ISSN 2548-6462 (online), ISSN 2088-8740 (print)

DOI: 10.30644/rik.v13i2.898

The Influence of the information motivation and behavioral skill (IMB) Model on enhancing stunting prevention motivation among mothers of children aged 0-59 months in Bontomanai Village in 2024

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Accepted: 22 October 2024; revision: 18 November 2024; published: 31 December 2024

Abstract

Background: Stunting is a nutritional problem in Jeneponto District, particularly in Bontomanai Village, with a prevalence of 31.35% in 2023. Key factors include a lack of maternal knowledge about nutrition, limited access to healthcare services, and poor sanitation. The Information-Motivation-Behavioral Skills (IMB) model can enhance awareness and practices by focusing on information, motivation, and skills. Targeted health education can empower parents to prioritize nutrition and breastfeeding, making a comprehensive approach essential for reducing stunting and improving child health outcomes. This study aims to determine the effect of the Information Motivation and Behavioral Skills (IMB) Model on increasing motivation for stunting prevention.

Method: This study is a quantitative research with a quasi-experimental approach using a pre-posttest with a control group design, conducted in Bontomanai Village with 74 respondents divided into two groups: intervention and control. Samples were selected using purposive sampling. The intervention group received treatment using the IMB model through lecture methods, while the control group did not receive any treatment. The research was conducted over a period of one month. Data were collected through questionnaires before and after the intervention and analyzed using SPSS with the Wilcoxon test to measure changes in motivation related to stunting prevention behaviors.

Results: The study shows that the IMB (Information-Motivation-Behavioral Skills) model has a significant impact on increasing motivation for stunting prevention in Bontomanai Village. In the intervention group, there was a significant increase in motivation from pretest to posttest with a P-value = 0.003, whereas in the control group, the increase in motivation was not significant with a P-value = 0.231. These results confirm the effectiveness of the IMB model in enhancing motivation in the group that received the intervention.

Conclusion: This study concludes that the IMB (Information-Motivation-Behavioral Skills) model significantly increases motivation for stunting prevention in Bontomanai Village, as evidenced by the significant statistical results in the intervention group. In contrast, there was no significant change in motivation in the control group, indicating that the IMB model is effective in boosting motivation compared to the group that did not receive the intervention.

Keywords: Stunting; IMB Model; Motivation.

INTRODUCTION

Stunting is one of the nutritional problems occurring in Indonesia. Stunting is a nutritional status based on the Height-for-Age (H/A) index with a threshold (Z-score) of less than -2 Standard Deviations (SD) (1). Stunting is a chronic malnutrition issue caused by prolonged inadequate nutritional intake due to improper feeding practices that do not meet nutritional needs. Stunting can begin during pregnancy and may only become evident when the child reaches the age of two (2). Stunting becomes a problem where growth failure is experienced by infants or children under five years old (3). Nutritional issues, particularly stunting in toddlers, can hinder the growth and development process. Short stature in toddlers has negative long-term impacts that will persist throughout life (4).

Stunting can also be caused by nutritional intake issues during pregnancy and early childhood, as well as a lack of maternal knowledge about health and nutrition before pregnancy and during the postpartum period, limited healthcare services such as antenatal and postnatal care, and insufficient access to food and adequate sanitation. During the First 1000 Days of Life (HPK), significant interventions are required due to the various contributing factors (5). If the risk factors causing stunting are not addressed, stunting rates will continue to rise (6). Addressing health issues requires significant costs, and if stunting increases, it is expected to place a greater burden on society and the government (7).

Nutritional problems in the population are still considered a major issue. In 2022, there were 148.1 million children under the age of 5 classified as stunted (8). In Asia, 87 million children experienced stunting, in Africa 59 million, and in Latin America and the Caribbean 6 million (9). Stunting occurs across almost all regions in Indonesia and social-economic groups (10). Presidential Regulation No. 72 of 2021 on the Acceleration of Stunting Reduction sets a national target to achieve a stunting prevalence rate of 14% by 2024. The national stunting prevalence in 2022 was 21.6% (11). The prevalence of stunting among toddlers in 2023, based on data from the South Sulawesi Provincial Health Office, was 27.2%. The stunting rate in Jeneponto Regency was 17.44%, while in Bontomanai Village, it was 31.35% (12). The stunting problem in Jeneponto Regency, particularly in Bontomanai Village, is caused by several factors, including a lack of understanding among the community, especially parents, about the importance of maternal nutrition during pregnancy, exclusive breastfeeding, complementary feeding (MP-ASI), maternal pregnancy history, and child-rearing practices.

The Information-Motivation-Behavioral Skills (IMB) model was first developed by Fisher in 1992 to predict HIV prevention behavior and is used to describe the role of three key behavioral determinants: information, motivation, and skills. The intermediary factor in this model is the skills determinant (intermediary variable) (13), (14). According to the IMB model, a person must have the correct information, strong motivation, and effective skills to practice healthy behaviors or avoid risky behaviors (15). This model can be applied in the context of stunting prevention behavior related to information, motivation, and behavioral skills. It has been proven that this model can enhance information, motivation, and prevention skills in risky behaviors across various countries (16).

Behavior is crucial in preventing stunting. According to the IMB model theory, a person's motivation can be influenced by information. A person can gain motivation through health education or counseling, and they can also be inspired by advice from others or close individuals, such as family and friends. Since motivation is one of the components that can influence behavior change, it is essential for initiating behavioral changes. Without motivation, behavioral change will not occur (17).

METHOD

The type of research used is quantitative with a quasi-experimental approach employing a pre-posttest with a control group design. This study was conducted in Bontomanai Village, Bangkala District, Jeneponto Regency, with a total of 74 respondents divided into two groups: intervention and control, each consisting of 37 participants. Sampling was conducted using purposive sampling methods based on the criteria of mothers with children aged 0-59 months; residing in Bontomanai Village; and being able to communicate effectively. The study began with administering a questionnaire (pretest) to both the intervention and control groups. Following this, the researcher provided treatment using the IMB model to the intervention group, while the control group did not receive any treatment. The IMB model was implemented through lectures, focusing on HIV/AIDS

prevention, which included information or knowledge, motivation, and behavioral skills. Subsequently, to assess changes in motivation regarding prevention behaviors among mothers of toddlers in Bontomanai, the same questionnaire (posttest) was administered. Data analysis in this study utilized SPSS, including a normality test. The hypothesis testing employed in this research was the Wilcoxon test.

RESULTS

Table 1. Distribution of Respondents Based on Characteristics in the Intervention and Control Groups in Bontomanai Village

Characteristic	Sample Group				Total	
	Intervention		Control			
	n	%	n	%	n	%
Age						
17-25 Year	8	21,6	7	18,9	15	20,3
26-35 Year	19	51,4	23	62,2	42	56,7
36-45 Year	6	16,2	5	13,5	11	14,9
46-55 Year	4	10,8	2	5,4	6	8,1
Total	37	100	37	100	74	100
Education						
Didn't go to school/didn't finish elementary school	2	5,4	7	18,9	9	12,1
Elementary School	5	13,5	8	21,6	13	17,6
Junior High School	11	29,7	8	21,6	19	25,8
Senior High School	16	43,2	13	35,2	29	39,1
Academy/Graduate	3	8,2	1	2,7	4	5,4
Total	37	100	37	100	74	100

Source: Primary Data 2024

Table 1 shows that the distribution of respondents based on characteristics in the intervention and control groups is predominantly aged 26-35 years, with 19 respondents (51.4%) in the intervention group and 23 respondents (62.2%) in the control group. The distribution of respondents based on education is mostly at the high school level, with 16 respondents (43.2%) in the intervention group and 13 respondents (35.2%) in the control group.

Table 2. Distribution of Respondents Based on Motivation in the Intervention and Control Groups in Bontomanai Village

Variable	Pre Test				Post Test			
	Intervention		Control		Intervention		Control	
	n	%	n	%	n	%	n	%
Motivation								
Enough	17	45,9	18	48,6	32	86,5	24	64,9
Not Enough	20	54,1	19	51,4	5	13,5	13	35,1
Total	37	100	17	100	37	100	37	100

Source: Primary Data 2024

Table 2 shows that the distribution of respondents based on motivation in the pretest of the intervention group includes 17 respondents (45.9%) with sufficient motivation and 20 respondents (54.1%) with low motivation. In the control group, 18 respondents (48.6%) had sufficient motivation and 19 respondents (51.4%) had low motivation. In the posttest of the intervention group, 32 respondents (86.5%) had sufficient motivation and 5 respondents (13.5%) had low motivation. In the control group, 24 respondents (64.9%) had sufficient motivation and 13 respondents (35.1%) had low motivation. Table 3 shows that the results of the data normality test are not normally distributed so that Shapiro-Wilk statistics and the Wilcoxon test type are used.

Table 3. Normality Test of Data Using Shapiro-Wilk Statistics

Motivation	Group		Data Distribution
	Intervention	Control	
Pre test	0,005	0,003	Abnormal
Post test	0,087	0,005	Abnormal

Source: Primary Data 2024

Table 4. Effect of the IMB ModelApproach on Increasing Stunting Prevention Motivation in Bontomanai Village

Motivation	Mean±SD		P-Value	
	Intervention	Control	Inteventi on	Control
Pre test	62,76±19,67	62,13±17,12	0,003	0,231
Post test	78,54±14,47	68,95±19,17		
Difference	15,78±31,45	6,82±19,05		

Source: Primary Data 2024

Table 4 shows that the Mean ± SD value of motivation in the pretest of the intervention group was 62.76 ± 19.67, which increased to 78.54 ± 14.47 in the posttest, with the difference in the Mean ± SD value. Based on the Wilcoxon statistical test results, the P-value obtained was 0.003 < 0.05, indicating that there is an effect of the IMB model approach on motivation for stunting prevention in Bontomanai Village. The Mean ± SD value of motivation in the control group during the pretest was 62.13 ± 17.12, which increased to 68.95 ± 19.17 in the posttest, with the difference in Mean ± SD being 6.82 ± 19.05. Based on the Wilcoxon statistical test results, the P-value obtained was 0.231 > 0.05, indicating that there is no effect of the IMB model approach on motivation for stunting prevention in Bontomanai Village.

DISCUSSION

Stunting prevention behavior involves various actions aimed at reducing the risk of chronic malnutrition in children, which can lead to growth and developmental issues. Stunting prevention begins during pregnancy by ensuring that pregnant women receive sufficient nutrition, particularly those containing iron, folic acid, protein, and vitamins. Healthy behaviors such as exclusive breastfeeding for the first six months of life, followed by balanced,

nutritious complementary feeding (MP-ASI), are essential in preventing stunting. Additionally, other preventive behaviors include maintaining environmental hygiene, access to clean water, and good sanitation, as repeated infections due to poor sanitation can worsen a child's nutritional status. The role of education for mothers and caregivers in understanding the importance of healthy eating, hygiene practices, and complete basic immunization also contributes to stunting prevention efforts. Community-based interventions involving community empowerment and support from healthcare workers are also needed to raise awareness and skills in implementing stunting prevention behaviors (18), (19), (20).

Motivation in the Information, Motivation, and Behavioral Skills Model (IMB) is one of the three key components that determine an individual's health behavior. This model is often used in health behavior change interventions, such as HIV/AIDS prevention, diabetes management, and other health behaviors. Motivation in this model refers to the drive or incentive that encourages someone to change or maintain positive health behaviors (13).

The research results indicate that during the pretest, respondents' motivation in the intervention group was divided into two categories: sufficient and low. A total of 17 respondents (45.9%) had sufficient motivation, while the majority, 20 respondents (54.1%), were categorized as having low motivation. This shows that before the intervention, more than half of the respondents fell into the low motivation category, indicating that they were less driven to make changes or adopt the desired behavior.

This is important to note because an individual's level of motivation can greatly influence the effectiveness of the intervention provided. Low motivation may hinder the implementation or application of the intervention program. Therefore, appropriate strategies need to be implemented to boost participants' motivation, such as providing clearer information, strengthening their belief in the benefits of the intervention, and offering stronger social support. These findings also provide a relevant initial understanding of the changes that may occur after the intervention is carried out and help assess the intervention's effectiveness in improving respondents' motivation.

The results of research on the control group showed that the distribution of respondents' motivation before the intervention was divided quite evenly between the categories of sufficient and insufficient motivation. A total of 18 respondents (48.6%) had motivation that was considered sufficient, while 19 respondents (51.4%) had motivation that was considered insufficient. This illustrates that the small majority of the control group has low motivation, but the difference is not very significant compared to those with moderate motivation.

This situation shows that the control group has a proportion of respondents with almost equal levels of motivation, and there is no clear dominance in one category. The difference between respondents who are sufficiently and less motivated is not too big, so this group can be an important benchmark in evaluating differences in results between groups who received intervention and those who did not.

In addition, the relatively balanced condition of motivation in the control group emphasizes the importance of observing how changes in motivation occur in the absence of special intervention. If the control group does not experience significant changes in motivation during the study, while the intervention group shows a substantial increase in motivation, then this can strengthen the conclusion that the intervention provided is indeed effective in increasing the respondent's motivation. Conversely, if there is no significant difference, then further evaluation of the intervention design or other factors that influence motivation may be needed.

The posttest results in the intervention group showed a significant increase in respondents' motivation after being given the

intervention. A total of 32 respondents (86.5%) had sufficient motivation, while only 5 respondents (13.5%) were still in the insufficient motivation category. This change illustrates the success of the intervention in increasing respondent motivation, which was previously dominated by respondents with low motivation at the pretest.

The increase in the number of respondents with sufficient motivation from the previous 45.9% in the pretest to 86.5% in the posttest shows that the intervention implemented was effective in influencing and motivating respondents to be more actively involved or adopt the expected behavior. The reduction in the number of respondents with less motivation also supports this finding, because previously more than half of the respondents were classified as having low motivation.

The success of an intervention in increasing motivation can be caused by various factors, such as providing clear information, social support, or strengthening respondents' beliefs about the benefits that can be obtained from behavior motivated by the intervention. Increasing motivation is very important because motivation is a key factor that can influence the successful implementation of the desired behavior. These results also confirm that appropriate interventions can produce significant behavioral changes by increasing individual motivation.

The posttest results in the control group showed an increase in motivation, even though this group did not receive direct intervention. A total of 24 respondents (64.9%) had sufficient motivation, while 13 respondents (35.1%) were still in the insufficient motivation category. When compared with the pretest results of the control group, where only 48.6% of respondents had sufficient motivation and 51.4% had insufficient motivation, it can be seen that there was a significant shift towards increasing motivation in the control group.

The observed increase in this study may be attributed to various external factors influencing the respondents, rather than solely due to the interventions provided. These factors include the learning effects that occur during the research process, where respondents may gain new knowledge from interactions with the researchers or discussions with other participants. Additionally, the influence of the environment or social conditions, such as support from family and friends, as well as cultural factors, can also affect the way respondents think and behave. Respondents may be exposed to information related to the research topic from other sources that are not directly linked to the formal intervention, such as media or everyday conversations. This phenomenon is often referred to as the Hawthorne Effect, where individuals change their behavior simply because they are aware that they are being observed or participating in a study. Thus, even respondents in the control group—who do not receive any specific treatment—may also exhibit changes in behavior or motivation as a result of their participation in the study. Therefore, research outcomes must take these factors into account to better understand the changes that occur.

However, the increase in motivation in the control group was not comparable to the increase that occurred in the intervention group, which showed higher effectiveness. The fact that the control group still had a proportion of respondents with less motivation of 35.1% confirms that, although there has been an increase, specific interventions are still needed to encourage motivation more significantly.

These results are important because they show that although there are other factors that can influence motivation, interventions given directly to the intervention group have a greater and more targeted impact. Analysis of these results also provides validation that significant differences between the intervention and control groups can be attributed to the intervention undertaken, and not simply to the effect of participation in the study.

Based on the research results, it was found that the Mean ± SD value of motivation in the pretest of the intervention group was 62.76 ± 19.67, and after intervention with the IMB (Information-Motivation-Behavioral Skills) model approach, the Mean ± SD value in the posttest increased to 78 .54 ± 14.47. The difference in increasing motivation between pretest and posttest in the intervention group was 15.78 ± 5.20, which indicates a significant increase in motivation after the intervention was carried out. The results of the Wilcoxon statistical test show a P value of 0.003 (< 0.05), which means there is a significant influence of the IMB model approach on motivation to prevent stunting in Bontomanai Village.

In the control group, the Mean ± SD value of motivation in the pretest was 62.13 ± 17.12, and after the posttest measurement, this value increased to 68.95 ± 19.17. The difference in increasing motivation in the control group was only 6.82 ± 19.05, which shows a much lower increase in motivation compared to the intervention group. Based on the results of the Wilcoxon statistical test, a P value of 0.231 (> 0.05) was obtained, which indicates that there is no significant effect of the IMB model approach on motivation to prevent stunting in the control group.

The significant increase in motivation in the intervention group shows that the IMB model approach is effective in increasing motivation to prevent stunting. The IMB model works by providing adequate information, motivating personally and socially, and strengthening the behavioral skills needed to take action to prevent stunting. This is in line with previous research which shows that interventions based on information, motivation and behavioral skills are effective in changing health behavior, especially in interventions related to disease prevention and improving nutrition.

This study is also consistent with research conducted by Fisher et al. (21), which shows that IMB-based interventions can increase individual motivation to take preventive action in a public health context. Another study by Tariq et al. (22) also showed similar results where the use of the IMB model increased public awareness and motivation in efforts to prevent malnutrition in children.

The results of this study align with the research by Fisher, J.D., & Fisher, W.A. (21), where the use of the IMB model in health interventions was shown to enhance motivation and healthy behaviors among respondents. Osei et al. (23) also reported that education and motivation-based interventions positively impacted the prevention behaviors for infectious diseases and malnutrition in children in rural communities. Meanwhile, research conducted by Saadah et al. emphasized that accurate information regarding stunting and its impact on child development is crucial. The study demonstrated that IMB model-based interventions providing clear and relevant information can increase parents' knowledge about the importance of good nutrition and the adverse effects of stunting (24). In this context, well-designed educational programs can help parents recognize the early signs of stunting and the preventive measures that can be taken. Furthermore, research by Shah et al. in South Asia also reported that strong cultural barriers to changing children's eating behaviors reduced the effectiveness of the IMB model. Despite increases in knowledge and motivation, traditional practices that contradict health advice remain obstacles to preventing stunting (25).

CONCLUSIONS

This study concludes that the IMB model (Information-Motivation-Behavioral Skills) approach has a significant impact on increasing stunting prevention motivation in Bontomanai Village, as indicated by the significant statistical test results in the intervention group. In contrast, no significant impact on stunting prevention motivation was found in the control group. This suggests that the IMB model-based intervention is effective

in enhancing motivation compared to the group that did not receive any intervention.

ACKNOWLEDGEMENTS

The researcher would like to thank the Directorate General of Research and Development, the Directorate General of Research and Community Service, the Ministry of Research, Technology and Higher Education for the research grant for novice lecturers for the 2024 budget year. In addition, the researcher would like to thank the leadership of the Universitas Pejuang Republik Indonesia, the Village Head and staff in Bontomanai Village who have helped throughout the research process.

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