



Review Article

The Role of Environmental Education in Improving Human Health: Literature Review

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Abstract

Environmental education (EE) has garnered attention for its potential to improve human health through various mechanisms. This literature review investigates the multifaceted role of EE in enhancing physical activity, promoting sustainable behaviors, and fostering psychological well-being. The integration of EE into school curricula, such as through outdoor classrooms and school gardens, has been shown to increase physical activity levels among students, leading to improved physical health outcomes, including reduced obesity rates and enhanced cardiovascular fitness. Additionally, EE programs that focus on organic farming and local food systems significantly influence participants' dietary choices, promoting healthier eating habits and reducing the risk of chronic diseases. Furthermore, EE initiatives that emphasize reducing plastic use and promoting recycling contribute to lower environmental pollution and associated health risks. Psychological and social benefits, including reduced stress and anxiety levels and enhanced social cohesion, are also highlighted as key outcomes of EE programs. The empowerment of individuals and communities to advocate for health-promoting environmental policies is another notable benefit of EE, as it fosters environmental literacy and policy engagement. Despite these strengths, the review identifies gaps in the current research, such as the need for standardized program designs, objective measures of health behaviors, and longitudinal studies to assess long-term impacts. Addressing these gaps will enhance the understanding and effectiveness of EE in improving human health. This review underscores the importance of continued investment in and expansion of EE programs to maximize their health benefits and contribute to sustainable public health improvements.

Keywords: environmental education, human health, sustainable behaviors, environmental pollution

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1. Introduction

The intricate connection between environmental quality and human health has garnered increasing scholarly attention in recent years. As environmental degradation continues to pose significant threats to public health, researchers and policymakers increasingly recognize the need for effective educational interventions to mitigate these risks. Environmental education (EE), which aims to increase awareness and understanding of environmental issues, has emerged as a critical tool in fostering behaviors and attitudes that promote both environmental sustainability and human health. This literature review explores the role of environmental education in improving human health, examining recent studies and theoretical advancements to provide a comprehensive understanding of this multifaceted relationship [1]. Environmental education encompasses a broad range of activities and programs designed to inform and engage individuals about environmental issues, from school-based curricula to community outreach and public awareness campaigns. By enhancing knowledge and shaping attitudes towards the environment, EE can lead to significant health benefits. For example, educational programs that focus on pollution prevention and sustainable living can reduce exposure to environmental toxins, thereby decreasing the incidence of related health problems such as respiratory and cardiovascular diseases [2]. Moreover, environmental education plays a pivotal role in promoting mental health and well-being. Research shows that interaction with natural environments reduces stress, improves mood, and enhances cognitive function. Educational initiatives that encourage outdoor activities and environmental stewardship can thus contribute to mental health by fostering a deeper connection to nature. These programs not only provide immediate psychological benefits but also instill lifelong habits that support mental well-being [3]. In addition to direct health benefits, environmental education can also contribute to broader public health goals by addressing social determinants of health. EE programs often emphasize community engagement and social cohesion, which are crucial for building resilient communities capable of addressing environmental and health challenges. By fostering a sense of collective responsibility and empowering individuals with the knowledge and skills needed to advocate for healthier environments, environmental education can play a significant role in advancing public health equity [4]. This review aims to synthesize the latest research on the impact of environmental education on human health, identifying key mechanisms through which EE influences health outcomes and evaluating the effectiveness of various educational strategies. By providing an analysis of current evidence, this review seeks to highlight the importance of integrating environmental education into public health policies and programs to create healthier, more sustainable communities [5]. Environmental education (EE) refers to organized efforts aimed at teaching individuals and communities about the natural environment, the challenges it faces, and the actions required to protect it. This education encompasses a wide range of activities, from formal school curricula to informal learning experiences such as nature walks and community projects. The primary goal of EE is to foster environmental literacy, encouraging individuals to develop

a deeper understanding of environmental issues and to adopt behaviors that support environmental sustainability [6]. Environmental literacy is the desired outcome of effective environmental education. It involves having the knowledge, skills, and motivation to make responsible decisions that consider the well-being of the natural environment. An environmentally literate person understands key concepts related to ecosystems, biodiversity, and sustainability and is capable of critically analyzing environmental information to make informed decisions. This literacy extends beyond knowledge to include attitudes and behaviors that support ecological balance and public health [7]. Health behaviors refer to actions individuals take that affect their health, either positively or negatively. These behaviors include dietary choices, physical activity, smoking, and other lifestyle habits that contribute to overall well-being. In the context of environmental education, health behaviors also encompass actions that reduce exposure to environmental hazards, such as proper waste disposal, reducing air pollution, and advocating for clean water. Promoting healthy behaviors through EE can lead to improved public health outcomes by reducing the incidence of diseases linked to environmental factors [8]. Several theoretical frameworks underpin the link between environmental education and health, providing a basis for understanding how educational interventions can influence health outcomes. One such framework is the social cognitive theory (SCT), which emphasizes the role of observational learning, social influence, and self-efficacy in behavior change. According to SCT, individuals learn about health behaviors by observing others and through direct education, and their belief in their ability to perform these behaviors (self-efficacy) is crucial for actual behavior change. EE programs that incorporate SCT principles can effectively promote health behaviors by modeling positive actions and building individuals' confidence in their ability to make healthy choices [9]. Another relevant framework is the theory of planned behavior (TPB), which posits that intention to perform a behavior is the primary determinant of whether it will be carried out. Intentions are influenced by attitudes toward the behavior, subjective norms, and perceived behavioral control. In the context of EE, TPB suggests that educational programs can shape attitudes by providing information about the benefits of health-promoting behaviors, influencing subjective norms by highlighting community values and expectations, and enhancing perceived behavioral control by teaching practical skills and strategies. By addressing these components, EE can increase the likelihood that individuals will engage in behaviors that improve their health and protect the environment [10]. Together, these theoretical frameworks highlight the mechanisms through which environmental education can lead to positive health outcomes. By fostering environmental literacy and promoting health behaviors, EE can contribute to a more informed and proactive population capable of making decisions that enhance both individual and community health [11]. The purpose of this literature review is to comprehensively examine the role of environmental education in improving human health. This research aims to synthesize the latest findings on the impact of environmental education on various aspects of health, including physical, mental, and social well-being. By analyzing current evidence, this review seeks to identify and elucidate the key mechanisms through which environmental education influences health outcomes. Additionally, it aims to

evaluate the effectiveness of different environmental education strategies in promoting positive health behaviors and outcomes. Through this systematic exploration, the review intends to highlight the critical importance of integrating environmental education into public health policies and programs. Ultimately, this research endeavors to provide a robust foundation for understanding how environmental education can contribute to creating healthier, more sustainable communities, and to inform future directions in both environmental education and public health initiatives.

2. Literature Review Methodology

2.1. Search strategy

To comprehensively investigate the role of environmental education in improving human health, a systematic search strategy was employed to identify relevant literature. The primary databases used for this search included PubMed, Web of Science, Scopus, and ScienceDirect. These databases were chosen for their extensive coverage of health, environmental science, and education research. Keywords used in the search included combinations of “environmental education,” “environmental literacy,” “human health,” “health behaviors,” “public health,” and “well-being.” The search was limited to peer-reviewed articles published from January 2020 to June 2024 to ensure the inclusion of the most recent and relevant studies [12].

2.2. Inclusion and exclusion criteria

Articles were included in the review based on several criteria. Firstly, studies had to focus on environmental education or environmental literacy and their direct or indirect impacts on human health. Secondly, the articles needed to be empirical studies, systematic reviews, or meta-analysis to ensure the robustness and reliability of the findings. Studies that only mentioned EE in passing without a substantial focus on its health implications were excluded. Additionally, articles not published in English or those without full-text availability were excluded from the review. This rigorous inclusion/exclusion criterion ensured that only high-quality and pertinent studies were analyzed [13].

2.3. Selection process

The selection process for articles involved several steps. Initially, the identified articles from the database search were screened based on their titles and abstracts. This preliminary screening aimed to eliminate studies that were irrelevant to the research question. Following this, the full texts of the remaining articles were assessed for eligibility based on the predefined inclusion and exclusion criteria. Any discrepancies or uncertainties regarding the inclusion of specific articles were resolved through discussion among

the reviewers. This systematic approach ensured a comprehensive and unbiased selection of relevant literature [14].

To further refine the selection, reference lists of the included articles were manually searched for additional relevant studies that might have been missed during the initial database search. This backward citation tracking helped in identifying seminal works and recent studies that could provide a deeper understanding of the topic. The final pool of selected articles was then analyzed and synthesized to extract key themes and findings related to the impact of environmental education on human health [4].

3. Finding

3.1. Mechanisms of influence

Environmental education (EE) influences human health through various mechanisms, primarily by fostering environmental literacy, promoting health-related behaviors, and enhancing psychosocial well-being. Environmental literacy, which encompasses knowledge, attitudes, and skills related to environmental stewardship, is a critical outcome of EE. Increased environmental literacy encourages individuals to adopt behaviors that reduce exposure to environmental hazards, such as proper waste management and pollution reduction practices. This, in turn, mitigates risks associated with environmental pollutants and fosters a healthier living environment [15]. Moreover, EE programs often include experiential learning and community engagement activities that enhance participants' understanding of the direct link between environmental health and personal well-being [13].

Research has shown that environmental education can significantly improve various health outcomes, including physical health, mental health, and overall well-being. Physical health benefits are primarily achieved through behaviors that reduce exposure to harmful environmental factors, such as pollutants and toxins. For instance, EE initiatives that promote clean air practices and proper sanitation can lead to reductions in respiratory and gastrointestinal diseases [16].

Environmental education programs also play a crucial role in promoting sustainable food choices, by educating individuals about the environmental impacts of their dietary habits, EE programs encourage more sustainable and healthful eating behaviors. Lessons on topics such as organic farming, local food systems, and the ecological footprint of food production help participants understand the connection between their food choices and environmental health. These programs often include practical components, such as school gardens or cooking classes, which provide hands-on experience in growing and preparing healthy, sustainable foods. As a result, participants are more likely to adopt diets rich in fruits, vegetables, and other whole foods, which are beneficial for both personal health and the environment [17]. EE programs effectively reduce harmful behaviors that contribute to environmental degradation and adverse health outcomes. For instance, educational campaigns focusing on reducing plastic use and promoting recycling have led to significant behavior changes. A survey of participants in

a community-based EE program showed a 40% reduction in single-use plastic consumption and a 35% increase in recycling rates. These behavior changes directly contribute to reduced environmental pollution and associated health risks, such as respiratory problems and water contamination. Moreover, the programs foster a sense of environmental stewardship, encouraging individuals to make environmentally conscious decisions that benefit both their health and the environment [18]. Mental health benefits are also substantial; interaction with nature, often encouraged through EE programs, has been shown to reduce stress, anxiety, and depression. Nature-based educational activities promote mindfulness and emotional regulation, contributing to improved mental health outcomes [19]. Additionally, EE can foster social well-being by building community cohesion and social support networks, which are essential components of holistic health [20].

3.2. Health outcomes addressed

Environmental education (EE) programs can significantly promote increased physical activity by encouraging outdoor learning and engagement with natural environments. Many EE programs incorporate activities such as nature walks, field trips, and hands-on environmental stewardship projects, which inherently involve physical activity. By integrating these activities into their curricula, EE programs not only teach students about environmental conservation but also promote healthier, more active lifestyles. Studies have shown that regular engagement with nature can improve physical health by increasing physical activity levels, reducing obesity rates, and enhancing cardiovascular health [21]. For instance, outdoor classrooms and school gardens provide opportunities for children to move, explore, and interact with their surroundings, leading to higher levels of physical activity compared to traditional indoor classroom settings [22]. Environmental education also promotes mental health and social well-being, which are critical components of overall health. EE programs that facilitate time spent in natural settings can reduce stress, anxiety, and depression, leading to improved mental health outcomes. Nature-based learning activities, such as hiking, bird-watching, and gardening, have been shown to enhance mood and cognitive function. Additionally, EE programs often emphasize community engagement and collective action, which can strengthen social ties and build supportive networks. These social benefits are particularly important for fostering resilience and well-being in communities facing environmental and health challenges [23]. EE has significant psychological and social benefits, enhancing overall well-being. Studies show that exposure to natural environments through EE programs reduces stress and anxiety levels. For instance, participants in nature-based EE programs reported a 20% reduction in perceived stress and a 15% improvement in mood compared to control groups. Additionally, these programs often promote social interactions and community building, which are vital for mental health. The collaborative nature of many EE activities, such as community clean-ups and environmental advocacy projects, strengthens social ties and provides a support network for participants, further contributing to

their psychological resilience [23]. By promoting increased physical activity, sustainable food choices, and the reduction of harmful behaviors, environmental education programs offer comprehensive benefits that extend beyond environmental awareness to encompass holistic health improvements. These programs provide individuals with the knowledge, skills, and motivation needed to make healthier lifestyle choices, ultimately contributing to more sustainable and health-conscious communities [17]. EE programs play a crucial role in promoting sustainable food choices. A recent study revealed that participants in EE programs focusing on organic farming and local food systems were 30% more likely to choose fruits and vegetables over processed foods. This shift in dietary habits is essential for reducing the risk of chronic diseases such as obesity, diabetes, and cardiovascular conditions. Additionally, these programs often include practical activities like cooking classes and school gardens, which reinforce healthy eating habits. Participants reported increased awareness of the environmental impacts of their food choices and a stronger preference for sustainably sourced foods [17]. One of the key ways EE fosters knowledge and awareness about environmental health risks is by encouraging proactive health behaviors that minimize exposure to environmental hazards. Educational programs often include practical advice on how to reduce personal and community exposure to pollutants, such as using air purifiers, avoiding the use of pesticides, and promoting safe drinking water practices. By translating complex scientific information into actionable steps, EE empowers individuals to take control of their environmental health. This proactive stance not only improves individual health outcomes but also contributes to broader public health efforts aimed at reducing the burden of environmentally mediated diseases [24]. In addition to promoting positive behaviors, environmental education programs can help reduce harmful behaviors that negatively impact both health and the environment. For example, EE initiatives that address the dangers of littering, improper waste disposal, and the use of toxic household chemicals can lead to healthier communities by reducing exposure to pollutants. Educational campaigns that focus on reducing plastic use and encouraging recycling can decrease environmental contamination and associated health risks. By fostering a sense of environmental stewardship and responsibility, these programs empower individuals to make choices that protect both their health and the planet [18].

4. Target Populations

Environmental education programs target various populations, each with unique benefits and challenges. In school settings, EE can profoundly impact children and adolescents by establishing foundational knowledge and behaviors that persist into adulthood. Early exposure to EE enhances students' understanding of environmental issues and encourages sustainable habits that promote lifelong health [13]. Environmental education (EE) programs have been shown to significantly increase physical activity among participants. Research indicates that integrating EE into school curricula, such as through school gardens and outdoor classrooms, leads to higher levels of physical activity among students. For example,

a study by Papadopoulou et al. (2020) found that students in schools with comprehensive EE programs engaged in 25% more physical activity compared to those in traditional school settings. This increased physical activity is associated with improved physical health outcomes, including reduced obesity rates and enhanced cardiovascular fitness [22]. In adult populations, EE often focuses on community-based initiatives that address local environmental and health concerns. These programs are particularly effective in marginalized communities, where they can empower residents to advocate for healthier environments and access to resources [25]. Additionally, EE programs targeting professionals, such as healthcare providers and educators, can multiply the impact by equipping them with the knowledge to educate and influence others within their communities [26]. Environmental education (EE) plays a pivotal role in enhancing individuals' understanding of environmental health risks by providing comprehensive knowledge about how environmental factors impact human health. Through structured curricula and programs, EE informs participants about various pollutants, including air and water contaminants, toxic chemicals, and hazardous waste, and their direct and indirect effects on health. For instance, educational initiatives that explain the sources and health implications of air pollution can help individuals understand the connection between respiratory diseases and exposure to pollutants like particulate matter and nitrogen oxides. This knowledge is crucial for empowering communities to advocate for cleaner environments and adopt practices that reduce exposure to these harmful substances [27].

4.1. Community and policy impact

EE programs also focus on building community resilience by fostering collective awareness and action on environmental health issues. Community-based environmental education initiatives often involve local stakeholders, including schools, healthcare providers, and community organizations, in efforts to address local environmental health risks. These programs can facilitate the development of community action plans, such as local clean-up campaigns, tree-planting drives, and initiatives to improve local air and water quality. By involving the community in these efforts, EE not only raises awareness but also strengthens social cohesion and collective capacity to respond to environmental health challenges [28]. EE empowers individuals and communities to advocate for health-promoting environmental policies. A study found that 60% of participants in EE programs engaged in advocacy efforts, such as petitioning for cleaner air standards and participating in public forums on environmental issues. This advocacy is often driven by a deeper understanding of the links between environmental quality and health outcomes, gained through EE. These informed advocates can influence policy changes that lead to improved environmental health standards, demonstrating the far-reaching impact of EE on public health and policy [29]. Integrating environmental education into public health strategies amplifies its benefits, creating synergistic effects that enhance both environmental and health outcomes. Public health initiatives that incorporate EE principles can address environmental determinants of health more effectively. For example, urban planning projects

that include community education components can ensure residents are informed and engaged in creating healthier living spaces. Such integrated approaches can lead to more sustainable and health-promoting environments [30]. EE also raises awareness about emerging environmental health issues, such as climate change, its health impacts, and the importance of sustainability. Climate change education within EE programs can highlight how rising temperatures, extreme weather events, and changing ecosystems affect human health by exacerbating conditions like heatstroke, cardiovascular diseases, and the spread of vector-borne diseases. By integrating current scientific findings into their curricula, EE programs ensure that participants are informed about the latest environmental health challenges and the steps necessary to mitigate these risks. This proactive approach helps communities prepare for and adapt to changing environmental conditions, thereby reducing health vulnerabilities [31]. Additionally, policy interventions that support EE, such as funding for school-based programs and community outreach, are crucial for scaling up successful initiatives and ensuring broad access to the benefits of environmental education [32].

4.2. Technological integration

The use of technology and media in EE has significantly enhanced its ability to disseminate information about environmental health risks. Digital platforms, social media, and interactive tools provide innovative ways to engage a wider audience and spread awareness about critical environmental health issues. For example, mobile apps that monitor air quality can provide real-time data and health advisories, enabling individuals to make informed decisions about outdoor activities. Online courses and virtual workshops have also made it easier for people to access EE resources, regardless of geographic location. These technological advancements ensure that environmental health education is accessible, up-to-date, and relevant to diverse populations [33]. The integration of technology and media in EE significantly enhances its impact on environmental health awareness. Digital tools and social media platforms have been shown to increase engagement and dissemination of information. For example, a recent study highlighted that EE programs utilizing mobile apps and online platforms saw a 50% increase in participant engagement and a 40% increase in knowledge retention regarding environmental health risks. These tools allow for real-time updates, interactive learning experiences, and broader reach, ensuring that more individuals are informed and motivated to take action to protect their health and the environment [34].

5. Discussion

The review of literature on the role of environmental education (EE) in improving human health reveals several key findings and recurring themes. One prominent theme is the positive impact of EE on physical activity. Numerous studies demonstrate that EE programs, particularly those involving outdoor activities and school gardens, significantly increase physical activity levels among participants. This

increase in physical activity is associated with better physical health outcomes, including reduced obesity rates and enhanced cardiovascular health. These findings underscore the importance of incorporating active learning components in EE programs to promote physical health. Another recurring theme is the promotion of sustainable behaviors through EE. Programs that educate participants about organic farming, local food systems, and the environmental impacts of their food choices are effective in encouraging healthier dietary habits. Participants in such programs are more likely to choose fruits and vegetables over processed foods, thereby reducing the risk of chronic diseases. Additionally, these programs often lead to increased awareness and preference for sustainably sourced foods, contributing to both personal health and environmental sustainability [16, 17]. Environmental education (EE) influences human health by fostering environmental literacy, which encourages individuals to adopt behaviors that reduce exposure to environmental hazards. For instance, a study showed that participants in a community-based EE program reduced single-use plastic consumption by 40% and increased recycling rates by 35%, directly contributing to reduced environmental pollution and associated health risks [17, 18]. EE programs provide substantial psychological and social benefits, which are crucial for overall well-being. Exposure to natural environments through EE reduces stress and anxiety levels and improves mood. Additionally, the social interactions and community building fostered by many EE activities enhance mental health and social cohesion. These psychological and social benefits are vital for building resilience and supporting mental health, particularly in urban and high-stress environments [22, 23]. A significant theme in the literature is the empowerment of individuals and communities to advocate for health-promoting environmental policies through EE. By increasing environmental literacy and understanding of the links between environmental quality and health, EE equips participants with the knowledge and skills needed for effective advocacy. Studies show that participants in EE programs are more likely to engage in policy advocacy efforts, influencing legislative changes that improve environmental health standards. This advocacy is critical for driving systemic changes that protect public health [27, 29]. The use of technology and media in EE enhances its impact by broadening reach and engagement. Digital tools, such as mobile apps and online platforms, facilitate the dissemination of information and increase participant engagement and knowledge retention. These technological advancements make EE more accessible and effective in raising awareness about environmental health risks and motivating action to protect health and the environment. The integration of technology in EE is a powerful strategy for enhancing its educational impact and advocacy potential [32, 34]. The synthesis of the literature underscores the multifaceted benefits of environmental education in improving human health. From promoting physical activity and sustainable behaviors to reducing harmful practices and fostering psychological well-being, EE is a powerful tool for enhancing health outcomes. Furthermore, by empowering individuals and communities to advocate for environmental policies and leveraging technology for greater reach, EE contributes to the long-term public health improvements. These findings highlight the need for continued investment in and expansion of EE programs to maximize their health benefits.

One of the key strengths of the research on environmental education (EE) and health is the growing body of empirical evidence that demonstrates the multifaceted benefits of EE. Studies have consistently shown that EE programs effectively promote physical activity, sustainable behaviors, and psychological well-being. For example, comprehensive reviews and meta-analyses indicate that students in schools with integrated EE programs engage in significantly higher levels of physical activity, which is associated with numerous health benefits, including reduced obesity rates and improved cardiovascular health [21, 22]. This empirical support reinforces the value of EE in fostering healthy lifestyles. Another strength lies in the interdisciplinary nature of the research, which draws from fields such as education, psychology, public health, and environmental science. This interdisciplinary approach allows for a more holistic understanding of how EE impacts health. It also facilitates the integration of various theoretical frameworks, such as social cognitive theory and the theory of planned behavior, to explain the mechanisms through which EE influences health behaviors [22, 23]. This comprehensive perspective enhances the robustness of the findings and provides a solid foundation for developing effective EE programs. Furthermore, the research highlights the role of EE in empowering individuals and communities to advocate for environmental policies that promote health. By increasing environmental literacy and awareness, EE programs equip participants with the knowledge and skills needed to engage in policy advocacy. Studies have shown that participants in EE programs are more likely to take part in advocacy efforts, influencing policy changes that improve environmental health standards [27, 29]. This empowerment aspect underscores the long-term impact of EE beyond individual behavior changes, contributing to broader societal benefits.

Despite the strengths, there are several limitations in the current research on EE and health. One major limitation is the variability in the design and implementation of EE programs, which makes it challenging to compare results across studies. Differences in program content, duration, and delivery methods can lead to variations in outcomes, complicating the assessment of EE's overall effectiveness. For instance, while some studies report significant improvements in health behaviors, others find more modest effects, highlighting the need for standardized approaches to EE program development and evaluation [16, 17]. Another limitation is the reliance on self-reported data in many studies, which can introduce biases such as social desirability and recall bias. Self-reported measures of physical activity, dietary habits, and environmental behaviors may not accurately reflect actual behaviors, leading to potential overestimation or underestimation of the impact of EE programs. Objective measures, such as direct observation or wearable activity trackers, are needed to validate self-reported data and provide more accurate assessments of program outcomes [17, 18]. Additionally, there is a need for more longitudinal studies to assess the long-term impact of EE on health outcomes. Most existing studies focus on short-term effects, limiting the understanding of how sustained engagement in EE programs influences health over time. Longitudinal research would provide valuable insights into the persistence of behavior changes and the long-term benefits of EE, thereby informing the development of programs that maintain their effectiveness over extended periods [32, 34]. Lastly, there is limited research on the differential impacts of EE across diverse

populations. While some studies highlight the benefits of EE for specific groups, such as children or low-income communities, there is a need for more research that explores how EE affects various demographic groups differently. Understanding these differences is crucial for designing inclusive and equitable EE programs that effectively address the unique needs and challenges of diverse populations [22, 23].

In conclusion, while the research on environmental education and health demonstrates significant strengths, including robust empirical evidence and an interdisciplinary approach, it also faces limitations such as variability in program implementation, reliance on self-reported data, and a lack of longitudinal studies. Addressing these limitations through standardized program designs, objective measures, long-term studies, and research on diverse populations will enhance the understanding and effectiveness of EE in improving human health.

6. Conclusion

This literature review demonstrates the significant role of environmental education (EE) in improving human health across multiple dimensions. The research reveals that EE programs effectively promote physical activity, sustainable behaviors, and psychological well-being, while also reducing harmful environmental practices. EE's impact extends beyond individual health outcomes, empowering communities to advocate for health-promoting environmental policies. The integration of technology in EE has further enhanced its reach and effectiveness. However, the field faces challenges, including variability in program design, reliance on self-reported data, and limited longitudinal studies. Despite these limitations, the evidence strongly supports the value of EE as a powerful tool for enhancing public health. Future research should focus on standardizing program designs, employing objective measures, conducting long-term studies, and exploring EE's impact across diverse populations. These efforts will strengthen the evidence base and inform the development of more effective EE programs, ultimately contributing to improved health outcomes and environmental sustainability on a broader scale.

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