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Nutrition Education for Young Children as a Means of Preventing Stunting in KB Al Mutchtaddin

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Abstract: *The background of this study is the high risk of stunting among young children due to poor dietary habits and unsanitary living conditions, necessitating the development of educational interventions by the Al Mutchtaddin Family Planning Clinic as a preventive measure. The objective of this study is to explore and evaluate the implementation of nutrition education at KB Al Mutchtaddin, as well as to assess the effectiveness of various nutrition strategies in improving children's knowledge, eating behaviors, and healthy lifestyle habits to prevent stunting. This study employs a qualitative method using a case study approach. Research data sources included teachers, the school principal, activity documentation, and results of direct observations during the nutrition education program. Data collection techniques were conducted through participatory observation, in-depth interviews, and photo documentation as well as activity records. The data were then analyzed using interactive analysis techniques, which included data reduction, data presentation, and repeated conclusion drawing until valid and contextual findings were obtained. The research findings indicate that Al Mutchtaddin Kindergarten has effectively implemented six nutrition education strategies: integrating nutrition content into daily lessons, hands-on activities, mini-outdoor activities and educational games, fostering healthy hygiene habits, a fruit and vegetable Market Day, and the provision of supplementary meals (PMT). These interventions have had a positive impact on improving children's knowledge of healthy foods, changing eating behaviors, personal hygiene, and collaboration with parents, which tangibly supports efforts to prevent stunting from an early age.*

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INTRODUCTION

The quality of a nation's human resources is largely determined by the nutritional status and health of its people, especially during childhood (Cucu Cahyati, Ahmadin, 2024). Early childhood, defined as the ages of 0–6, is the golden age of human growth and development (Suryanti, Ramadhan et al., 2025). During this period, physical growth, brain development, and the formation of basic behaviors occur at a rapid pace and determine the quality of life in the future (Hermansyah, 2024). The reality is that in Indonesia, many children still suffer from nutritional problems, one of which is stunting—a condition of impaired growth caused by chronic malnutrition (Suminar et al., 2024). According to data from the 2023 Indonesian Nutrition Status Survey (SSGI), the prevalence of stunting in Indonesia remains at around 21.5%, well above the WHO standard, which sets a maximum threshold of 20% (Titaley et al., 2023). This situation indicates that efforts to reduce stunting rates have not yet met the national target (Trisnawati et al., 2025). Stunting is not merely a physical issue; it also leads to lower cognitive abilities, reduced future productivity, and a higher risk of degenerative diseases in adulthood (Sa`diyah et al., 2024).

Young children are a group that is highly vulnerable to nutritional problems because they are in a phase of rapid growth and development (Angga et al., 2023). An unbalanced diet, a habit of consuming processed foods, parents' lack of knowledge about nutrition, and limited access to nutritious food are the primary factors contributing to stunting (Rostinah, 2024). Therefore, nutrition education for young children plays a crucial role in instilling a basic understanding of the importance of healthy and nutritious food (Savelli & Murmura, 2022). Through this educational program, children can learn about different types of food, their benefits for the body, and develop healthy eating habits from an early age (Anam et al., 2025). Nutrition education also plays a role in raising awareness among parents and teachers about the importance of providing a balanced, nutritious diet (Hartini, 2022). The goal of nutrition education is not merely to impart knowledge, but to foster sustainable healthy lifestyle habits (Wijeakumar et al., 2023).

The urgency of this issue lies in the importance of an educational approach as a school-based strategy for preventing stunting (Kurniati et al., 2025). To date, government programs such as the National Movement for Accelerated Nutrition Improvement and the First 1,000 Days of Life (HPK) Movement have been widely implemented, and the Free Nutritious Meals Program has also been carried out; however, most of these initiatives still focus on medical interventions and the provision of supplementary food assistance (Santosa et al., 2021). Yet the educational aspects involving children, teachers, and parents are still often overlooked (Mandasari et al., 2025). Early childhood education has great potential to serve as a means of preventing stunting through contextual and engaging learning for example, through games, picture books, songs, and hands-on activities related to nutritious foods (Suparji et al., 2024). Through this approach, children not only receive information, but also develop a deep understanding and hands-on experience (Rostianingsih et al., 2025).

This issue is also important and quite serious because it seeks to integrate the concept of early childhood education with efforts to prevent a public health problem, namely stunting (Hatijar et al., 2025). Until now, the issues of nutrition and stunting have been discussed primarily in health and medical contexts, even though education plays a crucial role in fostering healthy lifestyle habits from an early age (Syarifuddin et al., 2025). Through educational

activities in early childhood education settings, children can be encouraged to understand the importance of eating vegetables, fruits, and protein, as well as avoiding foods high in sugar and fat (Mulyani et al., 2025). Teachers can serve as agents of change in fostering healthy eating habits within the school environment (Asrarul Mufidah, Agus Salam, 2025). What's particularly interesting is the children's involvement in active learning activities, such as creating nutrition posters, learning about food colors, role-playing as "little nutritionists," and so on (Maidelwita et al., 2024). This approach is not only relevant for children but also has a positive impact on the parents involved in these activities (Syahru Ramadhan, 2024).

A review of the literature has shown that the topics of nutrition education and stunting prevention have been extensively studied by various researchers in the past. Several studies indicate that nutrition education conducted in early childhood education centers can improve children's knowledge and behavior regarding the selection of healthy foods (Sartika et al., 2021).). This is supported by findings that early interventions can help establish better eating habits through experiential learning and modeling (Suminar et al., 2024).However, most of these studies are still limited to theoretical aspects and have not yet extensively examined the implementation of nutrition education through contextual and locally-based approaches (Tiya et al., 2024). In addition, there is still little research that integrates nutrition education activities into thematic learning in early childhood education on a sustained basis. Some studies also have not concretely described the collaborative role between teachers, parents, and children in nutrition education programs (Soliman et al., 2021). This situation is compounded by the finding that most nutrition interventions remain piecemeal and short-term, and thus have little impact on long-term behavioral change (Wayan et al., 2019). In fact, other studies confirm that parental involvement and consistency in school-based learning are critical to the success of children's nutrition education (Adawiyah et al., 2024). Therefore, there remains significant room for research, particularly regarding how nutrition education can be effectively and engagingly implemented in school settings while taking into account the sociocultural characteristics of the community (Kurniati et al., 2025) The novelty of this study lies in the integration of local values, such as traditional food-based consumption patterns, family eating habits, and the role of community leaders in shaping children's behavior. This contextual approach, rooted in local culture, is expected to enhance the relevance, acceptance, and sustainability of nutrition education programs in early childhood education settings.

This study is important to conduct in early childhood education settings, one of which is the Al Muchtaddin Kindergarten located in Nipa Village, Ambalawi Subdistrict, Bima Regency. The selection of this school was based on several key reasons. This area is one of the regions with a relatively high risk of stunting compared to the national average, according to data from the Bima Regency Health Office. This region is one of the areas with a relatively high risk of stunting compared to the national average, according to data from the Bima District Health Office. Based on reports from recent years, the prevalence of stunting in Bima District ranges from 30–35%, which remains above the WHO threshold of 20%. Meanwhile, in Ambalawi Subdistrict, stunting rates are reported to be higher than the regency average, influenced by factors such as limited access to nutrition, parenting practices, and the community's socio-economic conditions. The community's strong ties to local culture and traditional consumption patterns present a significant opportunity to develop nutrition education grounded in the local cultural context. Playgroup (KB) Al Muchtaddin demonstrates a strong commitment to early

childhood education and is open to creative learning innovations. The active involvement of teachers and parents in school activities represents a major potential for implementing participatory nutrition education programs. Other notable aspects of this school include a conducive learning environment, a play-based learning approach, and strong community support for educational activities. Considering these various factors, this study is expected to make a tangible contribution to developing an effective, practical, and contextually relevant nutrition education model as a strategy for preventing stunting from an early age.

METHODS

This study employs a qualitative research approach using a case study design. This approach was chosen because it focuses on gaining an in-depth understanding of the processes, experiences, and behavioral changes that occur in young children and their supportive environments following the implementation of a nutrition education program (Usman, 2020). The case study provides an opportunity to examine the phenomenon in its entirety within a real-world context, specifically at the Al Mutchtaddin Kindergarten located in Nipa Village, Ambalawi Subdistrict, Bima Regency. The data sources consist of primary and secondary data. Primary data was obtained from teachers, parents, and early childhood students directly involved in nutrition education activities, The selection of participants was also based on criteria such as active engagement in learning, willingness to participate, and representation of diverse socioeconomic backgrounds. The main participants consisted of approximately 3 teachers, 10 students, and 3 parents/guardians. This number was chosen to ensure the collection of in-depth data while still allowing for effective management of the study.. The head of the institution and educators responsible for program implementation served as key informants for exploring the dynamics of nutrition education implementation at the school. Secondary data included learning documents, Daily Lesson Plans (RPPH), nutrition education materials, child development records, government program guidelines on stunting prevention, and photo or video documentation of activities (Sugiono, 2020). Data collection methods included participatory observation of learning activities, in-depth interviews with educators and parents, and a review of documents to corroborate the field findings. All of these methods were conducted systematically to obtain rich, natural data that accurately reflected the actual conditions at KB Al Mutchtaddin, the focus of this qualitative study (Ramdhan, 2017).

The observations were conducted by observing nutrition education activities in the classroom during shared meals, introductions to healthy foods, handwashing demonstrations, and the children's behavior when receiving nutrition education from the teacher. The observations were conducted in a natural setting so that the researcher could understand the patterns of interaction, the children's responses, and the teacher's methods in delivering nutrition education without any manipulation (Luthfiyah, 2017). In-depth interviews were conducted with three classroom teachers, the kindergarten principal, and three parents to assess their understanding of stunting, prevention efforts, and the impact of the ongoing nutrition education program. The interviews were semi-structured to allow researchers the flexibility to delve deeper into specific topics based on the field context (Sidiq & Choiri, 2018). Documentary research methods were used to collect various archives, photos of activities, child development reports, as well as curriculum and health program documents implemented at the institution. For data analysis, this study employed an interactive qualitative analysis model,

which includes the processes of data reduction, data presentation, and drawing conclusions. Data reduction was conducted by selecting relevant information directly related to the research objectives. Data presentation was carried out through descriptive narratives to facilitate the identification of patterns and relationships among the components of nutrition education. Conclusions were drawn continuously throughout the research process until strong, valid findings were identified that reflected the real impact of nutrition education in preventing stunting in young children at the Al Mutchtaddin Daycare Center (Helaluddin, 2015).

RESULTS AND DISCUSSION

KB Al Mutchtaddin has made nutrition education a priority program at the school, based on the importance of understanding balanced nutrition from an early age as the foundation for children's growth and development. This program is designed to provide accurate knowledge to children, teachers, and parents about healthy eating habits so as to prevent the risk of stunting from the very beginning of life. Nutrition education is viewed as a strategic step in creating a learning environment that supports health, raising family awareness of the importance of nutritious intake, and fostering good and sustainable eating habits in the daily lives of young children. Results from interviews with teachers, students, and parents, as well as observations and photographic documentation of activities, indicate that the nutrition education implemented at KB Al Mutchtaddin is as follows:

1. Integrating Nutrition Content into Daily Learning Activities

The implementation of nutrition education at Al Muchtaddin Kindergarten began by directly integrating nutrition content into the daily learning activities. Teachers not only verbally explain the concept of healthy eating but also create concrete learning experiences through observation, demonstration, and reflection. Every morning, teachers observe and record the types of packed lunches the children bring, then categorize these foods into healthy and less healthy options using visual cards. This process enables children to independently identify nutritional components through tangible evidence. Teachers also demonstrate portion comparisons using props such as replicas of fruits, vegetables, and daily menus. The children then practice arranging a balanced meal plate through the "Healthy Plate Arrangement" game. This activity enhances the children's ability to name, select, and prioritize nutritious foods. The activity is conducted routinely every day, ensuring that the children's understanding is more firmly established and consistent, as it is reinforced through structured practice.

Teachers at Al Muchtaddin Kindergarten also integrate nutrition education through a thematic approach aligned with early childhood development indicators. Under the "Me" theme, teachers systematically link lessons on body parts to the nutritional needs that support growth. Children are guided to connect the functions of body organs with the types of food required such as carrots to maintain eye health or fish to strengthen the brain. This activity does not stop at explanation but is followed by hands-on activities where children sort food images based on their benefits, match food types with body parts, and classify food items according to nutritional groups. Teachers also use picture books that explicitly illustrate the impact of malnutrition on growth and development, enabling children to interpret health messages more easily. This thematic learning process allows children to build nutritional knowledge gradually, demonstrating that nutrition education does not stand alone but is

embedded within a broader daily learning structure. This was stated by one of the teachers, Ms. Suhartati, in an interview as follows.

> *"We teachers at Al Muchtaddin Kindergarten use a thematic approach because children find it easier to understand when the material is directly related to their daily lives. For example, during the 'Me' theme, we try to connect body parts with foods they're familiar with. Children are also more interested when there are pictures and activities like matching or sorting. I usually repeat these activities in different contexts so they remember and start getting used to choosing healthy foods."*

Consistent integration of nutrition education leads to observable behavioral changes. Children begin to choose healthier lunchbox options, refuse overly sweet foods, and ask questions about the benefits of the foods they consume. Teachers also document these developments through anecdotal notes and daily assessment rubrics that demonstrate the children's growing understanding of the concept of nutritious food. Moreover, the school coordinates nutrition education with parents through class communication groups. Teachers regularly send healthy lunchbox guidelines, provide sample menus, and clarify dietary mistakes that could potentially lead to stunting risks. These findings are consistent with Social Learning Theory, which emphasizes that children learn through observation, repetition, and social interaction in their environment. When teachers routinely provide examples and reinforcement, children tend to imitate and internalize such behaviors. Additionally, research by Palupi (2025) shows that integrated and sustained nutrition education can improve both children's knowledge and healthy eating behaviors. Parental support through intensive communication has also been shown to enhance the success of nutrition interventions (Irmaida, Dodik Briawan, 2021).

2. Hands-On Activities Through Practice-Based Learning

Hands-on activities in nutrition education at Al Mutchtaddin Kindergarten are conducted through practice-based learning that directly involves children in identifying, preparing, and comparing types of healthy foods. Teachers consistently observe, demonstrate, and guide children to recognize the shape, color, texture, and nutritional benefits of the foods they commonly consume daily. During the "Get to Know Your Healthy Fruits" session, the teacher prepares slices of fresh fruit, and the children are asked to sort the fruit by color and firmness before tasting each one while the teacher explains how the taste relates to the fruit's health benefits. This activity is designed to facilitate concrete sensory experiences so that children do not merely learn the concept of healthy food but also develop an early awareness of the importance of dietary variety. Additionally, teachers document the children's responses throughout the process to ensure each child receives a balanced learning experience. Through this hands-on approach, children's understanding of healthy food develops gradually yet significantly, aligning with the school's goal of preventing the risk of stunting from an early age.

In hands-on activities, teachers at KB Al Mutchtaddin also actively encourage children to participate in a simple process of preparing healthy food—specifically, making a mini salad bowl or a healthy packed lunch. During this activity, teachers demonstrate proper handwashing, show how to clean ingredients, and then allow children to select healthy components such as fruit slices, soft vegetables, or whole-grain bread to arrange according to

their own creativity. Children are then asked to arrange, combine, and observe changes in shape and taste as the ingredients are mixed. The entire process is conducted under close supervision, with teachers correcting any steps that do not meet hygiene or safety standards. This practice not only introduces children to healthy food choices but also instills basic life skills regarding selecting safe foods and using utensils properly. Observations show that this activity increases children's willingness to try new foods, broadens their preferences for healthy foods, and reduces their reliance on processed foods commonly consumed at home. This serves as the school's strategy to minimize stunting risk factors by fostering balanced nutrition habits from an early age.

In addition to food preparation activities, teachers also incorporate hands-on practices through evaluative activities designed to help children identify, compare, and choose healthier foods in their daily lives. Teachers can present a container containing pictures of healthy and unhealthy foods. Children are then asked to move, sort, and explain why they chose a particular food as a healthy option. Teachers confirm, clarify, and reinforce children's understanding using concrete explanations such as "this food makes your body strong," "this one is too sweet and causes toothaches," or "this one helps you grow tall quickly." This hands-on practice aligns with Constructivism theory, which emphasizes that children construct knowledge through direct experience and interaction with their environment. Through activities such as sorting and selecting foods, children do not merely receive information but actively construct their understanding of nutrition. This is also supported by the Experiential Learning approach, which demonstrates that experience-based learning enhances memory retention and conceptual understanding. Research by Rahmy (2020) also confirms that participatory activities are effective in fostering healthy eating behaviors from an early age. Thus, practice-based learning at KB Al Mutchtaddin has proven to have a direct impact on improving children's knowledge, healthy eating habits, and nutritional behavior as a systematic effort to prevent stunting.

3. Mini Outdoor Activities and Nutrition Education Games

The mini-outdoor activity held at Al Mutchtaddin Kindergarten was designed in a structured manner to introduce nutritional concepts through motor skills activities involving direct interaction with learning materials. Teachers set up a game course that included a jumping path, a crawling tunnel, and a ball-throwing area, with each station featuring pictures of healthy and unhealthy foods. The children were asked to stop, observe, and pick up a healthy food card before proceeding to the next station. This activity not only develops gross motor skills but also strengthens children's visual memory of nutritious foods. Teachers intensively guide, demonstrate, and clarify children's choices to ensure they understand why certain foods are selected as healthy options. It is evident that this mini-outdoor approach makes children more enthusiastic and active because they learn through movement, exploration, and direct decision-making. This activity has proven effective in improving children's ability to identify food types that support physical growth, thereby supporting stunting prevention efforts in a more practical way.

Teachers integrate educational nutrition games in the form of healthy competitive activities that allow children to identify, categorize, and evaluate foods based on their benefits. One game that is regularly played is the Healthy Plate Race, in which children run toward a basket, select food replicas, and then assemble a nutritious plate according to the teacher's

instructions. The teacher then checks the order, corrects the groupings, and provides immediate feedback so that children understand mistakes in food selection—such as placing high-sugar foods as the main dish. In another game, children shake a box containing food items, guess their types, and then match their guesses with images of nutritional benefits on the game board. This activity enhances children's ability to recognize healthy foods through a multisensory approach. This activity demonstrates that children become more confident in naming the functions of food, such as making them strong, tall, and smart. This proves that educational nutrition games concretely improve children's understanding of the food components that impact their growth.

Research findings reveal that mini-outdoor activities and nutrition-education games have a tangible impact on children's behavioral changes regarding healthy food choices at school. After participating in several sessions, teachers noted that children began showing a preference for fruits, vegetables, and protein-rich foods during shared meals. Children were also seen avoiding packaged foods when teachers demonstrated simulated food choices in the classroom. Teachers and school officials documented this progress and then shared brief reports with parents via the class group to strengthen collaboration in stunting prevention. Additionally, children became more active in asking questions, indicating that game-based educational activities successfully sparked curiosity and nutritional awareness (Priawantiputri et al., 2024). These activities also increased the children's emotional engagement because they felt they were learning while playing. Therefore, mini-outdoor activities and nutrition-education games have proven to be effective, concrete, and relevant strategies for KB Al Mutchtaddin in fostering healthy eating habits as part of stunting prevention from an early age.

4. Promoting Clean Living Habits to Support Healthy Nutrition

The practice of maintaining a clean lifestyle at Al Mutchtaddin Kindergarten is carried out through systematic and scheduled routines before, during, and after learning activities. Teachers consistently instruct, demonstrate, and guide children to wash their hands with soap at five key times: before eating, after using the restroom, after playing outside, after touching dirty objects, and before starting a group meal. Teachers set up small sinks at a height suitable for the children, then supervise the handwashing steps—from wetting the palms, scrubbing between the fingers, and rubbing the backs of the hands, to rinsing and drying hands with tissues provided by the school. This activity is carried out while the teacher explains concretely that dirty hands can carry germs that hinder healthy growth. The children are seen beginning to wash their hands independently without being asked, indicating that this habit is starting to take root. This hygiene practice is an important part of nutrition education because hand hygiene directly contributes to the prevention of infectious diseases that can hinder nutrient absorption and increase the risk of stunting.

Teachers also promote good hygiene by inspecting the cleanliness of the children's lunchboxes and eating utensils every day. Teachers check the condition of each child's lunchbox, water bottle, and spoon one by one before mealtime. If a lunchbox appears unclean or food has begun to change color, the teacher gently reminds the child, provides an explanation, and notifies the parents via a reminder note to pay attention to food sanitation. Teachers also teach children how to open their lunchboxes properly, check whether food is mixed with non-sterile objects, and sort food into what is safe to eat and what needs to be set

aside. During group mealtimes, teachers supervise, monitor eating habits, and correct unhygienic behaviors such as touching food with unwashed hands or placing spoons on the floor. These practices help children become more careful and mindful of food hygiene. This approach is considered strategic because unhygienic food conditions can trigger diarrhea or other infections directly linked to the risk of stunting (Oktaviani et al., 2021).

The practice of maintaining a clean lifestyle is also reflected in routine activities to keep the classroom and play areas clean. Teachers assign children to participate in activities such as wiping down dining tables, tidying up toys, and collecting trash in designated areas after finishing their activities. Children wipe table surfaces using child-safe wet wipes, and then teachers verify that the surfaces are truly clean before moving on to the next activity. In the outdoor play area, teachers supervise children to ensure they do not sit on wet ground, do not put dirty objects in their mouths, and provide immediate guidance if they observe behavior that could introduce germs into the body. These activities effectively foster discipline and a sense of health responsibility in children. Children begin to understand the connection between cleanliness and physical health. The short-term impact is a reduction in minor health complaints such as mild diarrhea, while the long-term impact supports children's nutritional needs because their bodies are better prepared to absorb nutrients without being hindered by infections. This activity demonstrates that a clean lifestyle is a crucial foundation in the prevention of stunting, which is implemented concretely at KB Al Mutchtaddin.

5. Market Day Activity on Fruits and Vegetables

The Market Day activity at KB Al Mutchtaddin was designed as a hands-on activity to introduce children to various fruits and vegetables through role-playing. The teacher set up the classroom as a miniature market, providing a special table for fruits, a table for vegetables, and a simple checkout counter. Before the activity begins, the teacher instructs the children to bring 5 to 10 rivu and a small shopping bag provided by the school. The children are then asked to observe, touch, and distinguish between various types of fruits and vegetables on display, including carrots, potatoes, papayas, tomatoes, apples, and spinach. This activity is conducted to help children directly recognize the colors, textures, and shapes of healthy foods. The teacher also provided concrete explanations about the benefits of each item. During the activity, the teacher noted the children's visual and verbal responses to assess their level of understanding. Field observations showed that the children appeared enthusiastic about selecting fruits and vegetables while naming their benefits—an indicator that nutrition education through the mini-market model helps children build positive associations with nutritious foods and supports the goal of preventing stunting through hands-on learning.

During Market Day, teachers also apply the concept of simple transactions to help children practice decision-making, counting, and independently selecting healthy foods. Children are tasked with purchasing at least two types of fruit and one type of vegetable using play money that has been distributed beforehand. When a child approaches the vendor's table, the teacher acting as the vendor engages in direct interaction, such as offering products, asking questions, and guiding the child to choose healthy foods. After the children select their items, the teacher calculates the total, hands them a simple receipt, and asks them to put their purchases in their bags. This process encourages children to connect shopping activities with a practical understanding of nutrition. The activities conducted so far show that children are

beginning to state the reasons for their choices. The teacher then confirms this understanding and provides immediate feedback if a child makes an inappropriate choice, such as selecting food that is not a fruit or vegetable. This educational transaction activity has proven effective in instilling nutritional awareness through social interaction, decision-making, and direct experience, which positively influences children's eating patterns (Fitria et al., 2021).

After the shopping was finished, the teacher continued the Market Day activity with a simple food preparation session using the ingredients that had been purchased. The children were asked to unpack their purchases, re-identify the names of the fruits and vegetables, and then arrange the ingredients into the provided containers. The teacher then demonstrates how to wash the fruits, peels some varieties using child-safe tools, and asks the children to taste the prepared fruit slices to experience the differences in flavor—sweet, sour, or fresh. This activity is designed to enhance sensory experiences and clearly illustrate the tangible nutritional benefits. The teacher also leads a brief discussion, encouraging the children to reflect on what they have learned. This follow-up activity deepens the children's understanding of nutrition because they not only purchase but also prepare and directly consume the foods they have studied. Positive behavioral changes are also evident when children begin asking their parents to pack fruit or vegetables for their lunch the following day. Thus, Market Day at KB Al Mutchtaddin is not merely a role-playing activity but a concrete strategy that directly influences increased nutritional awareness as a preventive measure against stunting from an early age.

6. School-Provided Supplementary Meals (PMT)

The Supplementary Feeding Program (PMT) at Al Mutchtaddin Kindergarten is implemented systematically, taking into account the nutritional needs of young children. Every week, teachers plan the PMT menu, take inventory of food ingredients, and ensure the nutritional composition meets healthy eating standards for kindergarteners. Common PMT menu items include mung bean porridge, vegetable soup, boiled bananas, fresh fruit slices, and egg-filled bread. Before distributing the PMT, teachers first check the cleanliness of the containers, record the number of children present, and prepare individual plates to ensure even food distribution. During distribution, teachers arrange the children's seating positions, then serve the food one by one while explaining the nutritional benefits of each item. Teachers explain that green beans help the body grow quickly and that papaya aids digestion. Field observations show that children respond positively, as evidenced by their enthusiasm for the PMT menu, including children who previously were picky eaters. This activity provides children with a hands-on experience of consuming nutritious food that supports the fulfillment of nutritional needs, making the PMT an important component in stunting prevention. This supplementary feeding program is separate from the Free Nutritious Meals (MBG) program, a central government initiative that is also routinely provided to students.

The implementation of PMT does not stop at simply providing food; it also involves teachers monitoring the children's consumption. During this activity, teachers observe how the children eat, record the portions consumed, and identify children who have difficulty eating or tend to avoid certain types of food. Any child who does not finish their meal is approached, and the teacher offers verbal encouragement such as "Try two more spoonfuls" or "This will make your body strong for playing." If a child refuses a particular food, the teacher adjusts the approach by cutting the food into smaller pieces or mixing it with foods the child prefers.

Additionally, the teacher documents consumption results in a daily assessment log as part of nutritional development evaluation (Rahmuniyati, 2021). Observations indicate that most children show increased appetite after regularly participating in the PMT program. Children who initially struggled to eat vegetables began showing a willingness to try them after becoming accustomed to seeing their peers eat them together. This monitoring process serves as evidence that the PMT is not merely food provision but an educational intervention consistently implemented to support children's nutritional adequacy.

The PMT program at Al Mutchtaddin Kindergarten has had a significant impact on children's eating behaviors as well as collaboration between teachers and parents. After several weeks of implementing the PMT program, teachers noted changes in the children's habits: the children began asking for fruit in their lunchboxes, showed interest in foods they previously disliked, and became more independent in finishing their meals during mealtime. Teachers then communicated these developments to parents through the class group chat while also sending photos documenting the PMT activities and the menus provided. This information made it easier for parents to align their home menus with the healthy eating habits being cultivated at school. In some cases, parents even reported an increase in their children's appetite at home after regularly participating in the PMT. This program also helps reduce the issue of children frequently skipping breakfast or consuming only instant foods before leaving for school. Thus, the PMT serves as a direct nutritional intervention that not only meets children's daily nutritional needs but also changes eating behaviors, promotes healthy eating habits, and supports the achievement of the primary goal: preventing stunting through integrated nutrition strengthening at school.

Based on the activities described in the findings above, it is evident that nutrition education at Al Mutchtaddin Preschool is considered highly important and has a significant impact on the prevention of stunting among young children. This is illustrated in the table below, which details the activities and impacts of nutrition education as a strategy for preventing stunting among young children at Al Mutchtaddin Preschool. (1) Children's increased knowledge can be seen in their ability to identify, name, and categorize healthy and unhealthy foods. (2) Behavioral changes are evident in their habit of choosing healthier snacks and their refusal to eat less nutritious foods. (3) Teacher documentation, such as anecdotal notes and daily assessment rubrics, serves as evidence of systematic progress. Additionally, feedback from parents regarding changes in children's eating habits at home is also a key indicator. This is illustrated in the table below, which outlines the effectiveness and impact of nutrition education as a strategy for preventing stunting among young children at Al Mutchtaddin Preschool.

Table 1. Nutrition Education Activities at Al Mutchtaddin Family Planning Clinic

Nutrition Education Activities	Effectiveness of Implementation	The Impact Generated	Achievements
Integrating Nutrition Content into Daily Learning Activities	This approach is consistently implemented through storytelling, guided	Children mention healthy foods more often in conversation and are beginning to	Children can identify at least 5 types of healthy foods and explain

	discussions, and visual presentations on healthy foods; teachers actively link daily themes to nutritional concepts.	understand why it's important to eat nutritious meals.	the basic benefits of each.
Hands-on Activities Through Practice-Based Learning	It is very effective because children are directly involved in preparing and tasting the food; this triggers a strong sensory experience.	Children are more willing to try new foods, especially fruits and vegetables they previously avoided.	There has been an increase in appetite as well as the ability to distinguish between healthy and unhealthy foods based on their shape and texture.
Mini Outdoor Activities & Nutritional Education Games	Effectively combines gross motor skills and nutrition education; children learn while moving, helping them grasp concepts more quickly.	Children are more enthusiastic about learning about healthy foods through games and physical activities.	Children are able to independently select pictures of healthy foods and explain their choices.
Promoting Clean Living Habits to Support Healthy Nutrition	It is effective because it is done every day as part of a structured routine: washing hands, keeping eating utensils clean, and maintaining a clean environment.	A decline in unhygienic behavior and an increase in hygiene awareness as part of maintaining physical health.	Children are able to wash their hands using the 7-step method, keep their food clean, and avoid unhygienic behavior.
Market Day Event on Fruits & Vegetables	Effectively introduces healthy food options through a shopping simulation; children learn to identify, select, and prepare simple ingredients.	Children begin to learn about many types of fruits and vegetables and express their preferences based on their understanding of their benefits.	Children are able to name the benefits of specific fruits and vegetables and demonstrate changes in eating habits, such as bringing a healthy lunch.
School-Provided Supplementary Meals (PMT)	It is highly effective as a direct nutritional intervention; it is carried out routinely using a standardized	Increased appetite, reduced resistance to vegetables, and increased energy levels in children	The child is able to finish their PMT portion, shows increased interest in eating, and has

	menu and monitoring of consumption.	during school activities.		developed the habit of eating nutritious foods.

The table above shows that the integration of nutrition content into daily learning activities at Al Mutchtaddin Kindergarten is carried out in a structured and consistent manner, so that students not only understand nutritional concepts theoretically but are also able to relate them to their daily activities. Teachers actively introduce healthy food options through picture recognition, contextual stories, and simple assignments such as grouping healthy and unhealthy foods. In each learning theme, teachers incorporate nutrition messages through concrete activities; for example, when learning about colors, children are asked to identify the colors of fruits and vegetables, or during the human body theme, children learn about the role of food in supporting growth. The implementation of this integration has proven effective, as children demonstrate improved ability to recognize healthy food types, understand the benefits of nutritious food, and begin to explain the importance of consuming fruits and vegetables. A tangible impact observed in the field is a change in children's eating behavior, as they begin to choose healthier foods when bringing lunch to school. Teachers also noted that students became more enthusiastic about participating in activities related to healthy eating. These achievements demonstrate that integrating nutrition education effectively establishes a strong foundation for developing healthy eating habits from an early age.

Hands-on learning activities are a nutrition education strategy that provides children with direct experience, enabling them not only to understand the material but also to apply it in real life. At Al Mutchtaddin Kindergarten, students are encouraged to participate in activities such as washing fruits, preparing simple healthy snacks, and creating daily menus using food replicas. Activities like these are designed to give children the opportunity to handle, observe, and explore food ingredients firsthand. Hands-on methods have proven highly effective because young children learn most effectively through concrete experiences. Teachers note that students become more confident when practicing how to wash food, cut fruit with safe tools, and select healthy foods to place on a balanced-diet plate created in the form of a game. The impact is evident through improvements in fine motor skills, the ability to make healthy decisions, and children's understanding of the steps involved in preparing clean and safe food. Children's involvement in the practical process makes them more responsible for the food choices they consume. The outcomes of this activity demonstrate that hands-on experience is a crucial approach in fostering healthy and proper eating habits in young children.

The mini-outdoor activities and nutrition-education games held at Al Mutchtaddin Kindergarten were designed to create a fun learning experience while still maintaining clear educational objectives. Through games such as a food pyramid building contest, a fruit-carrying race, or a fruit and vegetable taste-guessing game, children were encouraged to understand the principles of healthy nutrition while being physically active. This method is effective because it aligns with the learning characteristics of young children, who require physical activity and direct interaction. Teachers noted that children seem to retain nutritional messages more quickly when the information is conveyed through competitive and enjoyable games. The impact of these activities includes increased enthusiasm for learning, improved collaboration skills, and active engagement of all students in understanding food categories. Educational

games help reinforce children's memory because information received through enjoyable experiences tends to be easier to recall. The outcomes of this activity include improved ability to categorize healthy foods, recognize the functions of fruits and vegetables, and demonstrate a higher interest in nutritious foods.

Fostering clean living habits is an integral part of nutrition education because personal and environmental hygiene are directly linked to children's nutritional status and health. At KB Al Mutchtaddin, these habits are instilled through daily routines such as handwashing before meals, keeping eating utensils clean, and ensuring children dispose of trash properly. Teachers actively supervise, set examples, and reinforce these behaviors every day. The effectiveness of this habit-forming program is evident in the students' behavioral changes: they are increasingly disciplined in washing their hands using the correct technique, avoid eating with dirty hands or at a dirty table, and understand the importance of maintaining personal hygiene to prevent illnesses that impact nutrition. The impact is observable through a decrease in minor complaints such as stomachaches, loss of appetite, or mild infections, which previously occurred quite frequently among the children. Additionally, the children demonstrate the ability to recall hygiene steps without needing constant reminders. The outcomes of this initiative indicate that the habit of maintaining cleanliness not only improves children's health but also serves as a crucial foundation in preventing stunting, as a clean and healthy body absorbs nutrients from consumed food more effectively.

The school's Market Day and Supplementary Feeding Program (PMT) are two key, complementary strategies for improving children's nutritional quality at Al Mutchtaddin Kindergarten. Market Day serves as a hands-on educational tool for learning about fruits and vegetables, where students are encouraged to recognize their shapes, colors, textures, and benefits firsthand. Children are also involved in simple transactions, selecting healthy fruits and directly tasting various types of vegetables and fruits. Meanwhile, the school's PMT program is conducted regularly by providing nutritious supplementary meals such as sliced fruit, fruit pudding, hard-boiled eggs, or mung bean porridge prepared to specific hygiene standards. The effectiveness of this activity is very high because children consistently receive nutrition tailored to their needs while gaining sensory experiences that reinforce their preferences for healthy foods. The impact is evident in improved appetite, an increased variety of foods children enjoy, and enhanced parental knowledge about nutritious food choices through observation of Market Day activities. The achievements of this activity include improved children's nutritional status and the school's success in fostering collaboration among teachers, children, and parents in the ongoing effort to prevent stunting.

CONCLUSION

Based on the research findings described above, it can be concluded that the implementation of nutrition education at Al Muchtaddin Kindergarten has been systematic, relevant, and aligned with the developmental needs of young children. The research objective to explore the types of nutrition education activities was met through findings of diverse activities such as integrated thematic learning, hands-on activities, mini-outdoor excursions, hygiene practices, Market Day, and the provision of Supplementary Food (PMT). All these activities were designed to be contextually relevant, enjoyable, and to encourage children's active engagement in the learning process. The evaluation of program implementation was

evident through documentation of children's development via anecdotal notes, daily assessment rubrics, and feedback from parents. This evaluation indicated an increase in children's understanding and engagement in selecting and consuming healthy foods. Meanwhile, the effectiveness of the nutrition education strategies is reflected in tangible changes in children's behavior, including the habit of choosing healthy foods, maintaining hygiene, and increased nutritional awareness in daily life. Thus, this program has proven to be not only informative but also transformative and makes a significant contribution to efforts to prevent stunting from an early age.

Based on these findings, it is recommended that the nutrition education model implemented at KB Al Muchtaddin be developed into a structured, school-based practical guide that is easy to replicate. Other schools are advised to adopt an integrated thematic approach, adapting it to the sociocultural characteristics of their respective regions. Additionally, there is a need to strengthen teachers' capacity through nutrition education training and the provision of innovative learning materials. Parental involvement also needs to be formalized through regular educational programs and monitoring of children's dietary patterns at home. Local governments are expected to provide support through policies, funding, and sustainable PMT programs so that stunting prevention interventions can be implemented more effectively and have a broader impact.

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