used in this research was probability sampling with a simple random sampling technique, so that a minimum sample size of 15 respondents was obtained. The instrument for this research is a questionnaire with the *Guttman Scale*. Next, it was analyzed statistically using SPSS software with the *Shapiro Wilk Test* and *Paired t-test*.

RESULTS AND DISCUSSION

This study reports the results of the Analysis 4-Too (4T) Educational of the Knowledge of Mothers from Families at Risk of *Stunting* in Preventing *Stunting*. This research aims to see how the knowledge of mothers from families at risk of *stunting* changes in preventing *stunting* after being given 4-Too Education (4T). Based on the results of the descriptive analysis, the average knowledge of mothers of families at risk of *stunting* pre and post giving 4-Too (4T) Education shows that the average mean pre-test education and post-test education has increased. The results of the paired t test produced a p-value for all variables <0.05. Thus, it can be concluded that there is a significant influence on the differences between pre and post education. The difference is in a positive direction.

Table 1: Average distribution of mothers' knowledge of families at risk of stunting
Based on Pre and Post 4-Too (4T) Education

Variable	Mean Pre	Mean Post	Information
Mother's Knowledge of 4-Too	10.46	13.33	Increase

By understanding the 4-Too (4T) Education material indicators which are said to be the direct causes of *stunting*, it can support a reduction in *stunting* because basically knowledge is the result of a person's understanding of an object (fact), which is seen or heard (five senses) and then processed. by the brain (reason) with the help of previously obtained information (information) and subsequently will change behavior. Individuals with adequate knowledge will be able to provide rational thinking and even create motivation within a person to carry out an activity (Fegita et al., 2022). This is justified based on Green's Theory (Notoatmodjo, 2012) regarding health behavior states that knowledge is one part of the predisposition that influences behavior change.

Based on literature studies related to 4-Too (4T) Education material, it is stated that all 4T indicators in pregnancy are related to the incidence of *stunting* in toddlers. Pregnancy at too young an age increases the risk of stunting in toddlers by 2.4 times and 2.73 times for mothers who become pregnant at too old an age when compared to mothers who experience pregnancy at a healthy reproductive age (20-35 years). Apart from that, *stunting* cases are also associated with the mother's parity status. It was found that the more often a woman experiences pregnancy (>4 times), the greater the risk of *stunting* in babies aged 6-12 months, 2,176 times. The incidence of *stunting* in Jayanti's research (2021) states that there is a relationship between the distance between pregnancies and the incidence of stunting (p=0.004) (Pusmaika et al., 2022; Sarman & Darmin, 2021).

CONCLUSION

Based on the analysis in this research, 4-Too (4T) Education descriptively shows the difference in the increase in maternal knowledge between the mean pre-education value and the mean post-education value. As a form of *stunting* prevention effort, this research

uses a family-based approach to *stunting* risk, because it is very relevant in connecting directly with the target group, focuses on the main factors, has a big impact, and supports the acceleration of *stunting* reduction so that it is effective and efficient. So it is hoped that the sustainability recommendations from this research can be optimized in the form of continuity in the implementation of 4-Too (4T) Education for mothers from families at risk of *stunting*.

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