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Nutritional Knowledge Education for Mothers and It's Impact on the Growth and Development of Toddlers

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Abstract: This study aims to analyse and synthesise results from previously conducted studies on education, knowledge, and nutrition for Mothers, as well as their impact on the growth and development of toddlers. Research This using a qualitative literature review with secondary data from articles on scientific research related to education, nutrition, motherhood, and growth in toddlers, obtained through database searches such as Google Scholar, PubMed, ScienceDirect, and DOAJ. Analysis done in a way that is thematic and narrative to synthesize the form of education, its impact on growth and development of toddlers, as well as the contextual factors that influence it. Research results show that nutrition education for mothers is delivered through various approaches, including counselling, education groups, and digital media. The studies reviewed use qualitative, quantitative, and mixed-methods approaches, with instruments in the form of questionnaires on nutrition knowledge, anthropometry, and screening tools for toddlers. In general, maternal education has a positive impact on toddlers' growth and development, as indicated by improvements in nutritional status, increased weight and height, as well as motor, cognitive, language, and social-emotional development. The effectiveness of the intervention is influenced by factors such as the mother's education, family support, access to health services, and social-cultural context, which serve as a basis for further program development and research.

Keywords: Education, Mothers, Nutritional Knowledge, The Growth, Toddlers

Introduction

Nutrition education for mothers plays a vital role in improving long-term child health outcomes, maternal well-being, effective healthcare delivery, and the success of interventions within diverse cultural contexts (Prasetyo et al, 2023) (Utami et al, 2025). Research consistently shows that mothers who receive nutrition education have improved knowledge and practices related to child feeding, which contributes to better nutritional status in children, including higher birth weights, reduced malnutrition, and lower risks of stunting, particularly in low- and middle-income countries. Beyond physical health, maternal nutrition education has been associated with positive cognitive and developmental outcomes, as children of educated mothers tend to demonstrate better cognitive performance and sustained developmental benefits over time. In addition, nutrition education positively influences maternal mental health by reducing psychological distress, increasing confidence in feeding and caregiving practices, and fostering empowerment through peer interaction and social support in group-based programs (Kusumarini et al, 2024).

From a systems perspective, integrating nutrition education into existing healthcare services—such as routine maternal and child health visits—has proven feasible and effective, especially when healthcare workers and community health agents are trained to deliver contextually relevant and practical guidance, including cooking demonstrations and hands-on activities. The effectiveness of maternal nutrition education is further shaped by cultural context, as beliefs, traditions, and social norms strongly influence feeding behaviours) (Therefore, culturally sensitive programs that respect local practices while addressing misconceptions and barriers tend to achieve greater acceptance and impact (Rainford et al, 2024) (Yorke et al, 2023). Overall, nutrition education for mothers is a comprehensive strategy that supports healthier children, strengthens maternal mental well-being, enhances the responsiveness of the healthcare system, and promotes sustainable health improvements within families and communities.

Nutrition education is a crucial component of public health that aims to improve dietary behaviours and overall health outcomes across the life course, particularly among children and adolescents, through a combination of educational strategies and supportive environments. It encompasses motivational components that enhance awareness, beliefs, and attitudes toward healthy eating through effective communication, action components that encourage goal setting and self-regulation skills to translate knowledge into practice, and environmental components that involve collaboration with policymakers and community stakeholders to create settings—such as schools—that facilitate access to healthy foods and support healthier choices (Brink et al, 2022) (Wijesinghe et al, 2025). Evidence shows that nutrition education significantly influences dietary behaviours among children and adolescents, especially through school-based, interactive interventions such as cooking classes and experiential learning, which enhance nutritional knowledge and promote healthier food choices.

Importantly, dietary habits formed during adolescence often persist into adulthood, making this period a critical target for intervention. Studies indicate that effective nutrition education increases consumption of fruits, vegetables, and dairy products and reduces intake of fast food and sugary snacks. The effectiveness of these programs is further enhanced by the use of technology and digital platforms, including mobile applications, social media, and online resources, which provide interactive, engaging content that reinforces nutritional messages and improves knowledge and behaviours. Additionally, cultural factors play a vital role in the success of nutrition education, as culturally sensitive programs that incorporate local food practices, family dynamics, and community influences tend to achieve greater engagement and impact. Overall, nutrition education represents a multifaceted and increasingly important public health strategy that promotes healthier dietary behaviours, supported by motivational, action-oriented, environmental, technological, and cultural approaches, and that requires continued research and policy support to address rising obesity and diet-related diseases across diverse populations. This study aims to analyse and synthesise results from previously conducted studies on education, knowledge, and nutrition for Mothers, as well as their impact on the growth and development of toddlers.

Methodology

This study uses a qualitative literature review design to analyse and synthesise in depth various findings from previous studies on education, knowledge, and nutrition for mothers, as well as their impact on the growth and development of toddlers (Alehegn et al, 2021) (Morales et al, 2023). The chosen approach is qualitative because it allows researchers to understand patterns, meanings, and contexts from published research results, especially those related to interventions in education and nutrition, changes in mothers' knowledge and behaviour, and the implications for raising a healthy child. The data used in this study are secondary data sourced from scientific articles, both national and international, obtained through database searches such as Google Scholar, PubMed, ScienceDirect, and DOAJ. The search process literature done in a way systematic use related keywords with education knowledge nutrition mother, growth toddlers, and development child, then to be continued with the selection process based on criteria inclusion, including articles that discuss education or intervention knowledge nutrition for mother, studying the impact to growth and/ or development toddlers, available in form text complete, and published in period time certain.

Selected articles furthermore analyzed use analysis thematic qualitative, with method reading and studying every study in a deep way to identify main, such as types and strategies of education nutrition provided, changes knowledge, attitudes, and behaviour of mothers, impact on indicator growth toddlers, as well as its influence on motor, cognitive, language, and social development. Themes were then encoded, grouped, and synthesised into a narrative to provide a comprehensive description of the connections among education, knowledge, nutrition, motherhood, and growing flowers in toddlers. Discussion results are presented in a narrative-interpretive way, with comparisons and integrations of findings across studies, as well as linking them to social, cultural, and educational contexts that influence the effectiveness of education and nutrition. In addition, the discussion is also directed to explain the mechanism by which improved knowledge of nutrition can contribute to improved growth and development in toddlers, interpreting findings based on theories of nutrition, education, and behaviour health, and identifying research gaps that can serve as a basis for the development of educational programs in nutrition and research.

Result and Discussion

Nutrition education for mothers plays a crucial role in shaping the growth and development of toddlers. This summary explores the impacts of such education on dietary choices, feeding practices, cognitive development, community attitudes, and cultural influences.

Table 1. Nutrition education

Aspect Influence	Main Focus	Key Findings	Examples / Indicators	Source
Nutritional Status and Growth of Toddlers	Nutritional status	Mothers' knowledge of nutrition correlated positively with toddlers' nutritional status.	Appropriate body weight for age increase	(Dapuas & Uktutias, 2019) (Bhatti et al, 2020),

Aspect Influence	Main Focus	Key Findings	Examples / Indicators	Source
	Growth physique	Nutrition education improves anthropometric parameters in children	Weight, height, and head circumference increase) (education, food, and local impact are significant	(Gumelar & Tangpukdee, 2022),
Child Development	Development of cognitive and motor	Intervention in nutrition education, accompanied by stimulation and hygiene, supports children's development.	Cognitive, language, and motor scores improved (Uganda study)	(Muhoozi et al, 2018)
	Maternal mental health	Nutrition education lowers symptoms of depression in mothers	Declining depression, the mother relates to improvement in cognitive and language development in the child	(Atukunda et al, 2019)
Change Behavior Feeding	Practice giving Eat	Nutrition education increases knowledge and practice of providing complementary foods.	Mother is more appropriate to feed the breastfeeding companions.	(Kusumarini et al, 2024)
	Class cook	The cooking class program increases the mother's knowledge and interest.	Improvement of interest in cooking nutritious food for stunting prevention	(Rusmimpong et al, 2022)
Effective Education Methods	Video media	More video media is effective compared to the method without video	Improvement in the knowledge of the mother is taller	(Georgieff, 2015)
	Approach family	Education-based families are more likely to intend to meet children's nutritional needs.	Optimizing nutrition in 1000 HPK for stunting prevention	(Setia et al, 2020)
Recommendation	Intervention sustainable	Nutrition education needs to be done in a sustainable and multimodal way	Video, class cooking, counseling, direct	(Has et al, 2022)
	Approach holistic	Education must cover nutrition, stimulation, hygiene, and the mother's mental health.	Support the growing flower child in a comprehensive way	(Has et al, 2022)

1. Type, shape, and approach of interventions in education, knowledge, and nutrition for mothers used in various studies.

Nutrition education interventions for mothers demonstrate substantial diversity in their types, forms, and approaches, with effectiveness strongly influenced by demographic characteristics such as age, education level, socio-economic status, and geographical context (Pasaribu et al, 2025) (Prasetyo et al, 2023). Recent studies indicate that structured

educational programs delivered through community support groups can improve maternal knowledge, attitudes, and feeding practices. However, their impact may be constrained by financial and logistical barriers. Social and behaviour change interventions have also shown positive effects on maternal and child nutrition practices, particularly among lower-income groups, with outcomes closely linked to the level of participant engagement. Innovative approaches, such as multimedia-based learning and discussion-oriented methods, have been found to enhance cognitive outcomes and learning effectiveness, suggesting that interactive, technology-supported media can strengthen nutrition education (Wiji et al, 2023). In addition, interventions that incorporate home visits and community mobilisation strategies are effective in improving maternal knowledge and practices by providing personalised, context-specific support.

In terms of delivery, nutrition education is implemented through various formats, including in-person workshops for direct interaction, online platforms for flexibility and accessibility, and community-based programs that can be adapted to local needs and cultural contexts. Many of these interventions are grounded in behaviour change theories, such as Social Cognitive Theory and the Health Action Process Approach, which help address the psychological, social, and environmental determinants of dietary behaviour. The effectiveness of interventions is further enhanced when educational content is culturally tailored and when family members, including fathers and grandparents, are actively involved in supporting maternal nutrition practices. However, outcomes vary across demographic groups: younger, more educated mothers often show higher engagement and better outcomes, while mothers from lower socio-economic backgrounds may require more intensive, multi-platform support. Moreover, geographical differences, particularly between rural and urban settings, influence the feasibility and impact of interventions, as they vary in infrastructure, resources, and cultural norms. Overall, understanding the interplay between intervention design, delivery methods, demographic factors, and contextual conditions is essential for developing effective nutrition education programs that improve maternal and child nutrition outcomes across diverse populations.

2. Various methods and instruments are used to evaluate knowledge, nutrition, and the growth and development of mothers and toddlers.

Assessing maternal nutrition knowledge and its relationship with the growth and development of toddlers involves a range of research methods and instruments, including qualitative, quantitative, and mixed-methods approaches, each contributing uniquely to a comprehensive understanding of maternal attitudes and behaviours and their influence on child nutrition outcomes (Razzazi et al, 2024). Qualitative methods, such as in-depth interviews and focus group discussions, are particularly effective for exploring mothers' beliefs, perceptions, and practices related to nutrition, as they provide rich, contextual insights into the sociocultural and emotional factors that shape feeding decisions, including breastfeeding and complementary feeding. Observational qualitative studies further complement this understanding by capturing real-life feeding behaviours and environmental conditions, helping identify practical barriers such as time constraints, limited access to health information, and insufficient support from health professionals.

Quantitative approaches, on the other hand, rely heavily on surveys and structured questionnaires, often using validated instruments to measure maternal nutrition knowledge with high reliability and validity and to examine its association with measurable toddler outcomes.

Cross-sectional studies are commonly used to examine the relationships among maternal education, nutritional knowledge, and child growth indicators, such as stunting, highlighting the significant role of maternal knowledge in determining children's nutritional status. Mixed-methods approaches integrate qualitative insights with quantitative data to provide a more holistic perspective, enabling researchers to combine statistical associations with contextual explanations of food availability, cultural beliefs, and caregiving practices (Alehegn et al, 2021). Observational components within these studies are particularly important for evaluating toddler growth and development through specific indicators, including weight, height, head circumference, and developmental milestones, which are closely linked to maternal feeding practices and nutrition literacy (Rahman et al, 2008). Additionally, dietary diversity and dietary quality are frequently assessed as key outcomes influenced by maternal nutrition knowledge, with evidence showing that higher maternal nutrition literacy is associated with more diverse and nutritious diets for toddlers. Overall, integrating qualitative, quantitative, and mixed-methods approaches offers a robust, nuanced framework for understanding how maternal nutrition knowledge shapes feeding practices and supports optimal growth and development in early childhood.

3. Impact education, knowledge, nutrition, and motherhood on the growth and development of toddlers

Maternal nutrition education plays a fundamental role in shaping mothers' dietary knowledge and feeding behaviours, which, in turn, significantly impact toddlers' growth and development (Georgieff, 2015) (Sachithananthan et al, 2012). Through nutrition education, mothers gain a better understanding of their children's nutritional needs, enabling them to make healthier food choices, increase intake of essential nutrients such as energy and protein, and adopt more appropriate feeding practices, supported by stronger beliefs and self-efficacy. These behavioural changes are closely associated with improved growth outcomes in toddlers, as maternal nutrition education has been shown to positively influence children's nutritional status, including weight-for-age and height-for-age indicators, while also helping prevent childhood obesity by promoting healthier dietary patterns and consistent monitoring of children's food intake.

Beyond physical growth, maternal nutrition education also supports cognitive development and broader health outcomes, as adequate maternal nutrition and nutrition knowledge during pregnancy and early childhood are linked to better cognitive performance and reduced risks of developmental delays and long-term health problems, particularly in low- and middle-income settings (Das & Ghosh, 2020) (Mammadova et al, 2025). However, the effectiveness of maternal nutrition education is often mediated by socio-economic factors, as higher levels of maternal education and household income are associated with better nutritional practices and more favourable growth and development outcomes in toddlers. Overall, maternal nutrition education is a powerful,

multidimensional intervention that influences dietary choices, growth, cognitive development, and overall health in early childhood, underscoring the importance of equipping mothers with appropriate knowledge and support, while accounting for socio-economic contexts to optimize child health and development outcomes.

4. Supporting and inhibiting factors, effectiveness, education, nutrition.

Maternal nutrition education is essential for improving health outcomes for both mothers and their children. Yet, its effectiveness is shaped by a range of supporting and inhibiting factors that must be carefully addressed (Kakwangire et al, 2024). Programs tend to be more successful when they actively engage communities, as community participation in the design and implementation of nutrition education fosters cultural relevance, social support, and stronger ownership, while peer-based initiatives such as mothers' support groups further enhance knowledge sharing and positive nutrition practices (Razzazi et al, 2024) (Utami et al, 2025). Socio-economic conditions also play a critical role, as economic stability is closely linked to better maternal nutrition knowledge and child health outcomes, underscoring the need for interventions that recognize and address financial barriers. At the same time, cultural sensitivity is equally important to ensure that education programs respect local beliefs and food practices that may otherwise hinder healthy behaviours. Psychological factors, particularly motivation and self-efficacy, are key enablers of behaviour change, as mothers who feel confident and empowered are more likely to adopt and sustain healthy dietary practices.

Conversely, several inhibiting factors limit program effectiveness, including financial constraints, transportation difficulties, time limitations, and a persistent gap between knowledge and practice driven by economic pressures and cultural norms. In response, practical strategies for strengthening maternal nutrition education include developing tailored, personalized interventions rather than uniform approaches) (integrating nutrition education with broader maternal and child health services) (enhancing educators' and health workers' capacity and cultural competence) (and implementing robust monitoring and evaluation systems to guide continuous improvement. Additionally, policy advocacy to improve food security and access to healthcare is necessary to address structural barriers that extend beyond individual behaviour. Overall, addressing the complex interplay among community, economic, psychological, and systemic factors is critical to optimizing maternal nutrition education programs and achieving sustainable improvements in maternal and child health.

Conclusion

Based on the results of research that has been carried out using the literature study method, researchers found that knowledge, and nutrition for mothers have a significant and multidimensional impact on toddlers' growth and development. Improvement in knowledge of nutrition, proven to contribute to improved choice of food and fulfilment of nutritional needs in toddlers, as reflected in the increase in growth indicators like appropriate weight and height for age. In addition to influencing physical growth, maternal knowledge and nutrition also play an important role in supporting cognitive development

in toddlers by providing adequate intake of essential nutrients during pregnancy and early life. Nutrition education effectiveness is strengthened by support from a supportive community. The researcher provides recommendations forMother applies knowledge gained in practice daily and overcomes various obstacles, including social and economic factors. On the other hand, culture has a strong influence on success in education and nutrition interventions, so that understanding and integrating local culture, as well as its practices, become key in designing effective programs. The researcher provides recommendations for comprehensive, contextually grounded, and community-supported education, nutrition, and motherhood are important strategies to promote optimal growth and development in toddlers.

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