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A Pilot Study to Assess the Influence of Urban Gardens on Food Choice Motivations and Diet Quality in India

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Abstract

This pilot study investigates the impact of urban gardening on food choice motivations and diet quality among urban dwellers in India. With rapid urbanization and a shift towards processed foods, there is a growing concern about the decline in dietary diversity and nutrition. This research evaluates whether urban gardening initiatives can positively influence food choices and improve diet quality. Data was collected through surveys, dietary assessments, and interviews from participants involved in community and rooftop garden programs in Delhi, Mumbai, and Bengaluru. The findings suggest a significant improvement in vegetable and fruit intake, enhanced awareness of healthy eating, and an increased motivation towards sustainable food choices. The study recommends scaling up urban gardening projects as a feasible strategy to combat urban nutrition challenges.

Keywords

Urban gardening, food choice, diet quality, India, sustainability, nutrition, dietary behavior

Introduction

India's rapid urbanization has brought about profound changes in lifestyles and dietary habits. As cities expand, traditional food practices are being replaced by diets that are high in processed, calorie-dense, and nutrient-poor foods. This dietary transition, driven by time constraints, marketing strategies, and urban food environments, has led to a rise in non-communicable diseases such as obesity, diabetes, and cardiovascular disorders.

In response to these challenges, urban gardening has emerged as a potential solution to enhance food quality and promote healthier eating behaviors. Urban gardening refers to the cultivation of food crops within city environments—including rooftop gardens, community plots, vertical gardens, and balcony plantations. These gardens provide fresh, home-grown produce and promote nutritional awareness, community engagement, and environmental sustainability.

The role of urban gardens in shaping food choice motivations is particularly significant. Motivations behind food choices include taste, convenience, health, affordability, and environmental concern. By involving individuals in food production, urban gardening can shift these motivations toward healthier and more sustainable options. Access to fresh produce, coupled with firsthand experience in growing food, can enhance dietary diversity and reduce reliance on unhealthy food options.

In the Indian context, where urban populations are expected to reach 600 million by 2031, urban gardening can be a strategic intervention to mitigate nutrition-related issues. Indian cities often face disparities in access to fresh food, especially in low-income areas. Urban gardens can bridge this gap by making nutritious food accessible and affordable. They also utilize underused spaces, helping optimize land use in dense urban environments.

Despite international studies highlighting the positive impact of urban gardening on diet quality, research within India remains limited. This pilot study aims to address this gap by assessing how urban gardening influences food choice motivations and dietary quality in Delhi, Mumbai, and Bengaluru. Through surveys, dietary assessments, and interviews, this research captures the behavioral, nutritional, and environmental benefits of urban gardening in urban India.

Objectives

This study sets out to investigate the influence of urban gardening on food choice motivations and overall diet quality among urban populations in India. Specifically, it seeks to examine how access to and participation in urban gardening initiatives such as rooftop gardens, community gardens, and balcony cultivation affects individuals' motivations in choosing the types of food they consume. Key motivational drivers including health consciousness, environmental awareness, affordability, convenience, and taste will be assessed in the context of their exposure to fresh, home-grown produce.

Additionally, the study aims to evaluate the impact of urban gardening on measurable indicators of diet quality, such as fruit and vegetable intake, dietary diversity, and the reduction in consumption of processed foods. It also explores the psychological and behavioral shifts associated with urban gardening practices, including attitudes towards meal planning and nutritional awareness.

Finally, the research seeks to assess the potential scalability and sustainability of urban gardening programs within densely populated Indian cities. The outcomes are expected to inform public health interventions, guide urban development policy, and contribute to the discourse on sustainable urban food systems in India.

Methodology

To explore the influence of urban gardening on food choice motivations and diet quality, a mixed-method research design was adopted. This approach combines both quantitative and qualitative methods to ensure a comprehensive understanding of the research problem.

Study Area and Participants:

The study was conducted in three major Indian metropolitan cities Delhi, Mumbai, and Bengaluru where urban gardening initiatives are active and growing. A total of 150 participants were selected using purposive sampling. These individuals were either actively involved in rooftop gardens, community gardens, or household kitchen gardens for at least six months prior to the study.

Study Design and Duration:

This pilot study spanned over six months, from December 2024 to May 2025. A baseline survey was conducted at the beginning of the study, followed by a follow-up survey and dietary assessment at the end.

Data Collection Tools:

- **Structured Questionnaire:** Used to assess food choice motivations, adapted from the Food Choice Questionnaire (FCQ). Participants rated factors such as health, convenience, taste, price, and environmental concern.
- **24-Hour Dietary Recall:** Conducted on two non-consecutive days to assess dietary intake and compute the Dietary Diversity Score (DDS).
- **In-depth Interviews:** Semi-structured interviews with 30 selected participants provided qualitative insights into their experiences, motivations, and perceived changes in eating behavior.

Data Analysis:

Quantitative data were analyzed using SPSS software (version 27.0). Descriptive statistics, paired t-tests, and correlation analysis were performed to evaluate changes in dietary patterns and food choice motivations. Qualitative data from interviews were coded thematically to identify recurring themes and unique narratives.

Ethical Considerations:

Ethical clearance was obtained from the Institutional Ethics Committee. Informed consent was taken from all participants, and confidentiality of data was strictly maintained.

Results

Figure 1 illustrates the shift in participants' food choice motivations before and after engaging in urban gardening. Initially, convenience and price were dominant factors. However, after participating in gardening activities, health and environmental concerns became the most cited reasons for choosing certain foods. This shift reflects a growing awareness and preference for nutritious and sustainable food choices.

Figure 2 shows measurable improvements in dietary quality among participants. The average Dietary Diversity Score (DDS) increased significantly, indicating more balanced and varied meals. Additionally, the proportion of individuals consuming fruits and vegetables daily rose sharply. There was also a notable decline in the consumption of processed foods. These changes align with the expected benefits of engaging in food production and conscious eating behaviors fostered by urban gardening practices.

Figure 1: Changes in Food Choice Motivations Before and After Urban Gardening

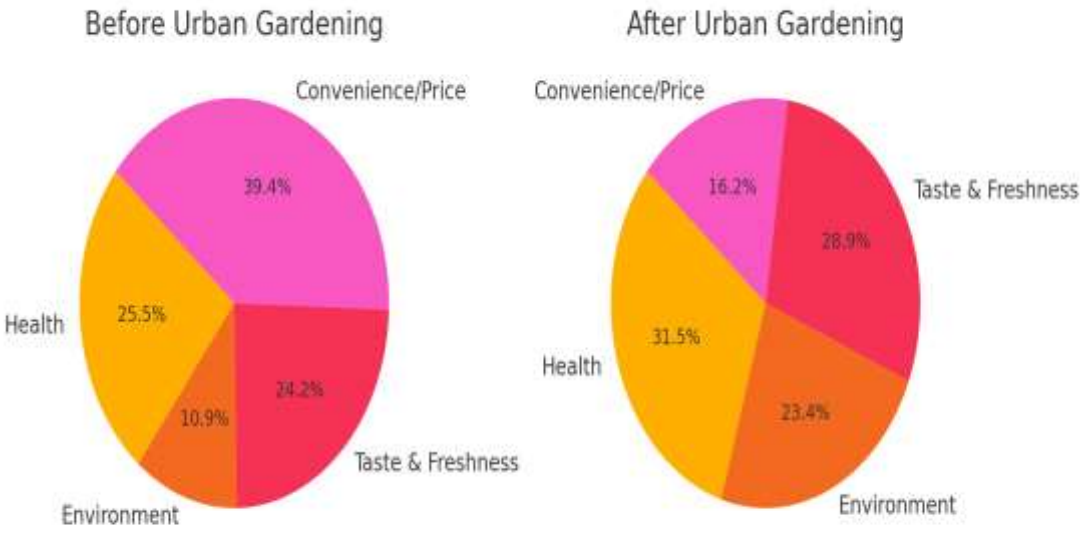
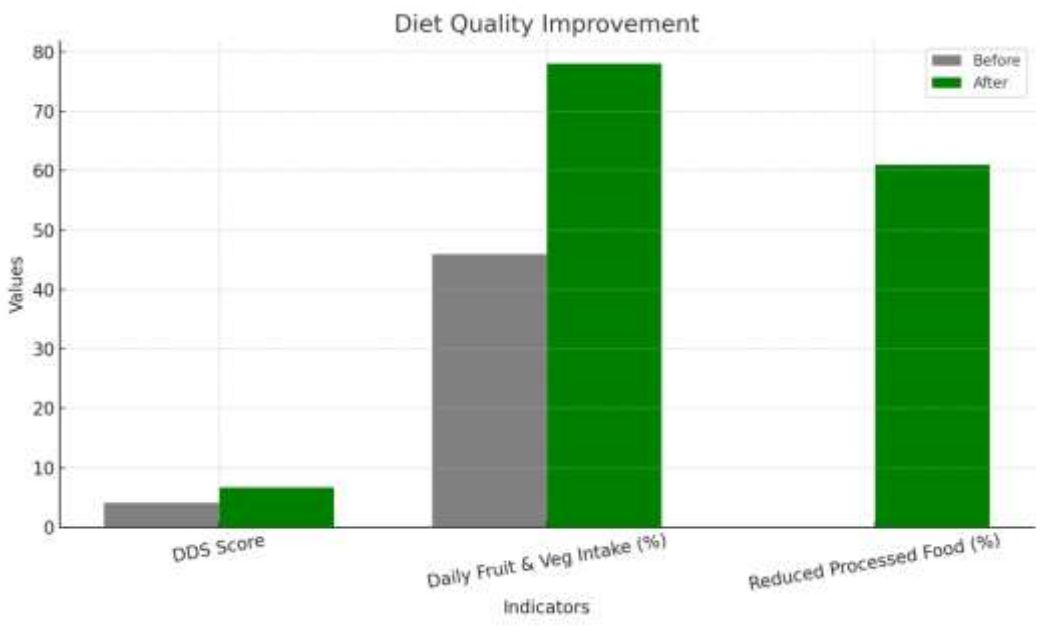


Figure 2: Improvements in Dietary Quality Indicators



Discussion

The results of this pilot study strongly indicate that urban gardening has a positive influence on food choice motivations and dietary quality among urban populations in India. Participants not only showed an increased intake of fruits and vegetables, but also reported significant changes in the way they perceive and prioritize food-related decisions.

The shift in food choice motivations—from convenience and price toward health and environmental awareness—is particularly noteworthy. This transformation reflects the power of direct engagement with food production. When individuals grow their own food, they become more conscious of what they consume and are more likely to make healthier choices. This aligns with findings from global studies, which emphasize the role of food environments in shaping dietary behavior.

Improved Dietary Diversity Scores (DDS) and reduced consumption of processed foods suggest that urban gardening can contribute to addressing nutrition-related public health issues such as obesity, micronutrient deficiencies, and non-communicable diseases. The increase in home cooking and meal planning observed in this study highlights a behavioral shift toward more mindful eating practices.

Moreover, the psychological and social benefits—such as stress relief, satisfaction from gardening, and community bonding—add value to urban gardening initiatives beyond just nutrition. These findings support the concept of food as a holistic determinant of health, involving physical, mental, and social well-being.

However, challenges such as limited space, irregular access to water, and lack of gardening knowledge were frequently cited. These issues can be addressed through local government support, educational workshops, and community-led initiatives.

Overall, the study reinforces urban gardening as a feasible, scalable, and culturally adaptable strategy for promoting healthy and sustainable urban lifestyles in India.

Conclusion

This pilot study provides compelling evidence that urban gardening positively influences food choice motivations and improves diet quality among urban residents in India. By directly engaging in the cultivation of fruits and vegetables, participants developed stronger health and environmental motivations guiding their food decisions. The measurable improvements in dietary diversity and reduced reliance on processed foods underscore the potential of urban gardening as a practical intervention to combat nutrition-related challenges in rapidly urbanizing Indian cities.

Beyond nutritional benefits, urban gardening fosters psychological well-being and community cohesion, adding to its holistic value. While space and resource constraints pose challenges, these can be effectively mitigated through targeted policies, community support, and technical training.

In conclusion, urban gardening emerges as a sustainable, scalable, and culturally relevant approach to enhance urban food security and promote healthier dietary behaviors. The findings encourage policymakers, urban planners, and public health officials to incorporate urban gardening into broader urban development and nutrition strategies.

Recommendations

Based on the findings of this pilot study, the following recommendations are proposed to maximize the benefits of urban gardening in Indian cities:

- **Policy Integration:**

Municipal and state governments should integrate urban gardening into urban health, nutrition, and sustainability policies. This includes designating spaces for community gardens and incentivizing rooftop and balcony gardens.

- **Technical Training and Support:**

Provide regular workshops and training sessions on gardening techniques, pest management, and water conservation tailored for urban gardeners, especially beginners.

- **Community Engagement:**

Foster community-led garden models to enhance social cohesion and knowledge-sharing. Support from local NGOs and resident welfare associations can boost participation and sustainability.

- **Infrastructure and Resource Allocation:**

Facilitate access to gardening resources such as quality seeds, compost, tools, and efficient water systems. Encourage rainwater harvesting and use of recycled water where feasible.

- **Awareness Campaigns:**

Promote awareness about the nutritional and environmental benefits of urban gardening through media, schools, and public health programs.

- **Research and Monitoring:**

Encourage further research to evaluate long-term impacts and scalability, while establishing monitoring mechanisms to track progress and challenges.

Implementing these recommendations can help urban gardening become a mainstream strategy to improve food security, nutrition, and environmental sustainability in India's urban centers.

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