

## The Effect of the Unting Debt Game (Anti-Stunting Snake and Ladder) on Increasing Knowledge About Stunting

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### ABSTRACT

The prevalence of stunting in the world, as collected by WHO in 2020, was 150.8 million (22.2%). WHO has designated five regions as stunting prevalence, including Indonesia in the Southeast Asian region with a prevalence rate (36.4%). Adolescents are a group that has the potential to be agents of behavior change. For this reason, adolescents need to be given education to increase knowledge and build awareness of the impact of stunting in the future. This study aims to determine the influence of Uting Debt Media (Snake and Ladder Stunting) in increasing adolescents' knowledge about stunting. This research is quantitative. The type of research used was Quasy Experimental pretest and posttest with the control group. The population in this study is all young women of MTS Jamaluddin Bagik Nyaka Village in August 2024, with a sample of 30 people divided into two groups with 15 members each and using purposive sampling techniques. Data collection was carried out using a questionnaire to determine the level of knowledge of adolescent girls about stunting before and after the intervention. The statistical results of the post-test of the experimental and control groups using the Mann-Whitney techniques showed Asymp. signature. (2-tailed)  $0.012 < 0.050$ , with the mean rank of the experimental group of 19.00 and the mean rank of the control group of 12.00. So, it can be concluded that there is a significant difference in the results of the post-test of the experimental group and the control group, which affects the increase of knowledge in the experimental group before and after being given treatment to increase adolescent knowledge about stunting

## Introduction.

The occurrence of stunting will have a bad impact on toddlers. The impact of short-term stunting is in the form of impaired physical and mental development, decreased intelligence, and metabolic problems. Meanwhile, the impact of long-term stunting is in the form of decreased cognitive ability and decreased immunity so that the body is susceptible to disease and is at risk of degenerative diseases such as diabetes mellitus, cardiovascular disease, cancer, stroke, and not being able to compete in work which will result in low productivity (Soliman et al., 2021). Based on the prevalence of stunting in the world collected by WHO in 2020, as many as 150.8 million or (22.2%) (*Joint Child Malnutrition Estimates (JME) (UNICEF-WHO-WB)*, n.d.).

WHO has designated five regions as stunting prevalence, including Indonesia which is in the Southeast Asian region with a prevalence rate (36.4%) (Laksono et al., 2022). Data from the 2023

Indonesia Health Survey (SKI), which was released during the Ministerial Limited Meeting (Ratas) held at the Vice President's Palace on Tuesday (19/03/2024). shows that the prevalence of stunting nationally decreased by 0.1% from 21.6% in 2022 to 21.5% in 2023. Based on this data, stunting has decreased. Although it has decreased, the prevalence of stunting is still above the World Health Organization (WHO) minimum of <20%.

Based on Electronic Data on Community-Based Nutrition Reporting (e-PPGBM), the trend of stunting development and decline in NTB Province in the last five years from 2019 to September 2023, namely in 2019, NTB stunting was at 25.9%, down 2.4%. Then, in 2020, the stunting rate in NTB was 23.51%, down to 4.3%, and in 2021, the stunting rate in NTB was 19.23%, down 2.4%. Furthermore, in 2022, the stunting rate in NTB is at 16.84%, down to 3.0%, so the stunting rate in September 2023 is 13.49% (Laksono et al., 2022).

Then, if the stunting data per district/city in NTB in 2023 through e-PPGBM, the lowest stunting rate is in West Sumbawa Regency (KSB) at 7.64%. Furthermore, Sumbawa Regency had a stunting rate of 8.47%, Dompu Regency 10.89%, and Bima Regency 11.78%. Then the districts with a stunting rate above 12% are West Lombok Regency at 12.38%, Bima City at 12.39%, Central Lombok Regency at 13.34%, Mataram City at 14.76%, East Lombok Regency at 16.18% and the highest North Lombok Regency with a stunting rate of 18.03% (Menteri Perencanaan Pembangunan Nasional/ Kepala Badan Perencanaan Pembangunan Nasional Republik Indonesia, 2019).

Based on the data above, East Lombok Regency occupies second with the highest stunting rate in 2023. In the same year, the stunting rate in the Aikmel Health Center work area reached 483 stunting cases (17%), which means that it has not reached the national target set in 2023, which is 16%.

Therefore, handling stunting incidents is one of the national development priorities described in the 2020–2024 RPJMN; the government's target is to reduce the prevalence of stunting to 14% by 2024 (Satriawan, 2018a). The government aims to prevent and reduce direct disturbances (specific nutrition interventions) and indirect disturbances (sensitive nutrition interventions). The priority target of this effort is people involved in the First 1000 Days of Life (HPK), namely pregnant women, breastfeeding mothers, and children aged 0–2 years. Meanwhile, the important targets are children aged 24–59 months, adolescents, and women of childbearing age (Satriawan, 2018b).

Another study in 2018 showed that there was a significant relationship between adolescent pregnancy and the incidence of stunting in children under five. This means that the younger the age of the mother experiencing pregnancy, the greater the risk of the child experiencing stunting (Larasati et al., 2018). For this reason, nutritional handling is very important in the adolescent period. Adolescents are a potential group that can be relied on as agents of behavior change. Adolescents' involvement in stunting prevention is important because adolescents are at the forefront of innovation and agents of change.

The Ministry of Communication and Information Technology (Kominfo) invites millennials to participate in the "Genbest" socialization forum, which campaigns for information about the contents of my plate (Kementerian Kesehatan RI, 2018). Isi Piringku is a program that helps the community

understand how to eat the right portion to meet nutritional needs. "The contents of my plate are a replacement for the 4 Healthy 5 Perfect concept. The old concept no longer accommodates the fulfillment of balanced nutrition. In addition to implementing *Isi Piringku*, we also invite the public to reduce the consumption of sugar, salt, and fat" (Head of the Sub-Directorate of Health Information and Communication). The portion of *My Plate* consists of staple foods, namely a source of carbohydrates with a portion of 2/3 of 1/2 of a plate. Then it comes with side dishes with a portion of 1/3 of 1/2 plate. For the other half of the plate, fill it with a proportion of vegetables with a portion of 2/3 and fruits with a portion of 1/3 (Kemenkes RI, 2018).

The healthy eating guide makes you full and ensures your body is healthy and nutritious. Unfortunately, many people still do not know about the *Isi Piringku* Campaign. In fact, by implementing *Isi Piringku*, stunting can be prevented from the beginning. Not only implementing *Isi Piringku*, teenagers are expected to be able to implement a healthy lifestyle such as washing their hands with soap, exercising, monitoring their weight, and drinking eight glasses of water every day. In this way, today's young women will not only take care of their health but will also have an impact in the future, where they will give birth to a healthy and stunting-free generation (Kementerian Kesehatan Republik Indonesia, 2024).

Adolescent girls' knowledge about stunting can be obtained from health promotion activities using several media so that the information conveyed can be captured more easily (Ayu et al., 2023). Health promotion media can be interpreted as a health promotion tool to facilitate communication and dissemination of information. Health promotion media is a tool used in conveying materials, materials, or health messages so that the community or someone can obtain messages and knowledge from various kinds of aids or media (Chen & Wang, 2021). Health promotion media can be games, one of which is *UTANG UNTING*, also called Snake and Ladder, to increase young women's knowledge about stunting.

There was an increase in students' knowledge about dental and oral health after using the snake and ladder game media (Hawa Maulida et al., 2023). The results of the study showed that there was a significant difference ( $p < 0.05$ ) in the data before and after counseling using snake and ladder games, which meant that there was an influence on counseling using snake and ladder games on improving dental and oral health knowledge of children with hearing disabilities (Hawa Maulida et al., 2023). Snake and ladder learning media is an effective medium to increase students' absorption and understanding of learning (Ariyani et al., 2024).

The Aikmel Health Center has six assisted villages, and *Bagik Nyaka Santri Village* occupies the second top position in stunting rates in 2023, with 50 stunting cases (21.6%). As the name implies, *Bagik Nyaka Santri Village* has 3 Junior High Schools (SMP), private schools, and 2 *Madrasah Tsanawiyah* (MTs). One of them is MTs *Jamaluddin* with the highest number of female students, namely 115 people. An initial survey conducted by researchers at MTs *Jamaluddin* on March 18, 2024, by asking and answering questions to female students about stunting, found that seven students said they did not know what stunting was, while three others said stunting was short.

Providing education about stunting since adolescence is very important because some adolescents do not know about stunting and the factors that cause stunting, so knowledge and attitudes about stunting must be given from adolescence. This study aims to find out "The Influence of Unting Debt Game Media (Snake and Ladder Stunting) on Adolescent Knowledge About Stunting Prevention at MTs Jamaludin Bagik Nyaka."

## Method

This study is quantitative research with the type of quasi-experimental pretest and posttest with a control group involving the experimental group and the control group. The experimental group will be taught about stunting through the Unting Debt Game Media (Snake and Ladder Stunting), and the control group will be given simple counseling. The population in this study is all young women in MTs Jamaludin Bagik Nyaka, with a sample of 30 people divided into two groups with 15 members each and using the purposive sampling technique, namely sampling in accordance with the research objectives. The characteristics of the sample that can be included in the inclusion criteria of this study include adolescent girls who are in class VII, willing to be the subject of the study, in good health, adolescent girls who are present during the pre-test and post-test and do not have any abnormalities/disabilities. This research was conducted on adolescent girls at MTs Jamaluddin Bagik Nyaka in August 2024. Data collection to determine the level of knowledge of adolescent girls about stunting before and after the intervention used a questionnaire from (Ayu et al., 2023), which has been tested for validity and reliability. Data analysis used Mann Whitney for data that was not normally distributed and to determine the influence of the game media UTANG UNTING (snake and ladder stunting) in increasing adolescents' knowledge about stunting. This research is worth doing. The researcher obtained the Al-Azhar Islamic University of Ethics code with the number 105/EC-04/FK-66/UNIZAR/VIII/2024.

## Result

**Table 1.** Distribution of Adolescents' Knowledge Level (Group 1) Before and After Being Given Education About Stunting Through Simple Counseling.

Variable	Pretest		Posttest	
	F	%	F	%
<i>Level of Knowledge</i>				
Less	0	0	0	0.00
Enough	12	80	1	7
Good	3	20	14	93
Total	15	100.0	15	100

Source: Primary data, August 2024

Based on Table 1, it can be seen that before the simple counseling on stunting was carried out, it can be seen that 12 respondents (80%) had a sufficient level of knowledge. Only three people (20%) and no respondents had a low level of knowledge. Meanwhile, after simple counseling on stunting, it can be seen that 14 respondents (93%) have a good level of knowledge, one person (7%) is enough, and no respondents have a low level of knowledge.

**Table 2.** Distribution of The Level of Knowledge of Adolescents (Group 2) Before and After Being Given Education Through The Game Media UTANG UNTING (Snake and Ladder Stunting).

Variabel	Pretest		Posttest	
	F	%	F	%
Less	0	0	0	0.00
Enough	14	93	1	7
Good	1	7	14	93
Total	15	100.0	15	100

Sumber: Data primer, Agustus 2024 Source: Primary data, August 2024

Based on Table 2, it can be seen that before education about stunting was carried out through the media of Utang Uting (Snake Ladder Stunting), it can be seen that there were no respondents who had a low level of knowledge, only 14 people (93%), and only one person (7%). Meanwhile, after education about stunting through the media of Utang Uting (Snake and Ladder Stunting), it can be seen that 14 respondents (93%) have a good level of knowledge, one person (46.67%) is enough, and no respondents have a low level of knowledge.

**Table 3.** Pretest and Posttest Results of the Experimental Group

Groups	N	Mean±SD	P value
Pretest	15	19.93	0,002
Posttest	15	11.07	

Sumber: Data primer, Agustus 2024

The posttest statistical test of the experimental group with the Mann-Whitney technique obtained a p-value of  $0.002 < 0.05$ , meaning that there was a significant difference between the results of the pretest and the group posttest, so it was concluded that the provision of information through the media of Utang Uting (Snake Ladder Stunting) could affect the progress of adolescents—knowledge about stunting.

**Table 4.** Pretest and Posttest Results of the Control Group

Groups	N	Mean±SD	P value
Pretest	15	20.27	0,001
Posttest	15	10.73	

Sumber: Data primer, Agustus 2024

The statistical test of the pretest and posttest of the control group with the Mann-Whitney technique produced a p-value of  $0.001 < 0.05$ , meaning that there was a significant difference, meaning that counseling could affect the improvement of adolescent knowledge about stunting, the level of knowledge of adolescents before and after being given education about stunting through the media of Utang Uting (Snake Ladder Stunting)

## Discussion

The study results showed that both groups, those who received simple counseling and those who were educated using the "Utang Unting" (Anti-Stunting Snake and Ladder) game, experienced a significant increase in knowledge about stunting, with p-values  $< 0.05$  for both groups. Knowledge improvement was achieved through direct and systematic information delivery in the control group, which received simple counseling. This counseling method effectively increased knowledge, although the approach tended to be passive since the audience was not actively engaged in the learning process. In contrast, the experimental group, which was educated using the "Utang Unting" game, showed significant knowledge improvement. This educational game provided a more interactive learning experience involving motor and emotional activities and facilitating participant interaction. This

approach made the educational messages easier to understand and remember, leading to greater knowledge improvement than simple counseling. These results indicate that interactive media, such as educational games, can enhance knowledge, especially among adolescents who prefer engaging and participatory learning methods. However, simple counseling remains relevant and beneficial, particularly in environments with limited access to interactive media. Both methods complement each other and can be adapted to the needs and conditions of the audience.

Stunting is a condition where the growth and development of children under 1000 HPK are affected by chronic malnutrition. The causes of stunting are divided into two, namely primary and secondary causes. The main causes include hereditary factors (familial stunting), pathological disorders, hormonal deficiency disorders, and chromosomal abnormalities. Secondary causes such as intrauterine growth retardation, chronic malnutrition, chronic diseases, endocrine disorders, and psychosocial disorders (WHO, 2015)

Many factors also cause stunting, and not only nutritional problems during pregnancy but also in toddlers can cause stunting. One is the mother's knowledge of health and nutrition before and during pregnancy and childbirth. Knowledge results from knowing a person after he feels an object (Lestari et al., 2023). After conducting simple counseling on stunting in group A, the results were obtained that there was an increase in the level of knowledge of the respondents, which was previously quite good for 14 respondents (93%). This finding aligns with research that states that a combination of lecture and discussion methods is the right method for education (Vinci & Bachtiar, 2022).

Meanwhile, in group B, it is carried out through the media of Utang Uting (Snake and Ladder Stunting) regarding stunting. This shows that providing education through the media of Utang Uting (Snake and Ladder Stunting) effectively increases adolescents' knowledge. Evaluation related to adolescent understanding was given through the media of Utang Uting (Snake Ladder Stunting) and carried out through pre-post test measurements, which obtained an overview of the percentage increase in adolescent knowledge before and after the provision of material and, as a result, there was an increase in the level of knowledge of respondents which was previously quite good for 14 people (93%). The results of this study are strengthened by the findings of a study that says that snake and ladder games effectively increase knowledge in pregnant women about stunting by 26%, whereas snake and ladder games are fun games (Mulianingsih et al., 2021). The results of another study on the effectiveness of the snake and ladder game showed a p-value of  $< 0.001$ , meaning there is a difference in knowledge before and after using the snake and ladder method (Logumpa et al., 2020).

Education is a process of transferring knowledge so that there is a change for the better. The media used in education should pay attention to the involvement of the five senses because a person's knowledge is obtained through the five senses. The more the five senses are involved in the educational process, the better the impact (Haleem et al., 2022).

Socialization about the importance of stunting prevention can be done lightly, interestingly, and not boring, especially among teenagers. The snake and ladder game is a cooperative game that allows players to interact and participate actively (Barkun et al., 2024).

Nutrition knowledge is what is known about foods, including healthy food, including healthy food for certain age groups (e.g., women aged preconception), and how to choose, process, and prepare true foods. Women of childbearing age with good nutritional knowledge will be able to choose the right type of food for themselves in terms of quantity and the quality it consumes. Thus, nutritional knowledge is one of the protective factors in preparing for pregnancy or preconception (Diana et al., 2020).

Statistical tests of the experimental group using Mann-Whitney obtained Asymp results. S. (2-tailed)  $0.02 < 0.05$  with mean rank, meaning that there is a significant difference that providing information through the media of Utang Uting (Snake and Ladder Stunting) can affect adolescents' knowledge about stunting. The statistical test of the control group with the Mann-Whitney technique obtained a p-value of  $0.01 < 0.05$ , meaning that providing information through counseling methods can affect adolescents' knowledge about stunting.

The results of the statistical test showed that there was a difference in the mean knowledge about stunting before and after education. Providing education using the Utang Uting (Snake and Ladder Stunting) media can increase young women's knowledge about stunting. Receiving information through an informative snake and ladder method can be much better than lectures. In addition to using the five senses, the snake and ladder method also uses motor activities, the ability to manage emotions, and patience to reach the finish line (Marfira, 2021). The results of community service at Buah Hati Kindergarten show that mothers under five seem enthusiastic, happy, and more responsive in receiving information through snake and ladder games compared to the lecture method (Ifayatun & Fajarina, 2022).

Problems that occur in stunting, especially in the first 1000 days of life, can have an impact later on Human Resources (HR), which causes in the short term to result in suboptimal growth, addition that it can inhibit cognitive and motor development and suboptimal physical size accompanied by disorders in the metabolic system (Barkun et al., 2024). Meanwhile, in the long term, stunting also impacts the decreasing capacity for intellectuals, structural disorders, nerve function, and sedentary brain cells and can decrease the ability to absorb learning at school age, which can affect productivity in adulthood. In addition, malnutrition or stunting also causes impaired growth (short and/or thin) and an increased risk of non-communicable diseases such as Diabetes Mellitus (DM), hypertension, coronary heart disease, and stroke. Stunting prevention can be done by conducting knowledge counseling for adolescents and women in the form of preventive and promotive. (Mulianingsih et al., 2021)

Adolescent nutrition education is expected to contribute to adolescents' awareness as prospective parents of maternal and child health at an important time in their lives, including breaking the cycle of stunting problems. The success of nutrition education is greatly supported by the media used. Various educational media have been widely developed in nutrition education. However, several studies state that Android-based educational media is more effective than other media in increasing nutritional knowledge and behavior (Ariyani et al., 2024).

The snake and ladder game is a cooperative game that allows players to interact and participate actively. Several studies also convey that the simulation of snake and ladder games is very effective for increasing knowledge (Soliman et al., 2021), in line with the results of research that snake and ladder games are very effective in increasing knowledge and attitudes among adolescents (Dini et al., 2021)

## Conclusion

The results showed that both groups, those who received simple counseling and those who were educated using the game "Utang Unting" (Anti-Stunting Snake and Ladder), experienced a significant increase in knowledge about stunting for both groups. Knowledge improvement was achieved through direct and systematic information delivery in the control group, which received simple counseling. This counseling method effectively increases knowledge, although the approach tends to be passive because the audience is not actively involved in the learning process. On the other hand, the experimental group that was educated using the game "Utang Unting" also showed a significant increase in knowledge.

## Recommendations

Adolescent nutrition education is expected to contribute to adolescents' awareness as prospective parents regarding the health of mothers and children at important moments in their lives, including breaking the chain of stunting problems. The success of nutrition education is strongly supported by the media used. The selection of information media can be adjusted to the characteristics of the information recipient. Media Utang Uting (Snake and Ladder Stunting) and simple socialization can increase adolescents' knowledge about stunting.

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