



Empowering Young Minds: Impact of Experiential Learning on Hygiene, Nutrition, and Environmental Habits in Rural Primary Schools

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Health education during childhood plays a fundamental role in shaping lifelong behaviours related to personal hygiene, nutrition, and environmental responsibility. Primary school children are particularly receptive to activity-based learning approaches that promote healthy practices through direct participation rather than passive instruction. This study evaluated the effectiveness of an experiential learning intervention conducted among primary school students in Jamgaon (M), Durg district, Chhattisgarh, under the National Service Scheme (NSS). The intervention focused on three major domains: personal hygiene and handwashing practices, nutritional literacy, and environmental awareness through waste segregation and cleanliness activities. A baseline survey involving thirty primary school students was conducted to assess existing knowledge regarding hygiene, nutrition, and environmental practices. The results indicated substantial knowledge gaps, with only 10% of students familiar with the recommended 20-second handwashing rule, 25% aware of proper waste segregation practices, and only 6.67% possessing adequate knowledge of essential food groups. Activity-based demonstrations, interactive discussions, role plays, and practical exercises were subsequently organized to improve awareness and encourage behavioural change. The intervention demonstrated that experiential learning provides an engaging platform for improving children's understanding of healthy practices while simultaneously encouraging active participation, teamwork, and community engagement. The findings suggest that integrating experiential learning into primary school curricula can strengthen school health programmes and promote sustainable behavioural changes among rural children. Continued collaboration among schools, teachers, parents, and community organizations is recommended to ensure long-term improvement in hygiene, nutrition, and environmental habits.

Keywords: Experiential learning, hygiene education, nutrition literacy, environmental education, primary schools, rural education, National Service Scheme.

Introduction

Healthy childhood development forms the foundation of a productive society. During the primary school years, children develop behavioural patterns that often continue throughout adulthood. Habits associated with personal hygiene, balanced nutrition, and environmental responsibility significantly influence physical health, cognitive development, academic performance, and social well-being. Consequently, schools serve as ideal institutions for promoting healthy lifestyles through structured educational programmes.

In developing countries such as India, childhood health continues to face numerous challenges. Poor hand hygiene, inadequate sanitation facilities, nutritional deficiencies, and improper waste disposal contribute substantially to communicable diseases and poor educational outcomes. Although several government initiatives, including PM POSHAN, Swachh Bharat Mission, and the School Health and Wellness Programme, have improved awareness, behavioural adoption remains inconsistent, particularly in rural communities. Limited infrastructure, inadequate sanitation facilities, socioeconomic constraints, and insufficient health education further hinder sustainable behavioural change.

Traditional classroom teaching primarily focuses on theoretical knowledge, often failing to translate awareness into daily practice. Contemporary educational research therefore advocates experiential learning, where students actively participate in demonstrations, practical exercises, games, and community-based activities. According to Kolb's Experiential Learning Theory, learning becomes more meaningful when individuals acquire knowledge through concrete experiences followed by reflection and application. Experiential learning enables children to internalize concepts by directly engaging with real-life situations. Practical demonstrations of proper handwashing techniques, healthy food identification, school gardening, waste segregation, compost preparation, and cleanliness campaigns encourage students to develop habits rather than merely memorize information. These approaches simultaneously strengthen communication skills, teamwork, leadership, critical thinking, and social responsibility.

The National Service Scheme (NSS) provides an excellent platform for implementing community-based experiential education. Through collaborative activities involving university volunteers, teachers, and local communities, primary school students receive practical exposure to essential health and environmental concepts. The present intervention conducted at Jamgaon (M), Durg district, Chhattisgarh, sought to improve students' knowledge and awareness regarding hygiene, nutrition, and environmental conservation through activity-oriented educational programmes.

Objectives

The study is guided by the following objectives:

1. To assess the existing hygiene habits of primary school students in rural and urban schools.
2. To assess the nutritional habits of primary school students in rural and urban schools.
3. To assess the environmental habits of primary school students in rural and urban schools.
4. To develop and implement an experiential learning programme focusing on hygiene, nutrition, and environmental education.
5. To examine the impact of experiential learning on students' hygiene habits.
6. To examine the impact of experiential learning on students' nutritional habits.
7. To examine the impact of experiential learning on students' environmental habits.
8. To compare the effectiveness of experiential learning between rural and urban primary school students.
9. To provide recommendations for strengthening experiential learning practices in primary schools.

Materials and Methods

Study Area

The present study was conducted in **Jamgaon (M)** village of Patan Block, Durg district, Chhattisgarh, India, during the National Service Scheme (NSS) Special Camp organized by the College of Horticulture and Research Station, Sankara-Patan. The village was selected as the adopted village for community service activities under the NSS programme. The intervention focused on primary school children because early childhood is considered a critical stage for developing lifelong health and environmental behaviours.

Research Design

A descriptive educational intervention design was adopted to evaluate students' baseline knowledge regarding personal hygiene, nutrition, and environmental habits. The study also assessed the usefulness of experiential learning activities in improving awareness among

primary school students. Since the intervention was conducted during the NSS special camp, emphasis was placed on educational outcomes rather than clinical measurements.

Participants

Primary school students aged between 9 and 12 years participated voluntarily in the study. The participants represented both boys and girls from the village primary school. Prior permission was obtained from the school authorities before conducting the educational sessions.

Educational Intervention

The intervention was designed using experiential learning principles, where children learned through observation, participation, discussion, and practical demonstrations rather than conventional lectures. Three major educational themes were covered.

Personal Hygiene and WASH habits: Personal hygiene education plays a vital role in promoting the health and well-being of primary school students. Childhood is an important stage for developing lifelong healthy habits, and schools provide an ideal environment for teaching children about cleanliness, self-care, and disease prevention. Personal hygiene practices such as regular bathing, oral care, wearing clean clothes, trimming nails, and maintaining clean surroundings help children prevent infections and improve their confidence and social behaviour. Among these practices, handwashing is one of the simplest and most effective methods for preventing the spread of infectious diseases. Teaching children proper handwashing techniques with soap and clean water, especially before eating, after using the toilet, and after outdoor activities, helps reduce the transmission of germs that cause illnesses such as diarrhoea and respiratory infections.

Personal Hygiene - Students were taught the importance of proper handwashing using soap, the WHO-recommended 20-second handwashing technique, oral hygiene, nail trimming, regular bathing, wearing clean clothes, proper respiratory etiquette during coughing and sneezing. The sessions included demonstrations, student participation, role plays, and supervised handwashing practice.

Nutritional literacy and Dietary habits: Nutrition literacy is an essential component of health education that enables primary school students to understand the importance of healthy food choices and balanced diets. The primary school years are a critical period for developing proper dietary habits, as the food choices and eating behaviours developed during childhood often influence health throughout life. Nutrition education helps children gain knowledge about different food groups, the importance of nutrients, healthy eating patterns, and the effects of consuming unhealthy foods. Teaching students about balanced meals, adequate water intake, fruits and vegetables, and the importance of limiting junk food and sugary drinks encourages healthier dietary practices.

Nutrition Education - Nutrition education focused on helping children understand balanced diets, essential food groups, importance of fruits and vegetables, protein-rich foods, safe drinking water, avoiding excessive junk food consumption. Interactive discussions, food identification exercises, and healthy diet demonstrations were used to reinforce learning.

Waste Management Practices: Waste management and environmental habits are important aspects of developing responsible and sustainable behaviour among primary school students. Early childhood is an appropriate stage to introduce children to concepts such as cleanliness, waste reduction, recycling, conservation of natural resources, and protection of the environment. Schools play a significant role in creating environmental awareness by providing opportunities for students to participate in practical activities such as waste segregation, recycling projects, composting, school gardening, cleanliness campaigns, and water conservation activities. Proper waste management habits, including using dustbins, avoiding plastic waste, reusing materials, and reducing unnecessary consumption, help students understand their responsibility towards maintaining a clean and healthy environment.

Environmental Education - Environmental education emphasized waste segregation, reduce-reuse-recycle (3R) principles, composting, proper use of dustbins, school cleanliness, tree plantation, environmental conservation. Students actively participated in waste segregation demonstrations and cleanliness drives within the school premises.

Data Collection and Analysis

A structured questionnaire was administered before the educational intervention to assess students' existing knowledge. Questions focused on three major indicators:

- Awareness of the 20-second handwashing rule
- Knowledge of waste segregation
- Knowledge of essential food groups

Collected data were analysed using descriptive statistics. Percentages were calculated to describe students' baseline awareness levels in each educational domain. The findings were interpreted to identify existing knowledge gaps and to evaluate the educational significance of experiential learning.

Results

The baseline assessment demonstrated that students possessed limited knowledge regarding essential health and environmental practices. Only **10%** of students correctly understood the recommended 20-second handwashing procedure, indicating inadequate awareness of proper hand hygiene. Similarly, only **25%** of students possessed knowledge regarding correct waste segregation practices. Awareness of balanced nutrition was even lower, with merely **6.67%** of students demonstrating adequate knowledge of essential food groups. These findings suggest that although children routinely participate in school activities, their understanding of scientifically recommended health practices remains insufficient.

Table 01: Previous Knowledge of Respondents

Knowledge Aspect	Yes	No
20 second rule for handwash	10%	90%
Waste segregation practices	25%	75%
Essential food chart	6.67%	93.34%

The experiential learning sessions generated enthusiastic participation among students. Demonstrations allowed children to observe correct handwashing techniques, practice waste segregation, and identify healthy food items through interactive exercises. Students actively engaged in discussions, answered questions confidently, and participated in group activities. The intervention also encouraged collaborative learning. Children learned from one another while participating in demonstrations and cleanliness campaigns. Teachers reported increased enthusiasm and curiosity during activity-based sessions compared with traditional classroom instruction. The findings support previous research indicating that experiential learning improves children's engagement and facilitates behavioural understanding more effectively than lecture-based teaching alone.

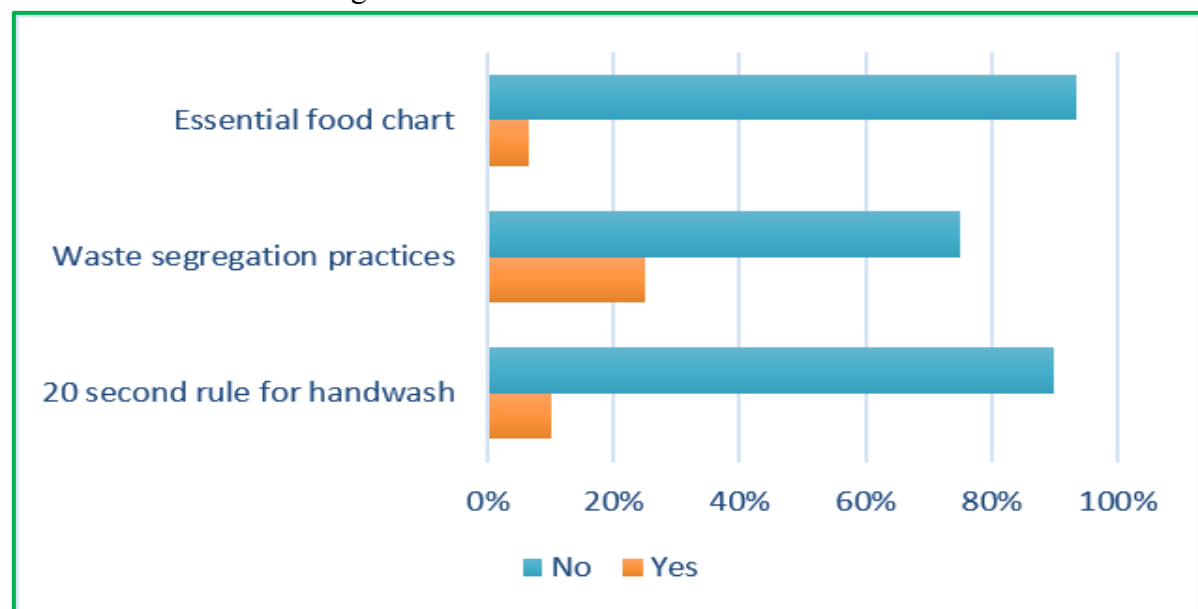


Fig. 01: Graph on previous knowledge of respondents

Discussion

The present study demonstrates the importance of experiential learning in improving awareness regarding hygiene, nutrition, and environmental practices among rural primary school students. The baseline survey revealed considerable deficiencies in children's knowledge of proper handwashing, nutrition, and waste management. Such findings are consistent with previous studies reporting inadequate hygiene awareness among school children in developing regions. Limited sanitation infrastructure, inadequate health education, and socioeconomic challenges continue to influence children's behavioural practices. Experiential learning addressed these challenges by transforming abstract concepts into practical experiences. Rather than merely explaining the importance of handwashing, students physically practiced the technique under supervision. Likewise, waste segregation activities enabled children to distinguish biodegradable and non-biodegradable waste through direct observation.

Nutrition education similarly became more meaningful through visual demonstrations and interactive discussions. Children were encouraged to identify healthy foods and understand the role of balanced diets in growth and disease prevention. An additional strength of the intervention was community participation. Since the programme was organized through the National Service Scheme, university volunteers, teachers, and local stakeholders worked together to deliver educational activities. Such collaboration enhances sustainability because children often transfer newly acquired knowledge to their families and communities. The study also reinforces Kolb's Experiential Learning Theory, which proposes that meaningful learning occurs through concrete experience, reflection, conceptualization, and active experimentation. The activities implemented during the NSS special camp reflected each stage of this learning cycle. Although behavioural improvements were observed qualitatively during the educational sessions, the present study primarily reports baseline knowledge because post-intervention quantitative assessment was beyond the scope of the available data. Future research should employ pre- and post-intervention designs with larger sample sizes to measure long-term behavioural change using appropriate statistical analyses.

Conclusion

The present study highlights the potential of experiential learning as an effective educational strategy for improving awareness regarding hygiene, nutrition, and environmental responsibility among rural primary school students. The baseline assessment revealed considerable deficiencies in students' knowledge of proper handwashing, balanced nutrition, and waste segregation. Activity-based educational interventions successfully engaged children through demonstrations, participation, and practical learning experiences. Experiential learning encourages children not only to understand health concepts but also to apply them in their daily lives. The approach promotes confidence, teamwork, communication skills, environmental responsibility, and healthy behavioural practices. Schools should therefore integrate experiential learning into regular classroom teaching rather than relying exclusively on theoretical instruction. Government programmes such as PM POSHAN, Swachh Bharat Mission, and School Health and Wellness initiatives can achieve greater effectiveness when combined with practical educational activities involving teachers, parents, and community volunteers.

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