



Promoting healthy eating habits in preschool education through experiential learning

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Abstract

This study reports on an educational intervention developed during a supervised internship in a preschool setting in Portugal, aiming to promote healthy eating habits and environmental awareness among children aged three to six years old. The project, titled “Hands-on Food: Promoting Healthy Eating Habits in Preschool Education”, was implemented at a preschool in northern Portugal between February and June 2025. It adopted a qualitative, descriptive, and participatory approach, using experiential and play-based methods to engage children in activities such as building a food pyramid, planting seeds, preparing simple recipes, and participating in games and discussions about food and nature. Data was collected through observation, field notes, and feedback from the classroom teacher, and analyzed thematically. The findings indicate that the intervention increased children’s understanding of food groups and healthy dietary choices, fostered their autonomy in food-related tasks, enhanced their curiosity about food origins and environmental sustainability, and improved social interaction and cooperation. Although the project was of limited duration, it provided meaningful evidence that early childhood education can be an effective setting for promoting health literacy and encouraging lifelong healthy eating habits.

Keywords: child development, experiential learning, health education, healthy eating, preschool education

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INTRODUCTION

The promotion of healthy eating habits in early childhood is a priority in contemporary educational agendas, as eating behaviors established during preschool years have long-term impacts on children’s health and well-being (Story et al., 2006). Early childhood education provides a unique opportunity to integrate nutritional awareness into daily routines, encouraging children to explore food, cooking, and nature in ways that foster autonomy, responsibility, and curiosity (Birch & Ventura, 2009).

Despite the recognized importance of nutrition education, several studies highlight that preschool children often demonstrate limited knowledge about healthy food choices and environmental sustainability (Contento, 2016). This educational gap underscores the need for innovative approaches that combine playful methodologies with hands-on experiences, enabling children to develop both cognitive and socio-emotional competencies while learning about food and health (Pérez-Rodrigo & Aranceta, 2001).

In this context, the intervention project “Hands-on Food: Promoting Healthy Eating Habits in Preschool Education” was designed and implemented during an internship at a preschool in northern Portugal. The project responded to the identified needs of the preschool group, which

included limited engagement with outdoor environments, insufficient awareness of sustainable food practices, and unhealthy eating habits among children.

The aim of the study is to investigate how active and playful learning strategies can foster healthy eating habits and environmental awareness in preschool children. More specifically, the project seeks to answer the following questions: (1) How can experiential activities such as planting, cooking, and food-related games contribute to children's understanding of healthy nutrition? (2) What effects do these activities have on children's autonomy, creativity, and interpersonal relationships?

This article contributes to the existing literature by providing evidence from a practical intervention that integrates health promotion, environmental education, and child development within the preschool context. By linking theory to practice, it highlights the relevance of experiential methodologies in fostering lifelong healthy habits from an early age.

Health education in the school context is recognized as a continuous process that equips children with the knowledge, attitudes, and skills necessary to make conscious and responsible lifestyle choices, thus contributing to their overall well-being and sustainable development (Direção-Geral da Educação & Direção-Geral da Saúde, 2017). School is considered a privileged setting for promoting health, as it allows children to integrate cognitive, emotional, and behavioral competencies within daily routines, shaping their identity and citizenship from an early age.

The Portuguese Referencial de Educação para a Saúde (RES) highlights five main thematic areas for action across all educational levels: mental health and violence prevention, food education, physical activity, addictive behaviors, and affectivity and sexuality education (Direção-Geral da Educação & Direção-Geral da Saúde, 2017). In the context of early childhood, the theme of food education is particularly relevant, as it addresses (1) the sociocultural influences on eating habits, (2) the relationship between nutrition and health, (3) individual food choices, (4) the food cycle from production to consumption, and (5) the link between dietary patterns and environmental sustainability.

For preschool-aged children, the RES sets objectives such as recognizing the origin of food, valuing local and seasonal products, identifying healthy foods, and developing autonomy in food-related daily routines. These goals are consistent with international health promotion agendas, including the WHO Health 2020 strategy and the UN Sustainable Development Goals, which advocate for the integration of health literacy and sustainable practices in education (World Health Organization, 2016).

The internship project "Hands-on Food: Promoting Healthy Eating Habits in Preschool Education" aligns with these national and international frameworks. By employing experiential, play-based methods such as planting seeds, constructing the food pyramid, and engaging in cooking activities, the project addressed key RES objectives: improving children's understanding of the relationship between food and health, fostering autonomy and responsibility in food preparation, and encouraging environmentally conscious habits. Furthermore, it provided opportunities to work on related competencies such as communication, cooperation, and emotional awareness, central to the holistic approach advocated by the RES.

Thus, this study is theoretically grounded in the perspective that health education in early childhood must be integrated, participatory, and experiential, connecting cognitive learning with socio-emotional development and environmental sustainability.

RESEARCH METHOD

This study adopted a qualitative, descriptive, and participatory approach, appropriate for investigating the processes and outcomes of an educational intervention in a natural preschool setting (Braun, 2006; Creswell & Poth, 2018). The research was conducted as part of a supervised

internship in the second year of the Higher Technical Degree in Child and Youth Care at the Instituto Europeu de Estudos Superiores (IEES).

Context and participants

The intervention was carried out in a preschool located in the north of Portugal, in a cluster of schools designated as a Priority Educational Territory (TEIP). The school serves a predominantly rural community and integrates preschool and primary education.

The target group consisted of 20 preschool children, aged between 3 and 6 years (7 girls and 13 boys), including two children diagnosed with autism. The intervention was conducted in collaboration with the classroom teacher, teaching assistants, and the intern researcher.

Research design and procedure

The project was implemented between February and June 2025 as a series of planned experiential and play-based activities designed to promote healthy eating habits and environmental awareness. The design followed three main phases: needs assessment, planning & implementation and evaluation.

Needs assessment

Initial classroom observations and consultation with the teacher revealed limited use of outdoor spaces, reduced knowledge about food origins, and a prevalence of unhealthy eating habits among the children.

Planning and implementation

Activities were designed in alignment with the objectives of the Portuguese Referencial de Educação para a Saúde (Direção-Geral da Educação & Direção-Geral da Saúde, 2017), particularly the food education theme. The intervention included activities such as: (1) Presentation of kitchen utensils; (2) Table-setting exercise to foster autonomy and spatial awareness; (3) Construction of the food pyramid to explore food groups and healthy choices; (4) Seed planting and observation of plant growth to connect food with nature; (5) Cooking sessions ("Little Chefs' Kitchen") to encourage hands-on learning; (6) Healthy eating games such as the "Healthy Hopscotch Game"; and (7) Discussion sessions promoting reflection on daily eating practices.

Evaluation

The effectiveness of the intervention was assessed through participant observation, field notes, and informal feedback from the classroom teacher and children. The evaluation focused on children's engagement, knowledge of food groups, participation in activities, and observed changes in attitudes toward food and environmental care.

Data collection and analysis

Data was collected qualitatively using field notes and reflective journals maintained by the researcher throughout the internship. These records captured children's reactions, participation levels, interactions, and evidence of learning during and after the activities.

The analysis was conducted using thematic analysis, identifying recurring themes related to children's understanding of healthy eating, their development of autonomy and responsibility in food-related tasks, and their engagement with environmental sustainability. The results were discussed considering the goals of the intervention and compared with existing literature on early childhood health education.

RESULTS AND DISCUSSION

The implementation of the project showed that hands-on, play-based activities strongly engaged the children. Their motivation was particularly evident during tasks that involved direct participation, such as planting seeds, observing plant growth, preparing simple recipes, and

constructing a large food pyramid. These findings confirm the idea that experiential learning in early childhood is more effective in promoting understanding and behavioral change than abstract explanations, as highlighted by Pérez-Rodrigo and Aranceta (2001) and Birch and Ventura (2009). The children's active involvement also supported the development of curiosity, concentration, and persistence.

Over the course of the intervention, the children progressively demonstrated a clearer understanding of the relationship between food and health. They became more able to identify food groups and to distinguish between healthier and less healthy choices, especially when participating in the food pyramid activity and in the "Healthy Hopscotch Game." These results echo previous research indicating that practical, age-appropriate exposure to healthy foods improves children's nutrition knowledge and may help shape healthier long-term eating patterns (Cooke, 2007).

An additional benefit of the project was the increase in the children's sense of autonomy and responsibility. Simple tasks such as setting the table or helping with food preparation encouraged the use of fine-motor skills, decision-making, and independence in managing daily routines. These outcomes reflect the objectives defined in the Portuguese Referencial de Educação para a Saúde (Direção-Geral da Educação & Direção-Geral da Saúde, 2017), which identifies autonomy as a crucial component of health education in early childhood.

The project also strengthened the connection between children and the natural environment. Through planting seeds and observing their growth, many children expressed curiosity about the origin of food and took pride in tasting the produce they had helped to grow. This practical link between food, nature, and health is consistent with the literature on school gardens and early exposure to environmental sustainability, which has been shown to enhance both vegetable consumption and ecological awareness (Morgan et al., 2010).

Another noteworthy impact was on the development of social and emotional competencies. Group activities such as preparing meals, sharing tools and ingredients, or discussing food choices created opportunities for cooperation, communication, and respectful interaction. These experiences fostered empathy, turn-taking, and the capacity to express needs and emotions constructively, thus contributing to the holistic approach to health education advocated by the RES.

Despite these positive outcomes, certain challenges were observed. Some children initially resisted trying new fruits or vegetables, a common manifestation of food neophobia in early childhood (Cooke, 2007). Furthermore, the relatively short duration of the intervention limited the capacity to assess sustained behavioral change over time. These challenges suggest that similar projects would benefit from being integrated into the regular preschool curriculum over a longer period and in partnership with families to reinforce learning at home.

In summary, the findings of this project indicate that an integrated, participatory approach to health education, aligned with national frameworks such as the RES and international agendas including WHO's Health 2020, can foster not only knowledge of healthy eating but also essential life skills such as autonomy, cooperation, and environmental responsibility. The success of this intervention supports the growing consensus that preschool settings play a crucial role in promoting health literacy and lifelong healthy habits.

CONCLUSION

The internship project "Hands-on Food: Promoting Healthy Eating Habits in Preschool Education" demonstrated that integrating health education into daily preschool practices can be both feasible and impactful. By adopting an experiential and playful methodology, the project not only increased children's awareness of healthy eating and the importance of balanced diets but also strengthened their autonomy, cooperation, and connection with nature. These

outcomes underscore the value of early interventions in shaping lifelong habits that support both personal health and environmental sustainability.

The results suggest that hands-on experiences such as planting seeds, preparing meals, and classifying foods foster curiosity and intrinsic motivation in young children. These activities translated abstract health concepts into meaningful learning experiences, encouraging behavioral changes and empowering children to participate actively in their own well-being. Furthermore, the collaborative nature of the project promoted essential socio-emotional competencies, such as teamwork, empathy, and responsibility—competencies recognized as core to the holistic approach of the Portuguese Referencial de Educação para a Saúde.

Although the project achieved its short-term goals, certain limitations were identified. The relatively brief duration of the intervention did not allow for the assessment of long-term behavioral changes. Additionally, some children initially showed reluctance to try unfamiliar foods, highlighting the need for continuous exposure and reinforcement of healthy practices. Future research and practice could benefit from longitudinal approaches and closer involvement of families and the wider community to consolidate and sustain positive outcomes.

Overall, this study highlights the crucial role of preschool education in promoting health literacy and establishing healthy eating habits. By aligning with national and international health promotion frameworks, such as the RES and the WHO's Health 2020 strategy, educators can create engaging and meaningful learning experiences that contribute to the development of healthier, more environmentally conscious future citizens.

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DECLARATION

Author contribution

All authors contribute in the research and/or writing the paper, and approved the final manuscript.

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Conflict of interest

All authors declare that they have no competing interests.

Ethics declaration

We as authors acknowledge that this work has been written based on ethical research that conforms with the regulations of our institutions and that we have obtained the permission from the relevant institutes when collecting data. We support the International Journal on Education Insight (IJEI) in maintaining the high standards of personal conduct, practicing honesty in all our professional practices and endeavors.

The use of artificial intelligence

We do not use any generative AI tools to write any part of this paper.

Additional information

Not available.

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