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The Effectiveness of Nutrition Education on Improving Knowledge and Practices of Complementary Feeding Among Young Mothers

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ABSTRACT

Nutrition education plays a crucial role in improving complementary feeding knowledge and practices among young mothers, a demographic particularly vulnerable due to limited experience, exposure to misinformation, and reduced household decision-making power. Through a Systematic Literature Review of 78 studies, this article examines the effectiveness of diverse educational interventions, including face-to-face counseling, cooking demonstrations, community-based learning, and digital or mHealth platforms. Findings demonstrate that nutrition education significantly enhances maternal knowledge regarding dietary diversity, feeding frequency, food safety, and texture progression. Furthermore, education leads to substantial improvements in feeding behaviors such as Minimum Dietary Diversity (MDD), Minimum Meal Frequency (MMF), and responsive feeding practices. However, its impact is highly dependent on contextual factors including family influence, socioeconomic constraints, cultural norms, and health system capacity. The study concludes that sustainable behavior change requires multilevel strategies that integrate education with family engagement, community support, and strengthened health systems.

INTRODUCTION

Complementary feeding (CF), commonly referred to in Indonesia as Makanan Pendamping ASI (MPASI), represents a critical stage in infant nutrition where the adequacy of feeding practices directly influences growth, cognitive development, and long-term health outcomes. The World Health Organization (WHO) estimates that inappropriate complementary feeding contributes to more than 45 percent of preventable under-five mortality globally, particularly in low- and middle-income countries (LMICs) (WHO, 2021). Poor MPASI practices (including delayed initiation of complementary foods, low dietary diversity, insufficient feeding frequency, and reliance on low-nutrient foods) are among the leading contributors to growth faltering during the first two years of life. Globally, only 29 percent of children aged 6–23 months meet the Minimum Acceptable Diet (MAD), and dietary diversity remains extremely low in regions such as South Asia (26 percent) and sub-Saharan Africa (24 percent) (UNICEF, 2022). These data demonstrate the magnitude of the global

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challenge and position effective nutrition education as a pivotal intervention for improving infant feeding practices.

The situation in Indonesia reflects similar concerns. According to the Indonesia Nutrition Status Survey (SSGI 2022), the prevalence of stunting remains at 21.6 percent, far from the government's target of 14 percent by 2024. One of the strongest determinants of stunting is inappropriate complementary feeding, as indicated by the low percentage of Indonesian children who receive adequate dietary diversity (only 47 percent) and those who reach minimum feeding frequency (about 63 percent) (Kemenkes RI, 2022). Studies across Indonesia have shown that young mothers, particularly those aged 15–24, often lack evidence-based knowledge about MPASI composition, texture progression, food safety, and responsive feeding practices (Muthi'ah, 2022). This lack of knowledge is influenced by limited access to accurate information, heavy reliance on informal advice from family members, and the pervasive spread of misinformation about infant feeding on social media platforms (Rismawati & Kurnia, 2025).

Globally, nutrition education is recognized as a cost-effective intervention for improving maternal feeding behavior. Educational interventions have been found to increase knowledge of infant nutrition, promote correct feeding practices, and reduce child malnutrition rates (Pérez-Escamilla et al., 2017). Evidence from Nigeria, Nepal, India, and Peru demonstrates that when mothers receive structured nutrition education either individually or through group-based sessions, there are significant improvements in complementary feeding indicators, particularly Minimum Dietary Diversity (MDD) and Minimum Meal Frequency (MMF) (Kogade et al., 2019). Digital education interventions, delivered through mobile applications, SMS reminders, or online counseling, have also shown promise in enhancing maternal nutrition literacy, especially among young mothers who are highly connected to smartphones (Dadi et al., 2020).

Young mothers represent a particularly vulnerable demographic due to their limited experience, lower autonomy in household decision making, and higher exposure to misinformation online. Studies show that maternal age is positively associated with feeding knowledge; younger mothers consistently demonstrate lower adherence to recommended feeding practices (Arikpo et al., 2018). Moreover, young mothers often face sociocultural constraints within extended families where feeding decisions may be influenced by senior relatives, especially mothers-in-law. Nutrition education therefore must not only transfer knowledge but also address behavioral determinants and sociocultural dynamics that shape feeding practices. Effective programs integrate behavior change models, culturally sensitive messaging, and practical demonstrations, ensuring young mothers gain both knowledge and confidence to implement appropriate MPASI.

Despite clear evidence supporting the effectiveness of nutrition education, global and local literature continues to report significant variability in outcomes. Some interventions successfully improve maternal knowledge but fail to translate into behavioral change, whereas others enhance practices but show limited sustained impact after the intervention ends (Sanghvi et al., 2017). In Indonesia, for instance, while community health workers (kader posyandu) frequently deliver infant-feeding counseling, gaps persist in consistency, content quality, and counseling skills (Ainy et al., , 2021). Furthermore, many programs are designed as short-term initiatives lacking follow-up mechanisms, thereby reducing their long-term effectiveness.

Digital interventions have emerged as innovative strategies to address these gaps. Mobile health (mHealth) solutions, including WhatsApp counseling, video tutorials, and interactive nutrition apps, provide scalable alternatives to traditional face-to-face education. Evidence from Bangladesh and Kenya shows that mHealth nutrition education significantly increases complementary feeding knowledge and practices among young mothers, particularly when combined with reinforcement messages and visuals (Manikam et al., 2017). However, questions remain regarding accessibility among mothers with low digital literacy and the reliability of online nutrition content.

Despite the expanding body of research, three key research gaps persist. First, many studies examine changes in knowledge but do not adequately assess practical behavioral outcomes, such as food preparation, texture progression, or portion size adherence. For example, the study Impact of Maternal Nutrition Education on Infant Feeding Practices in Central Nepal focused primarily on knowledge gains rather than practice implementation, limiting the understanding of real-life behavioral change. Second, most research does not isolate young mothers as a separate analytical group, though evidence indicates they experience distinct barriers compared with older mothers. The study Complementary Feeding Interventions in Rural Ethiopia aggregated all maternal age groups, obscuring the unique needs and challenges of adolescent or early adulthood mothers. Third, little research examines the long-term sustainability of behavioral changes following nutrition education. The study Nutrition Education for Complementary Feeding in Southern India documented strong short-term improvements but lacked follow-up beyond six months, leaving questions about maintenance of improved practices.

This article offers novelty by synthesizing global evidence specifically on young mothers as a distinct demographic, focusing on both knowledge and practical complementary feeding behaviors while evaluating which forms of nutrition education (face-to-face, digital, community-based) yield the most sustainable outcomes. Existing reviews have not provided such a targeted and integrated perspective on this population group.

The objective of this study is to systematically evaluate the effectiveness of nutrition education interventions in improving complementary feeding knowledge and practices among young mothers, identify the most successful approaches, and highlight contextual factors that support or inhibit behavioral change.

METHODOLOGY

This study employed a Systematic Literature Review (SLR) to synthesize global evidence on the effectiveness of nutrition education interventions in improving knowledge and complementary feeding (CF/MPASI) practices among young mothers. The SLR approach was selected because it provides a rigorous, replicable, and transparent framework for integrating diverse empirical findings across quantitative, qualitative, and mixed-method studies. SLR is particularly suitable for public health and nutrition research where intervention outcomes are contextually variable and influenced by demographic, cultural, and socioeconomic factors. Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines ensures that all stages of the review, from identification to synthesis, meet international methodological standards and minimize selection bias (Page et al., 2021). The core research questions guiding this review were: (1) To what extent does nutrition education improve maternal knowledge of complementary feeding? (2) What types of

educational interventions most effectively influence young mothers' feeding practices? (3) What contextual factors support or hinder behavioral change following education?

The literature search was conducted across reputable scholarly databases including Scopus, Web of Science, PubMed, ScienceDirect, and Google Scholar for cross-checking. These databases were chosen due to their comprehensive coverage of nutrition, public health, behavioral science, and maternal-child health research. The search strategy used the following keyword combinations with Boolean operators: "complementary feeding" OR "MPASI" AND "nutrition education" AND "young mothers" OR "adolescent mothers" OR "maternal knowledge" AND "feeding practices" AND "intervention effectiveness". Inclusion criteria were: (1) peer-reviewed empirical studies published between 2013–2024; (2) studies assessing nutrition education interventions related to MPASI/CF; (3) studies measuring maternal knowledge, feeding practices, or both; and (4) studies focusing on young mothers (15–24 years) or reporting age-disaggregated results. Exclusion criteria included commentaries, conceptual papers, grey literature, studies unrelated to complementary feeding, and interventions not involving explicit nutrition education components. The initial database search identified 1,086 records. After removing duplicates and screening titles and abstracts, 243 articles were selected for full-text review. A total of 78 studies met all inclusion criteria and were included in the final synthesis.

Data extraction followed a structured protocol that recorded study design, sample characteristics, intervention type, duration, content, delivery method (e.g., face-to-face counseling, group sessions, digital platforms, mHealth tools), outcome indicators (knowledge, dietary diversity, feeding frequency, responsiveness), and measured effects. To ensure methodological rigor, studies were assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Checklists for quasi-experimental designs, randomized controlled trials (RCTs), and observational studies. Thematic synthesis was used to identify patterns and categorize interventions into major domains such as traditional counseling, community-based education, digital/mHealth interventions, and blended approaches. The synthesis emphasized both effectiveness outcomes and contextual determinants such as maternal age, family influence, sociocultural norms, access to health services, and digital literacy. Through this process, the review produced an integrated understanding of what makes nutrition education effective for young mothers and why certain interventions demonstrate stronger behavioral outcomes than others.

RESULTS AND DISCUSSION

Effects of Nutrition Education on Maternal Knowledge and Understanding of Complementary Feeding

Nutrition education plays a central role in shaping maternal knowledge about complementary feeding (CF/MPASI), particularly among young mothers who often have limited experience and greater exposure to misinformation. Across the 78 studies included in this review, a consistent pattern emerged: structured and evidence-based nutrition education substantially improves maternal understanding of the principles of appropriate CF, including the recommended timing of introduction, dietary diversity, food texture progression, feeding frequency, and the importance of micronutrient-rich foods. This improvement in knowledge is a prerequisite for behavior change and establishes the cognitive foundation needed for mothers to make informed decisions about infant feeding. Evidence from randomized controlled trials in Ethiopia, Nepal,

and Indonesia demonstrates that mothers who receive targeted nutrition education demonstrate significantly higher knowledge scores post-intervention compared with control groups (Muthi'ah, 2022; Kogade et al., 2019).

One of the strongest effects identified in the literature relates to the understanding of dietary diversity. Many young mothers initially associate complementary feeding with a narrow set of foods, often dominated by rice porridge or other carbohydrate-heavy meals. Nutrition education that emphasizes the importance of a balanced diet, incorporating protein sources, fruits, vegetables, and fortified foods, consistently results in increased knowledge of food groups and the nutritional needs of infants. A controlled study in rural Bangladesh reported a 42 percent increase in maternal recognition of diverse food groups after participation in a structured education program delivered by community health workers (Manikam et al., 2017). Similar findings were observed in Indonesia, where young mothers exposed to demonstration-based MPASI education significantly improved their knowledge of nutrient density, texture progression, and age-appropriate portion sizes (Rismawati & Kurnia, 2025).

Another important knowledge dimension concerns the timing and method of introducing complementary foods. WHO guidelines emphasize starting MPASI at six months, yet global surveys show that many mothers introduce foods too early or too late, both of which negatively affect health outcomes (WHO, 2021). Education interventions consistently reduce early introduction driven by cultural beliefs or pressure from older family members. In India, a cluster-based educational intervention reduced early feeding by 36 percent among young mothers, suggesting that knowledge directly mitigates harmful traditional practices (Sanghvi et al., 2017). Mothers receiving education are also more likely to understand the importance of gradual texture progression, a factor associated with appropriate chewing development and reduced choking risk.

Feeding frequency and meal scheduling represent another domain where education improves maternal knowledge. Young mothers often underestimate feeding frequency or base feeding decisions on infant crying cues rather than structured schedules. Studies in sub-Saharan Africa and Southeast Asia reveal that after nutrition education, young mothers correctly identify the recommended meal frequency (3–4 times per day for 6–8 months, increasing to 4–5 times per day for children aged 9–23 months) and understand the importance of responsive feeding rather than force-feeding practices (Arikpo et al., 2018). This shift in understanding contributes to healthier feeding interactions and improved child appetite regulation.

Food safety knowledge also increases significantly following nutrition education. Young mothers, especially those living in crowded or low-resource environments, often lack guidance on hygiene practices related to food storage, handwashing, utensil sterilization, and avoiding contamination. Interventions that include food safety modules reduce unsafe practices such as reheating improperly stored food or feeding unpasteurized products. Studies in Kenya and Peru emphasize that integrating food safety into MPASI education reduces diarrhea incidence and improves mothers' confidence in preparing safe meals (Dadi et al., 2020).

Importantly, digital education interventions show strong knowledge gains. Young mothers naturally gravitate toward online sources, though these sources are often unreliable. When structured mHealth interventions provide verified nutrition content through WhatsApp groups, instructional videos, and SMS reminders, knowledge increases substantially. For example, an Indonesian trial using WhatsApp-based MPASI

education showed a 31 percent improvement in maternal knowledge scores compared with offline counseling alone (Muthi'ah, 2022). This suggests that digital platforms are not only accessible but highly effective for engaging younger demographics.

Behavior change theories underpin many successful education programs. Interventions grounded in models such as the Health Belief Model (HBM) or Social Cognitive Theory (SCT) demonstrate higher knowledge acquisition because they address perceived susceptibility, perceived benefits, barriers, and self-efficacy. Young mothers often lack confidence, and education programs that incorporate skill-building and self-reflection increase knowledge retention and readiness for behavioral change. Community-based learning, peer support, and hands-on demonstrations further reinforce knowledge, especially in cultures where intergenerational influence is strong.

Despite the overwhelmingly positive effects, knowledge improvements vary by socioeconomic status, education level, access to health services, and cultural contexts. Young mothers with low literacy or those living in remote areas show slower improvement unless interventions include visual materials or repeated reinforcement. Studies also reveal that knowledge gains alone do not always translate into improved practices, indicating a gap between cognitive understanding and behavioral implementation. This gap highlights the importance of combining education with supportive environments, practical demonstrations, and social influence strategies to ensure knowledge is translated into action.

Overall, evidence clearly shows that nutrition education significantly enhances maternal knowledge about complementary feeding. Across diverse geographical settings, delivery modes, and intervention styles, young mothers benefit from structured, evidence-based education. However, knowledge improvement is only the first stage of effective MPASI intervention, and sustained behavioral change requires additional support mechanisms, as explored in further discussions.

Impact of Nutrition Education on Complementary Feeding Practices among Young Mothers

While knowledge improvement is an important outcome, the ultimate goal of nutrition education is to influence real-world complementary feeding practices. Across the studies synthesized in this review, nutrition education interventions consistently contribute to improved feeding behaviors among young mothers, though the magnitude of change varies depending on the intervention type, duration, and contextual barriers. Behavioral improvements commonly observed include increased dietary diversity, adherence to feeding frequency guidelines, improved texture progression, enhanced food safety practices, and adoption of responsive feeding. These results align with global evidence demonstrating that nutrition education interventions are among the most effective approaches for improving child nutrition outcomes in LMICs (Kogade et al., 2019).

Dietary diversity is the most frequently reported improvement following educational interventions. Young mothers who participate in structured MPASI programs are more likely to provide meals containing protein sources, fruits, vegetables, and fortified foods. In a quasi-experimental study in Ethiopia, maternal participation in community-based nutrition education increased the proportion of children meeting Minimum Dietary Diversity (MDD) from 22 percent to 48 percent within three months (Arikpo et al., 2018). Similar results in Indonesia show that mothers exposed to cooking demonstrations and MPASI classes prepare more varied meals and reduce reliance on

carbohydrate-heavy porridges (Rismawati & Kurnia, 2025). These changes reflect the translation of knowledge into practice and demonstrate the value of hands-on learning.

Feeding frequency is another domain where educational interventions have substantial impact. Many young mothers initially feed infants irregularly or rely on informal guidance from family members. Nutrition education clarifies recommended feeding schedules, leading to increased adherence to WHO feeding frequency guidelines. In Kenya, participation in a six-week educational program increased the proportion of mothers following feeding frequency recommendations from 36 percent to 67 percent (Dadi et al., 2020). This demonstrates that consistent reinforcement and practical tools, such as feeding logs or reminder messages, support behavioral adherence.

Texture progression (moving from purees to mashed foods, lumps, and finger foods) is often misunderstood among young mothers, who may fear choking or believe infants cannot handle textured foods. Nutrition education that includes demonstrations of appropriate textures improves maternal confidence. Studies in Nepal and the Philippines show significant increases in texture appropriateness following structured interventions, contributing to improved chewing development and reduced picky eating behaviors (Manikam et al., 2017).

Food safety practices also improve after education. In multiple studies, mothers receiving training reduced unsafe behaviors such as storing MPASI at room temperature, reusing contaminated utensils, or feeding unwashed fruits. These improvements contribute not only to better nutritional outcomes but also to reduced incidence of gastrointestinal infection, a major barrier to achieving optimal child growth in LMICs.

To summarize key behavioral improvements across the literature, the following table synthesizes intervention types and their documented effects on young mothers' feeding practices.

Table 1. Behavioral Changes in Complementary Feeding Practices Following Nutrition Education Interventions

Intervention Type	Behavioral Outcomes Improved	Documented Evidence
Face-to-face counseling	Feeding frequency, food safety, texture progression	Significant improvements in MDD and MMF (Arikpo et al., 2018)
Group-based nutrition education	Dietary diversity, feeding confidence	Increased meal variety and protein inclusion (Kogade et al., 2019)
Cooking demonstrations	Practical food preparation skills	Reduced reliance on porridge; improved nutrient density (Rismawati & Kurnia, 2025)
mHealth/WhatsApp-based education	Knowledge retention, adherence to schedules	Higher post-intervention knowledge and improved feeding logs (Muthi'ah, 2022)
Community health worker	Food safety, feeding	Decreased unsafe

home visits	responsiveness	storage; improved feeding cues recognition (Dadi et al., 2020)
Peer support groups	Confidence, sustainability of behavior	Greater feeding autonomy and reduced misinformation (Manikam et al., 2017)

Nutrition education also impacts responsive feeding behavior, which is essential for healthy child development. Mothers who receive training are more likely to recognize hunger cues, avoid coercive feeding, and respond appropriately to satiety. This contributes to better appetite regulation and improved mealtime interactions. Behavioral change is further supported in interventions incorporating social support elements, where mothers learn from peers and observe correct feeding practices.

However, changes in feeding practices are moderated by external factors. Household food insecurity, influence from older family members, and limited autonomy can reduce the effectiveness of education interventions. Studies show that young mothers living in extended families may face conflicts between newly acquired knowledge and traditional feeding advice. Therefore, interventions involving both mothers and influential family members tend to produce more sustainable change (Ainy et al., , 2021).

Overall, the evidence demonstrates that nutrition education significantly improves complementary feeding practices among young mothers, though sustained impact requires supportive environments, continued reinforcement, and culturally sensitive approaches. These findings provide the foundation for the next discussion, which examines contextual barriers and enabling factors in greater depth.

Contextual Barriers, Enabling Factors, and Sustainability of Nutrition Education Outcomes among Young Mothers

While nutrition education consistently improves both knowledge and feeding practices among young mothers, its effectiveness is highly dependent on contextual factors that can either support or hinder behavioral change. These contextual determinants operate at multiple levels, including the household environment, cultural norms, socioeconomic status, health system readiness, and the availability of supportive community structures. Understanding these contextual factors is essential for ensuring that educational interventions lead to sustainable improvements rather than short-term behavioral adjustments that diminish over time.

Household dynamics exert a particularly strong influence on the feeding practices of young mothers. In many LMIC contexts, young mothers lack autonomy in household decision making, including decisions related to food allocation, child feeding, and caregiving. Studies across South Asia and Southeast Asia show that older family members, especially mothers-in-law, frequently control infant feeding decisions, often relying on traditional practices that contradict WHO recommendations (Sanghvi et al., 2017). This intergenerational dynamic means that even when young mothers gain accurate nutrition knowledge, they may struggle to implement recommended feeding practices. Interventions that include family-oriented education, group counseling for influential relatives, or multigenerational learning sessions consistently demonstrate stronger and more sustained behavioral change. Complementary feeding interventions

in Indonesia and India found that when senior family members were engaged in the educational process, improvements in dietary diversity and meal frequency were significantly more pronounced and lasted longer beyond the intervention period (Ainy et al., , 2021).

Socioeconomic conditions also shape the extent to which improved knowledge can be translated into practice. Young mothers from low-income households frequently face food insecurity, limited access to fresh ingredients, and competing financial priorities that reduce the feasibility of providing diverse diets. Even with strong motivation and correct knowledge, resource constraints can prevent mothers from preparing nutrient-dense meals or purchasing protein-rich foods. Studies in Kenya and Nepal highlight that households experiencing chronic food insecurity demonstrate weaker improvements in dietary diversity following education interventions, indicating that nutrition education alone is insufficient without integrated social protection programs (Dadi et al., 2020). Cash transfers, food vouchers, and community gardens have been shown to complement nutrition education by ensuring that mothers have the necessary resources to operationalize newly acquired skills.

Cultural norms represent another significant contextual factor. In many communities, beliefs surrounding infant feeding are deeply embedded in cultural identity. Some traditions encourage early introduction of solid foods to "strengthen" infants, while others delay complementary feeding due to fears of digestive problems. Cultural taboos may limit the consumption of certain nutrient-rich foods, particularly animal-source foods. Nutrition education that fails to acknowledge cultural beliefs risks rejection or partial adoption. However, culturally sensitive interventions that respect community norms while gradually introducing evidence-based recommendations are more likely to succeed. Effective programs incorporate local food examples, adapt recipes to cultural preferences, and use community role models to promote acceptance among young mothers and senior family members.

Health system capacity greatly influences the sustainability of improved practices. In many LMIC settings, health workers are overburdened, receive limited training in infant feeding counseling, or lack competency in behavior change communication. Studies from Ethiopia and Indonesia report that inconsistent messaging from health workers undermines the effectiveness of educational interventions, leaving young mothers confused about appropriate feeding guidelines (Muthi'ah, 2022). Strengthening health worker capacity through standardized training modules, supportive supervision, and updated counseling tools enhances both the quality and consistency of nutrition education delivered to families. Community health workers (CHWs) are particularly influential in this domain because they maintain close relationships with mothers and can provide personalized, repeated reinforcement that is critical for sustaining behavioral change.

Digital literacy and technological access also determine the success of mHealth-based nutrition education programs. While young mothers are typically more connected to mobile phones than older generations, disparities still exist in smartphone ownership, data affordability, and digital skills. Studies evaluating WhatsApp-based MPASI education in Indonesia found that mothers with limited data access or low confidence in using digital platforms benefited far less from digital interventions compared with those who were digitally literate (Rismawati & Kurnia, 2025). The effectiveness of mHealth therefore depends on designing inclusive systems that accommodate different levels of digital capacity, such as combining digital modules with offline counseling, using

audio-visual content rather than text-heavy materials, and providing tutorials on basic phone usage.

Social support structures play an essential role in reinforcing positive feeding behaviors. Young mothers who participate in mother-to-mother support groups, peer learning sessions, or community kitchens demonstrate greater resilience against misinformation and show stronger adherence to MPASI recommendations. Peer groups provide a platform for sharing experiences, clarifying doubts, and observing practical feeding demonstrations, all of which reinforce learning and increase maternal confidence. Evidence from Nepal and Bangladesh shows that peer-led nutrition groups significantly increase Minimum Dietary Diversity and sustain improvements for at least one year post-intervention (Manikam et al., 2017). This suggests that community engagement mechanisms are essential to the long-term sustainability of nutrition behavior change.

Another critical factor influencing sustainability is the design and duration of interventions. Studies consistently show that short-term educational programs result in temporary improvements in behavior that decline over time. Interventions with longer duration, repeated reinforcement, follow-up visits, and multi-session engagement demonstrate stronger and more sustained outcomes. This is consistent with behavior change theories which emphasize repetition, reinforcement, and continuous motivation as necessary components of lasting behavioral transformation. Programs that integrate practical demonstrations, real-life problem solving, and continuous mentoring, not just one-off lectures, produce deeper behavioral shifts among young mothers.

Environmental context, including access to clean water, sanitation, and food storage facilities, also affects the implementation of safe MPASI practices. Even when mothers understand correct hygiene practices, structural constraints such as lack of refrigeration or inadequate water supply limit their ability to maintain safe food preparation. Interventions that combine education with community-level infrastructure improvements, such as clean water initiatives or hygiene stations at community centers, show stronger impacts on feeding safety outcomes.

Taken together, these findings reveal that nutrition education is most effective when delivered through a supportive ecosystem involving family members, community networks, health systems, and structural enablers. Sustainable behavior change requires interventions that not only impart knowledge but also transform the social, cultural, and environmental contexts in which young mothers care for their children. Recognizing these contextual determinants is critical for designing future interventions that can deliver long-term improvements in complementary feeding practices.

CONCLUSION

This review demonstrates that nutrition education is an effective strategy for improving both knowledge and complementary feeding practices among young mothers, but its success is shaped by a complex interplay of cognitive, behavioral, social, and environmental factors. Evidence from diverse global settings shows that structured, evidence-based educational interventions lead to meaningful improvements in dietary diversity, feeding frequency, texture progression, food safety, and responsive feeding. However, knowledge acquisition alone is insufficient without simultaneous support from family members, strong health systems, and accessible food resources. Interventions that combine education with community

engagement, digital reinforcement, and practical demonstrations yield the most sustained behavioral change.

The findings also emphasize that contextual barriers such as household decision-making hierarchies, cultural norms, socioeconomic constraints, and limited health system capacity can hinder the translation of knowledge into practice. Addressing these factors through multilevel approaches such as engaging influential family members, strengthening health worker competencies, enhancing digital inclusivity, and integrating social protection mechanisms is essential for achieving long-term improvements. Ultimately, effective nutrition education for young mothers requires a holistic, culturally sensitive, and context-responsive strategy that empowers them with knowledge, skills, resources, and social support to confidently practice optimal complementary feeding**.**

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