JOYCED
Journal Of Early Childhood Education
E-ISSN: 2798-0294 | P-ISSN: 2798-0359
JOYCED Vol. 5(2), December 2025 (294-310)
DOI: 10.14421/joyced.2025.52-11

Integrating Health Promotion into Preschool Education: Evidence from an Action Research Internship

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Received: 9 October 2025
Reviewed: 6 November 2025
Accepted: 29 December 2025

Abstract

Early childhood education plays a key role in establishing healthy lifestyle habits; however, health-related domains such as nutrition, hygiene, physical activity, and socio-emotional learning are often addressed in a fragmented manner in preschool settings. This study aimed to design, implement, and analyze a health promotion intervention in a Portuguese preschool, examining its contribution to children's health-related knowledge and behaviors, as well as to the professional development of the intern educator. The study was conducted as part of a professional higher technical internship in Child and Youth Care and adopted an action research methodology. Cycles of planning, action, observation, and reflection guided the implementation of the Healthy Life project, which comprised seven structured, play-based activities focused on nutrition, hygiene, physical activity, and socio-emotional regulation. Data was collected through systematic participant observation, field notes, photographic documentation, and reflective journals. Observational data indicated improvements in children's ability to identify healthy and less healthy foods, describe basic hygiene procedures, and express emotions using appropriate vocabulary. Behavioral indicators included more frequent spontaneous handwashing before meals, peer reminders of hygiene routines, and increased requests for water instead of sweetened beverages during snack time. Group-based activities were associated with enhanced cooperation, turn-taking, and empathetic responses among peers. The findings suggest that preschools are effective contexts for promoting healthy lifestyles when health education is integrated into daily routines and supported by reflective teaching practices. The study highlights the importance of educator training, institutional support, and family involvement to sustain health-promoting behaviors in early childhood education.

Keywords: Preschool; health education; wellbeing in childhood; action research; reflective practice

Introduction

Early childhood is a critical developmental period in which lifelong habits, attitudes, and competencies are shaped (Heckman, 2017). Research consistently emphasizes the importance of preschool education in promoting not only cognitive and academic skills but also socio-emotional development and healthy lifestyle behaviors (Britto et al., 2017; Tang et al., 2023; Willemsen et al., 2023). During this stage, children acquire routines and practices that strongly influence their future well-being, including nutrition, hygiene, and social interaction (Birch & Ventura, 2009; Yoong et al., 2023). Consequently, preschools represent key environments for implementing educational initiatives that integrate health promotion into everyday practices.

The training and professional development of preschool educators are equally vital, as teachers serve both as role models and facilitators of learning. High-quality preschool education

depends on well-prepared educators who can design, implement, and reflect on pedagogical strategies that foster children's holistic development (Jennings & Greenberg, 2009; *Providing Quality Early Childhood Education and Care*, 2019; Wolf et al., 2019). In Portugal, recent studies highlight the need to strengthen teacher preparation and institutional support to ensure that preschool environments can effectively address children's health, wellbeing, and developmental needs (Ferreira et al., 2024; Moreira et al., 2023).

This article discusses the outcomes of an action research project carried out during an internship in preschool education in Portugal. The internship was carried out within the scope of the Professional Higher Technical Course in Child and Youth Care, at the School of Education of Fafe, of the European Institute of Higher Studies. The project, titled Healthy Life" (in Portuguese *Vida Saudável*) aimed to promote healthy living habits among preschool children through playful, structured, and participatory activities. By combining nutrition education, hygiene promotion, physical activity, and socio-emotional regulation, the project sought to enhance children's awareness and adoption of healthy practices. At the same time, the research process supported the professional growth of the intern educator, allowing the integration of theory and practice through cycles of planning, action, observation, and reflection .

This article discusses the outcomes of an action research project carried out during an internship in preschool education in Portugal, within the scope of the Professional Higher Technical Course in Child and Youth Care at the School of Education of Fafe, European Institute of Higher Studies. The project, titled Healthy Life (Vida Saudável), aimed to promote healthy living habits among preschool children through playful, structured, and participatory activities focusing on nutrition education, hygiene promotion, physical activity, and socio-emotional regulation.

Accordingly, the main objectives of this study were: (i) to design and implement a health promotion intervention integrated into daily preschool practices; (ii) to analyze its impact on children's awareness and adoption of healthy behaviors; and (iii) to reflect on how the action research process contributed to the professional learning and reflective practice of the intern educator.

The scientific contribution of this article resides in providing an empirically grounded example of how action research can be used as a methodological approach to bridge theory and practice in early childhood education. By documenting the implementation of a holistic health promotion project in a real preschool context, the study offers insights into effective pedagogical strategies and highlights the role of reflective practice in the professional development of future preschool educators.

Literature Review

Preschool Education, Pedagogy, and Teacher Preparation

Recent literature further emphasizes the need for a comprehensive and integrated approach to health promotion in early childhood education, extending beyond nutrition to include physical activity, movement behaviors, and daily routines. Nilsson et al. (2025)

highlight that preschool settings and educators play a central role in fostering healthy lifestyle behaviors, noting that teachers' perceptions, training, and institutional support significantly influence the implementation of health-promoting practices in early childhood education.

Preschool education plays a crucial role in children's cognitive, social, and emotional development, serving as the foundation for later academic achievement and well-being. Research consistently demonstrates that participation in early childhood education is associated with improvements in school readiness, including literacy, numeracy, language, and socio-emotional skills (Tang et al., 2023). In the Portuguese context, emerging research underscores both strengths and challenges in preschool quality and teacher well-being which are relevant to educators' preparation. For instance, Moreira et al. (2023) evaluated some kindergartens in Portugal and found that while many institutions provide outdoor play spaces and weekly physical education classes, there are notable deficiencies in indoor gross motor play areas, variability of environmental affordances for physical activity, and limited teacher training in physical activity promotion. These findings suggest that even when infrastructural and policy support exist, gaps in educator training and environment design may limit the full realization of pedagogical potential. Moreover, Ferreira et al. (2024) studied the mental wellbeing, teaching efficacy, and school connectedness among preschool educators across different districts of Portugal. Their results indicate that teacher wellbeing (which is influenced by working conditions, support, and initial and in-service training) varies by region. The authors argue that enhancing teacher preparation must include not just technical pedagogical skills, but also strategies for supporting teacher stress, promoting professional support networks, and ensuring equitable resource distribution.

The pedagogical activities carried out in preschool are central to these benefits. Studies emphasize that structured, play-based, and child-centered practices create optimal conditions for learning and development (Willemsen et al., 2023). Preschool settings that integrate guided play, teacher-child interactions, and opportunities for active exploration tend to foster self-regulation, problem solving, and language acquisition. Evidence also suggests that the "dosage" of preschool (measured in years of participation and intensity of attendance) matters significantly.

Equally critical is the preparation and professional development of preschool educators. Educators training has been shown to directly influence children's developmental outcomes through improvements in instructional quality and socio-emotional support. Wolf et al. (2019), studying a large-scale teacher training intervention, found that professional development programs produced sustained improvements in teaching practices and significant, lasting gains in children's school readiness, particularly in socio-emotional development. The persistence of these effects even one year after the program ended underlines the value of investment in teacher capacity building.

Healthy Eating in Preschool Education

Preschool age represents a particularly sensitive developmental stage in which dietary habits, preferences, and routines are established and consolidated. Scientific literature

consistently emphasizes that behaviors adopted during early childhood, such as food preferences, meal structure, and exposure to different types of foods, often persist into adolescence and adulthood, with long-term effects on health outcomes (Yoong et al., 2023). Bettocchi et al. (2025) mentions that preschool children's nutritional intake is strongly associated with parental body mass index, confirming that family environment and parental modeling are central in shaping dietary practices. Their study also found excessive consumption of sugar and early introduction of cow's milk, suggesting a gap between recommended guidelines and actual practices.

In addition to parental influence, the preschool environment itself constitutes a micro-setting where nutritional behaviors are developed. Willemsen et al. (2023) reviewed international studies and concluded that structured mealtime practices, such as regular schedules, active caregiver participation, and supportive food environments, are associated with healthier eating behaviors among young children. However, variation across contexts highlights the need for culturally sensitive approaches that consider social and institutional practices. Evidence from intervention studies (Rains & Giombi, 2024) suggests that while preschools can be effective vehicles for promoting healthy eating, outcomes are influenced by the type and intensity of interventions, the degree of parental involvement, and environmental support.

Intervention-based studies also point to the value of family engagement in reinforcing healthy behaviors. Harms et al. (2024) show that participatory interventions involving families, such as take-home educational kits, can positively support healthy eating habits and physical activity among preschool children, strengthening the continuity between home and school environments.

In Portugal, food education in preschools has begun to be addressed more systematically, but evidence remains limited. Braga-Pontes et al. (2022) reviewed strategies to promote vegetable consumption in Portuguese preschool children and found that although some interventions improve knowledge and attitudes towards vegetables, there is a lack of consistent long-term effects, particularly for increasing actual intake. The study also pointed out that national guidelines for food education at the preschool level are few, underscoring a need for policy development, teacher training in nutrition education, and evaluation of sustainable impact. Similarly, a nutrition education intervention in a district in the central region of Portugal sought to promote nutrition knowledge among preschool children. This study showed that structured educational activities can improve children's understanding of healthy eating, however the study also highlighted that such programs' success heavily depends on educator engagement, material resources, and integration with the preschool's daily routine.

The literature also highlights that repeated exposure to diverse, nutrient-rich foods is essential in developing taste preferences, especially for vegetables, which are often less accepted by young children. Social learning theory explains part of this phenomenon: children imitate adult models and peers, meaning that both parental and teacher behaviors significantly impact children's willingness to try and adopt healthier options (Willemsen et al., 2023). Therefore, interventions that combine repeated sensory exposure with positive modeling have been identified as particularly promising in shaping long-lasting food preferences.

Hygiene and Healthy Lifestyles in Early Childhood

Beyond nutrition, hygiene and healthy lifestyle habits are fundamental for preschool children's health and development. Research shows that poor hygiene practices are strongly associated with higher rates of infectious diseases, including diarrheal and respiratory infections, which can directly compromise growth, cognitive development, and nutritional status (Shukla & Verma, 2016) . The relationship between hygiene and nutrition is cyclical: inadequate hygiene increases susceptibility to infection, which can lead to nutrient loss and malabsorption, while malnutrition further weakens immune responses, perpetuating the cycle of ill health.

In preschool environments, structured hygiene routines, such as regular handwashing, oral hygiene practices, and personal care, are essential not only to prevent disease but also to promote a sense of autonomy and responsibility among children. However, the gap between knowledge and practice remains a major challenge: children may understand basic hygiene rules but not consistently apply them in everyday routines, often reflecting the behavior of parents, teachers, or peers (Shukla & Verma, 2016). This underscores the importance of integrating hygiene education directly into daily preschool routines, with teachers acting as role models and schools providing adequate facilities and resources.

Health promotion programs implemented in early education settings have demonstrated positive effects on children's awareness and knowledge of health and hygiene. Şenol & Şenol (2023) report that preschool health education initiatives can significantly increase health awareness, although the evidence on long-term behavioral change remains limited. Reviews of multicomponent interventions suggest that strategies combining environmental modifications, structured curricula, and family engagement are more effective than single-component approaches (Yoong et al., 2023). Nevertheless, the effectiveness of such interventions is strongly moderated by contextual variables, including socioeconomic status, cultural norms, and institutional resources.

At the institutional level, Penders et al. (2025) demonstrate that health promotion policies and practices in early childhood education and care settings tend to focus predominantly on nutrition and physical activity, although substantial variation exists across institutions and over time. These findings underline the importance of consistent policy frameworks and educator training to ensure sustainable and effective health promotion in preschool contexts.

Theoretical perspectives converge in recognizing that preschool settings are central arenas for building healthy lifestyles, combining nutrition and hygiene as interdependent pillars. Effective interventions rely on early, repeated exposure to healthy practices, integration of routines into everyday life, active modeling by adults, and strong collaboration between preschools and families. Nonetheless, gaps remain in sustaining long-term behavior change, especially regarding vegetable consumption and consistent hygiene practices, as well as in addressing inequalities linked to socioeconomic and cultural contexts.

Methods

This study followed an action research methodology, which is particularly suited for educational contexts where the practitioner is simultaneously a researcher and an active participant in the learning process. Action research enables cycles of planning, action, observation, and reflection, fostering continuous improvement of pedagogical practices in real settings (Kemmis et al., 2014). Within the internship context in a preschool, this approach provided the opportunity to identify children's needs regarding healthy lifestyles, design interventions, implement activities, and reflect on their effectiveness.

In this study, the action research process was operationalized through four clearly defined and recurring phases. During the planning phase, children's needs related to healthy lifestyles were identified through informal conversations with the cooperating educator, initial observations of daily routines, and analysis of the preschool's pedagogical plan. Based on this diagnosis, specific objectives, contents, materials, and strategies were defined for each activity. During the action phase, the planned activities were implemented with the children in their regular classroom context. These activities were integrated into the daily routine and designed to be playful, participatory, and developmentally appropriate. The observation phase occurred simultaneously with implementation and focused on systematically monitoring children's behaviors, engagement, and responses. Finally, the reflection phase involved critical analysis of the observed outcomes, discussion with the cooperating educator, and adjustments to subsequent activities, thus ensuring the cyclical and adaptive nature of the intervention.

The methodological choice was grounded in the dual role of the researcher as both an intern educator and an investigator. This dual position facilitated close interaction with the children and the teaching team, promoting authentic engagement and ensuring that activities responded to the real needs of the group (Mills, 2018). The action research approach thus supported both pedagogical improvement and professional learning. The participants of the project included 22 children between three and six years old, one cooperating educator, and an assistant. Throughout the internship, seven structured activities were implemented under the umbrella project "Healthy Life", focusing on nutrition, hygiene, physical activity, and socio-emotional regulation. Each activity was designed to combine playfulness and education, ensuring age-appropriate learning experiences.

Data collection relied on qualitative instruments commonly used in educational action research. The primary instrument was systematic participant observation, supported by an observation grid developed by the researcher. Observed indicators included: (i) children's level of engagement and participation; (ii) verbal expressions related to health concepts; (iii) demonstration of targeted behaviors (e.g., handwashing steps, food choices, emotional expression); and (iv) social interactions during activities. These indicators were selected to align with the objectives of each activity and the overall project goals. Data were recorded through detailed field notes written immediately after each session, photographic documentation of activities (used solely to support reflection and not for evaluative comparison), and reflective journals maintained by the intern educator. The reflective journal included descriptive accounts

of events, analytical reflections on children's responses, and decisions for subsequent planning, following established reflective practice frameworks (Creswell & Poth, 2024).

To enhance the credibility and validity of the data, several strategies were employed. Prolonged engagement in the field allowed for familiarity with the group and reduced reactivity effects. Triangulation was achieved by combining observations, photographic records, and reflective notes, as well as by discussing interpretations with the cooperating educator. Reflexivity was also maintained by acknowledging the researcher's dual role and critically examining how this position might influence observations and interpretations (Mills, 2018). The evaluation of the intervention was conducted through ongoing observation, analysis of children's participation, and reflection on the outcomes of each activity. This reflective process aimed to improve practices progressively and to enhance the children's awareness and adoption of healthy lifestyle habits. Action research thus functioned not only as a methodological framework but also as a professional development tool, enabling the intern educator to integrate theory and practice in a meaningful way.

Result/Findings

Implemented Activities for Nutrition, Hygiene, and Wellbeing

The "Healthy Life" project was designed and implemented in a Portuguese preschool with children aged between three and six years old. It addressed key aspects of a healthy lifestyle such as nutrition, hygiene, physical activity, and socio-emotional regulation, through the development of seven structured and purposeful activities. These activities were planned to be playful, engaging, and age-appropriate, fostering children's active participation while promoting awareness of healthy habits. Each activity combined theoretical knowledge with practical experience, encouraging children to explore, reflect, and adopt positive daily routines.

Healthy Wheel (Roda Saudável)

Children collaboratively created a food wheel by coloring and placing food images in the correct sections. This activity introduced the concept of food groups and helped children understand which foods should be consumed more or less frequently.

Fig. 1. Children engaged in preparing the food wheel

Operation Clean Teeth (Operação Dentes Limpinhos)

Using a large mouth model, a story, and a poster, children learned the correct way to brush their teeth and discussed the benefits of good oral hygiene. The activity fostered awareness of daily dental care in a playful manner.

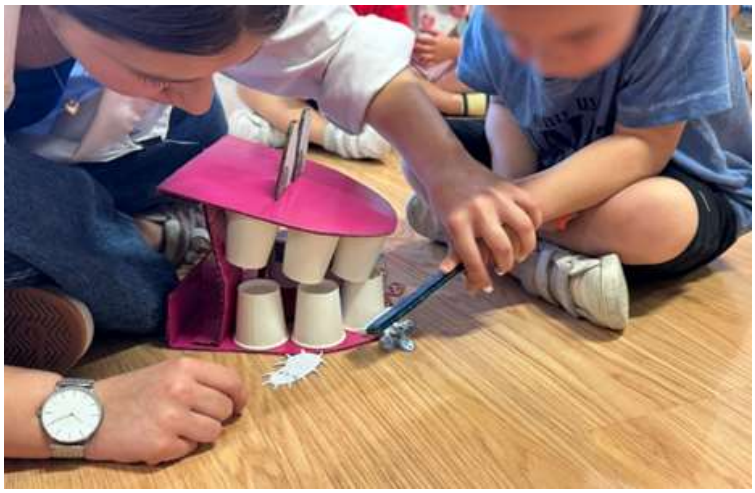

Fig. 2. Child learning how to brush their teeth

The Super Bath (O Super Banho)

Children practiced washing dolls to understand the correct procedure for body hygiene. This practical and playful approach emphasized the importance of cleaning specific body parts during daily routines.

Fig. 3. Trainee explaining the importance of body hygiene

What Do Teeth Need? (O Que Os Dentes Precisam?)

Through a sorting game with two boxes, children distinguished foods that are beneficial or harmful to their teeth. The activity reinforced the connection between nutrition and oral health.

Fig. 4. Child distinguishing healthy from unhealthy food

Body in Action (Corpo em Ação)

This activity included three moments: warm-up exercises, a “statue game” with music, and relaxation techniques. Children improved motor coordination, rhythm, and body awareness while experiencing the benefits of physical activity.

Fig. 5. Children participating in the 'Body in Action' activity

Wall of Emotions (Mural das Emoções)

Based on the story *The Color Monster*, children discuss emotions and filled a collective emotions chart using colors to represent how they felt that day. This encouraged emotional expression and awareness in a safe group environment.

Fig. 6. Child filling in the wall of emotions

Tooth Brushing Practice (A Lavagem dos Dentes)

In collaboration with local health professionals, children brushed their teeth after lunch under supervision, consolidating knowledge from the oral hygiene activities and fostering autonomy in daily routines.

Fig. 7. Poster produced during the *Tooth Brushing Practice* activity

The implementation of the action research project yielded several relevant findings regarding the promotion of healthy lifestyle habits among preschool children. Across the seven

activities developed under the "Healthy Life" project, children demonstrated high levels of engagement, curiosity, and active participation.

Systematic observations recorded across sessions indicate that engagement was particularly high during activities that combined storytelling, manipulation of materials, and peer interaction, suggesting that experiential and play-based approaches were especially effective in sustaining attention and involvement.

Development of Knowledge and Awareness

One of the most consistent results was the increased awareness among children regarding nutrition and hygiene practices. After the activities, children were able to recognize healthy and less healthy food options, showing enthusiasm when identifying fruits and vegetables during structured tasks. For example, during the *Healthy Wheel* activity (Fig. 1), observational notes document that several children verbally justified their choices using expressions such as "*these foods make us strong*" and "*we eat these every day*" (field notes, session 2), indicating emerging conceptual understanding rather than simple recognition.

In hygiene-related sessions, they were more proactive in washing their hands at appropriate times and demonstrated greater autonomy in daily routines such as brushing teeth or tidying personal belongings.

During *Operation Clean Teeth* (Fig. 2), children were observed reproducing brushing movements independently on the mouth model while naming specific steps, such as brushing the back teeth, which suggests procedural learning supported by modeling and repetition.

The photographic records associated with these activities were analyzed as complementary data, illustrating children's bodily engagement and imitation of demonstrated behaviors. Rather than serving a merely illustrative purpose, the images support observational evidence of increased attention, autonomy, and correct execution of hygiene routines.

Behavioral Changes and Habits

Although long-term changes could not be fully assessed within the timeframe of the internship, short-term behavioral shifts were observed. For instance, children began requesting water more frequently instead of sweetened beverages during snack time, and several spontaneously reminded peers of the importance of handwashing before meals.

One field note documents a child stating "*we need to wash our hands first*" while guiding a peer toward the sink (week 5), illustrating peer-mediated reinforcement of hygiene norms. These results suggest that even short interventions, when integrated into playful and participatory activities, can promote the internalization of healthier habits. The recurrence of these behaviors across different days indicates consistency rather than isolated occurrences, strengthening their interpretation as early habit formation processes.

Social and Emotional Dimensions

The project also had an impact on children's social interactions and emotional regulation. Group dynamics during physical activities improved collaboration, turn-taking, and

empathy. During the *Body in Action* activity (Fig. 5), observation grids show a gradual increase in cooperative behaviors, such as waiting for turns and following shared rules, particularly during the "statue game" which required collective attention and self-control. Activities designed around emotional recognition and self-regulation contributed to children's ability to verbalize feelings and adopt simple calming strategies.

In the *Wall of Emotions* activity (Fig. 6), children not only identified emotions using colors but also explained their choices, for example stating "*I am blue because I miss my mother*" or "*I am yellow because I played with my friend*" (reflective journal, session 6). These verbalizations were interpreted as indicators of developing emotional literacy. Analysis of the image associated with this activity highlights children's willingness to publicly express emotions within a group context, as well as peer responses that normalized emotional expression (e.g., "*it's okay to feel sad*"), suggesting the creation of a supportive emotional climate. This finding aligns with literature emphasizing the interdependence between health promotion and socio-emotional learning in early childhood (Durlak et al., 2011).

Intern Educator Reflection and Practice

From the perspective of professional practice, the findings reinforced the importance of integrating health education into everyday routines rather than treating it as isolated lessons. The action research cycles allowed the educator-in-training to adjust strategies according to children's responses.

Reflective notes indicate that activities involving storytelling and sensory exploration were more effective in maintaining attention than purely didactic approaches. One reflection states: "*When children could touch and decide, participation increased noticeably*" (reflective journal, week 3).

This reflective process also highlighted the need for stronger collaboration with families to reinforce healthy practices at home. Discussions with the cooperating educator emphasized that continuity between school and family routines remains a key challenge for sustaining behavioral change.

Challenges Identified

Despite the positive outcomes, some challenges emerged. Maintaining consistent vegetable consumption proved more difficult than promoting fruit intake, reflecting international findings (Rains & Giombi, 2024). Additionally, limited resources and space occasionally constrained the implementation of physical activity sessions. These challenges underline the importance of institutional support and family involvement in sustaining healthy lifestyle promotion. These constraints were documented in reflective notes and informed ongoing adaptations of activities, reinforcing the importance of institutional support and adequate infrastructure in sustaining health promotion initiatives.

Discussion

The findings of this action research project suggest that preschool settings provide fertile ground for the development of healthy lifestyle habits when activities are integrated into daily routines and framed within playful, participatory experiences. The increased awareness and small but observable shifts in behavior among children, such as choosing water over sweetened drinks and proactively engaging in hygiene practices, are consistent with international evidence that early childhood is a critical period for shaping long-term health behaviors (Yoong et al., 2023).

These behavioral changes, although modest and short-term, should be interpreted as early indicators of internalization processes rather than as stable habit formation. In line with socio-constructivist perspectives, the children's spontaneous verbalizations and peer reminders observed during the intervention suggest that learning occurred through social interaction, modeling, and shared meaning-making, which are central mechanisms in early childhood learning contexts (Vygostsky, 1980).

A central implication is that nutrition and hygiene education are more effective when embedded in interactive and sensory-rich activities, rather than delivered through didactic approaches. This reflects Willemsen et al. (2023) findings that structured mealtimes and engaging environments foster healthier practices. Similarly, the difficulty in promoting consistent vegetable consumption resonates with broader evidence showing that fruits are more easily adopted than vegetables in preschool interventions (Rains & Giombi, 2024). Comparable results have been reported by Nekitsing et al. (2018), who argue that repeated exposure combined with positive social modeling is necessary for increasing vegetable acceptance, particularly in early childhood settings.

The project also confirmed the close relationship between health promotion and socio-emotional development. Activities aimed at emotional regulation not only supported children's well-being but also enhanced peer collaboration and empathy, echoing Durlak et al. (2011) meta-analysis on the positive impact of social and emotional learning programs.

From a theoretical standpoint, these results support holistic models of early childhood education that conceptualize health, emotional development, and learning as interdependent domains rather than separate curricular components (Shonkoff et al., 2021). From a professional perspective, the reflective cycles inherent to action research strengthened the intern's ability to adapt strategies, underscoring the value of teacher preparation and ongoing professional development highlighted in the literature (Wolf et al., 2019). Practically, this suggests that initial teacher education programs should provide structured opportunities for action research and reflective inquiry, enabling future educators to integrate health promotion meaningfully into daily pedagogical practice. Nevertheless, challenges such as limited space for physical activity and variable family engagement underline the need for systemic support at the institutional and policy levels, as emphasized in Portuguese studies (Braga-Pontes et al., 2022; Moreira et al., 2023).

These findings align with international calls for whole-school and whole-community approaches to health promotion, where preschools are supported through coherent policies,

intersectoral collaboration, and sustained family involvement (Darling-Hammond et al., 2020). Overall, the discussion reinforces the theoretical argument that preschool education must integrate nutrition, hygiene, physical activity, and socio-emotional learning in a holistic manner. Effective promotion of healthy lifestyles depends on collaboration between educators, families, and institutions, supported by policies that ensure training, resources, and continuity.

Despite the positive outcomes, this study presents several methodological limitations. The small, context-specific sample and the short duration of the intervention limit the generalizability of the findings and prevent assessment of long-term behavioral change. Data collection relied mainly on qualitative methods, which, although suitable for action research, may be influenced by subjectivity related to the researcher's dual role and the absence of standardized measurement tools. In addition, family engagement was not systematically assessed, restricting analysis of continuity between school and home contexts. Future research should adopt longer-term, mixed-method designs and more robust family involvement to better understand the sustainability of healthy lifestyle behaviors.

Conclusion

This action research project demonstrated that preschool education is a powerful context for promoting healthy lifestyles among young children. Through playful, participatory, and age-appropriate activities, children increased their knowledge of nutrition and hygiene, showed short-term behavioral changes, and developed socio-emotional skills that support overall well-being. The findings confirm that health promotion in early childhood is most effective when integrated into everyday routines and supported by reflective teaching practices.

From a professional perspective, the project highlighted the importance of teacher preparation and continuous reflection in adapting strategies to children's needs. While positive changes were observed, challenges such as sustaining vegetable consumption, limited physical activity spaces, and the need for stronger family involvement suggest that broader institutional and policy support is essential (Lee et al., 2023).

In line with international and Portuguese evidence, this study reinforces the theoretical argument that preschool must be seen as a holistic space where nutrition, hygiene, physical activity, and socio-emotional development are interconnected. Action research proved to be an effective methodology not only for improving children's learning but also for enhancing the professional growth of the educator (Kirsten, 2020). Future initiatives should therefore combine school-based activities with family engagement and systemic support to ensure sustainable impacts on children's health and development.

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